1891.—SESS. II.

NEW ZEALAND.

DUNEDIN HOSPITAL INQUIRY COMMISSION

(REPORT OF).

Presented to both Houses of the General Assembly by Command of His Excellency.

ONSLOW, Governor.

To all to whom these presents shall come, and to Sir JAMES HECTOR, K.C.M.G., F.R.S., M.D., of Wellington, and EDGAR HALL CAREW, of Dunedin, Resident Magistrate, in the Colony of New Zealand—Greeting:

WHEREAS complaint has been made that the hospital known as the Dunedin Hospital, or certain parts thereof, is in an insanitary condition, and dangerous to the health of patients confined therein, and it appears expedient that a Commission should be appointed to examine, inquire into, and report upon the matter of the said complaint, and particularly as to an allegation that certain cases of blood-poisoning which have recently occurred at the said Hospital have arisen from the state of certain wards:

Now, therefore, I, William Hillier, Earl of Onslow, the Governor of the Colony of New Zealand, in pursuance and in exercise of all powers and authorities enabling me in this behalf, and acting by and with the advice and consent of the Executive Council of the said colony, do hereby appoint you, the said

JAMES HECTOR and
EDGAR HALL CAREW,

to be Commissioners for the purpose of inquiring into the truth or otherwise of all such complaints as may be laid or preferred before you in writing signed by the party making the same touching the matters aforesaid, and generally to inquire into, examine, and report upon the sanitary condition, suitability, or otherwise, of the premises used for the said Hospital, and as to the general arrangements made for the health, treatment, and care of the patients confined in the said institution, and, subject hereto, by all lawful ways and means to examine and inquire into every matter and thing touching and concerning the premises, in such a manner and at such times as you shall deem expedient: And you are hereby authorised and empowered to have before you and examine all books, papers, writings, and documents whatsoever which you may deem necessary for your information on the subject-matter of this inquiry, and also to have before you and examine on oath or otherwise, as may be allowed by law, all witnesses and other persons whom you shall judge to be capable of affording you any information touching or concerning the premises: And I do further require you within fifty days from the date of these presents, or as much sooner as can conveniently be done (using all diligence), to certify to me under your hands and seals your several proceedings and your opinion touching the premises: And I do hereby declare that this Commission shall continue in full force and virtue, and that, subject to these presents, you the said Commissioners shall and may from time to time proceed in the subject-matters hereof at such time and times within the prescribed limits as you shall deem convenient: And I do hereby further declare that this Commission is issued subject to the provisions of "The Commissioners' Powers Act, 1867," and "The Commissioners' Powers Act 1867 Amendment Act, 1872."

Given under the hand of His Excellency the Right Honourable William Hillier, Earl of Onslow, of Onslow in the County of Salop; Viscount Cranley, of Cranley in the County of Surrey; Baron Onslow, of Onslow in the County of Salop, and of West Clandon in the County of Surrey; Baron Cranley of Imbercourt; Baronet; Knight Grand Cross of the Most Distinguished Order of Saint Michael and Saint George; Governor and Commander-in-Chief in and over Her Majesty's Colony of New Zealand and its dependencies, and Vice-Admiral of the same; and issued under the seal of the said colony at the Government House at Wellington this nineteenth day of August, in the year of our Lord one thousand eight hundred and ninety. (L.S.) T. W. HISLOP.

Approved in Council.

ALEX. WILLIS, Clerk of Executive Council.

REPORT OF COMMISSION.

To His Excellency the Right Honourable William Hillier, Earl of Onslow, of Onslow in the County of Salop; Viscount Cranley, of Cranley in the County of Surrey; Baron Onslow, of Onslow in the County of Salop, and of West Clandon in the County of Surrey; Baron Cranley of Imbercourt; Baronet; Knight Grand Cross of the Most Distinguished Order of Saint Michael and Saint George; Governor and Commander-in-Chief in and over Her Majesty's Colony of New Zealand and its dependencies, and Vice-Admiral of the same: *

MAY IT PLEASE YOUR EXCELLENCY,—

We, the undersigned, acting under the authority of the Commission issued by your Excellency on the 19th August, 1890, empowering us to hold an inquiry touching complaints which have been made that the hospital known as the Dunedin Hospital, or certain parts thereof, are in an insanitary condition and dangerous to the health of the inmates, and particularly the allegation that certain cases of blood-poisoning have arisen in the said Hospital from the state of certain wards, have the honour to report,—

1. We met in Dunedin on the 18th and 19th August, 1890, to consider and settle the order and conduct of the proceedings, and arranged to commence our sittings for the taking of evidence at the Resident Magistrate's Court on Wednesday, the 20th August. After hearing the representations made to us by the parties interested, we further resolved that the proceedings should be open to the Press and the public. These arrangements were duly notified to the representatives of the Hospital Trustees and Dr. Batchelor. At the commencement of the meeting on Wednesday Mr. Solomon, solicitor, intimated that he appeared on behalf of Dr. Batchelor, and handed to us a complaint in writing, signed by Dr. Batchelor, in the following words: "I wish to make the following complaints to you, and to request that they may be considered and inquired into at the forthcoming Commission: (1.) That there are defects in the sanitary condition of the Dunedin Hospital. (2.) That these defects are of so serious a character as to be a source of grave danger to the inmates, and call for immediate remedy."

Mr. Frederick Chapman, solicitor, then stated that he appeared on behalf of the Hospital Trustees, but only for the purpose of meeting certain specific complaints contained in a letter from Dr. Batchelor to the Hospital Trustees, dated the 22nd July, and which letter had been forwarded by the Trustees to the Government, as containing the matters upon which they demanded inquiry.

The contentions of counsel on this preliminary point, which involved the definition of the questions at issue, will be found fully set forth in Appendix A to this report. (Extracts from *Otago Daily Times*.)

The result of the discussion was that the subject-matters of both letters were considered to be before the Commissioners, notwithstanding that the terms of the Commission seemed to require that the complaints to be inquired into should have been made to the Commissioners, and not to other persons previous to the issue of the Commission.

The letter submitted by Mr. Chapman and the specific complaints it contains are in substance as follows: That in two cases, after operations performed by Dr. Batchelor, which were not of a serious character, blood-poisoning supervened. That one of these patients died, and the other will have a tedious recovery. That the complication (fatal in one case) was due to unhealthy hospital influences.

The Commissioners (Sir James Hector acting as chairman) proceeded to take evidence on the 20th, 21st, 22nd, 26th, 28th, 29th, and 30th August, and on the 1st, 2nd, 5th, 6th, 8th, 9th, 10th, 11th, 12th, and 13th September. The Commissioners thus held sittings on nineteen days, during which they took the evidence of twenty-five witnesses, and received seventy-three documents and plans.

On the 25th August the Commissioners examined the Hospital together, and inspected the various wards and offices, so as to be able to apprehend thoroughly the references made to the different parts of the building in the course of the investigation.

On the 11th September the chairman also visited the Hospital at daylight, and observed the condition of the ventilation in the various wards.

2. At the first public sitting, on the 20th August, Mr. Solomon opened his case with an address, and outlined the defects which, as he contended, exist in the Dunedin Hospital, and respecting which he proposed to call evidence. The defects he enumerated, and all other defects which have been alleged during the investigation, may be conveniently classified as follows: (*a*) Affecting the site; (*b*) faulty plan of construction; (*c*) imperfect system of ventilation, lighting, and heating; (*d*) imperfect floors and walls; (*e*) overcrowding wards; (*f*) drainage; (*g*) closets, &c.; (*h*) baths and lavatories; (*i*) special wards; (*j*) special-case rooms; (*k*) kitchens; (*l*) nursing; (*m*) convalescent wards; (*n*) general sanitary condition; (*o*) fallowing wards; (*p*) new hospital; (*q*) dangers require immediate remedy; (*r*) domestic management; (*s*) results of practice.

Mr. Solomon called and examined the following witnesses: (1) Dr. Batchelor, (2) Dr. Maunsell, (3) Dr. Roberts, (4) Dr. Lindo Ferguson (members of the honorary medical staff of the Dunedin Hospital); (5) Dr. Closs, of Invercargill; (6) Dr. De Lautour, of Oamaru; (7) Dr. Truby King, Superintendent of Seacliff Asylum; and (8) Dr. De Renzi, of Christchurch Hospital.

Mr. Chapman then opened his case with an address, and in support of his contention called and examined the following witnesses: (9) Dr. Gordon Macdonald, (10) Dr. Stenhouse, (11) Dr. Jeffcoat, (12) Dr. Colquhoun, (13) Dr. Ogston, (14) Dr. John Macdonald, and (15) Dr. Coughtrey (members of the honorary medical staff of the Dunedin Hospital); (16) Dr. Copland, house surgeon; (17) Mr. Hogg, clinical clerk to Dr. Batchelor; (18) Mr. Miller, Chairman of the Trustees; (19) Mr. Burns, Secretary to the Trustees, and hospital steward; (20) Mr. Wales, architect; (21) Mrs. Burns, matron; and Misses (22) Fraser, (23) Shaw, (24) Waymouth, and (25) Monson, hospital nurses.

The following is an analysis of the opinions expressed by the expert witnesses on the alleged defects of the Hospital, as above classified. Each witness is distinguished by a number, and those called by Dr. Batchelor are marked as "B," and those by the Trustees as "T." The first column ("Disapprove") contains those who disapprove of the present arrangements, and the second column ("Approve") those who hold the opinion that the existing arrangements are satisfactory in each case.

Points in Expert Evidence.	Witnesses as per List.		
	Called by	Disapprove.	Approve.
(*a.*) Affecting the site	B.		2.
	T.	13	15.
(*b.*) Faulty plan of construction	B.	1, 2, 5, 6, 8.	
	T.	9, 11, 12, 13, 14, 15.	
(*c.*) Imperfect system of ventilation, lighting, and heating	B.	1, 2, 3, 5, 6, 7, 8.	
	T.	9, 10, 11, 12, 13, 15, 16	14.
(*d.*) Imperfect floors and walls	B.	1, 2, 4, 5, 6, 7.	
	T.	9, 11, 12, 13, 15, 16	14.
(*e.*) Overcrowding of wards	B.	1, 2, 3, 4, 5, 6, 7.	
	T.	9, 11, 12, 15, 16	10, 14.
(*f.*) Drainage	B.	1, 2, 7, 8.	
	T.		11.
(*g.*) Closets, &c.	B.	1, 2, 3, 5, 6, 7	10, 11, 14.
	T.	9, 12, 13, 15.	
(*h.*) Baths and lavatories	B.	1, 2, 5, 6, 7.	
	T.	11, 13, 15.	
(*i.*) Special wards	B.	1, 2, 3, 4, 6, 7.	
	T.	9, 11, 15, 16	9.
(*j.*) Special-case rooms	B.	1, 2, 4, 7.	
	T.	9, 11, 15, 16.	
(*k.*) Kitchens	B.	1, 2.	
	T.	13, 15.	
(*l.*) Nursing	B.	1, 2.	
	T.	12, 15.	
(*m.*) Convalescent wards	B.	1, 2.	
	T.	15.	
(*n.*) General sanitary condition	B.	1, 2, 3, 4, 5, 6, 7.	
	T.	16	10, 14.
(*o.*) Fallowing wards	B.	1, 3, 4	11, 12.
	T.		
(*p.*) New hospital	B.	1, 2, 3, 4, 5, 6, 8.	
	T.	9, 16.	
(*q.*) Dangers require immediate remedy	B.	1, 2, 7, 8.	
	T.	9, 15, 16	10.
(*r.*) Domestic management	B.		1, 2, 3, 4.
	T.		
(*s.*) Results of practice	B.	1, 4	2.
	T.		11.

3. With few exceptions, the differences of opinion among the witnesses relate only to the degree in which the defects are important, and the strongest argument urged in defence of the present conditions is that many other hospitals are as bad, and that, notwithstanding the defects, the general results have been fairly good.

Upon careful consideration of the evidence the Commissioners feel satisfied that the complaints made have been largely supported by the testimony, and that some of the alleged defects are of a serious nature, and require immediate remedy.

(*a.*) *Affecting the Site.*—The site of the Hospital was originally set aside as a market-place. It has an area of 5 acres, and, taking the Hospital at one hundred and twenty beds, would give a proportional area of 1,815 square feet for each, which, according to Dr. Coughtrey's evidence, is considerably in excess of the usual proportion of area for city hospitals.

The site in its original state was a flax-swamp. At present it is dry, and laid out in gardens and lawns. The soil is loamy clay, averaging 4ft. in depth, resting on 1ft. of peaty soil, which again rests on 1ft. of blue clay, underlaid by coarse gravel to an unknown depth. The report that the section was at one time used as a depository for city refuse appears to be incorrect. The foundation of the main building was carried down to the gravel, and no evidence of any subsidence of the structure has been detected. There does not appear to have been any systematic subsoil-drainage of the area, a provision which is of vital importance to the health of an hospital, as otherwise the "ground air" must exercise a deleterious influence on the health of the patients. One witness only strongly disapproved of the site, but his objections were chiefly founded on the very unsatisfactory condition of the immediate neighbourhood of the Hospital, which he characterized as being at present the most unhealthy part of the city. This is on account of the very offensive condition of the foreshore of the bay, caused by the outfall of the city sewers into stagnant tidal pools at the back of the retaining-wall and railway embankment. From our inspection of this foreshore, even though in winter, we feel convinced that the complaint against its insanitary condition is well founded, and we fear that even the most strenuous efforts to improve the sanitation of the present Hospital may be defeated, if provision be not made for the thorough removal of the sewerage. Such provision is of especial importance in the case of the dejecta from a large hospital, which must naturally contain the germs of many forms of disease. It appears to us that, without trenching on the special work of the civil engineer, we may suggest that in conjunction with

the present system of drainage a single intercepting pipe, with injectors on the "Shone system," if carried in a direct line from near the Botanic Gardens to deep water at the north end of the Ocean Beach, would be sufficient to obviate to a large extent the present dangerous condition of the foreshore. The other witnesses who referred to the site approved of it chiefly on account of its undoubtedly convenient position for the students attending the Medical School of the University, and its accessibility from all parts of the city.

The Commissioners are of opinion that, although the defects alleged are all capable of rectification, there is an inherent objection to the present site in the fact of its being situated on a low ground; and if at any time it is decided to erect a new Hospital an effort to secure a more perfect site should certainly be made.

(*b.*) *Faulty Plan of Construction.*—The building was originally erected in 1864, as the first part of a large group of Governmental and parliamentary buildings, at the time when the question of the removal of the seat of Government from Auckland was under discussion. In 1865 it was used for the first New Zealand Exhibition, and in the following year it was devoted to its present use; so that it has served as an hospital during the last twenty-four years. The Commissioners considered it important, seeing that the building was somewhat hastily constructed, and had been so long in use, to get a professional report on the present condition of the structure. That report states that the woodwork of the building generally is quite sound and in good order so far as flooring-joists, and beams, and main roof-timbers are concerned; but some of the woodwork in the skylights in the roof is defective, and that the cement covering the chimneys, parapets, towers, and turrets has become loose, and has given way in several places, exposing the brickwork to the disintegrating effects of the atmosphere, which is dangerous to the stability of the building. A large number of slates are broken, and the eaves, troughs, and ridgings are very much corroded. From the report and evidence of Mr. Wales, architect, it is apparent that repairs to some extent are required.

The building as at present adapted is nearest to the form of what is called the "block system" of hospital construction, which is universally condemned as a dangerous and expensive style of building for the purpose. The chief objection to it is that the ventilation is largely influenced by the great central hall, so that a mixing of the air takes place, and contamination is apt to spread from one ward to another, thus defeating that perfect isolation of different classes of diseases which is regarded as so essential a provision in all modern hospitals. The evidence, especially that of Dr. Maunsell, shows that this provision can only be made by what is termed the "pavilion system" of hospital construction, in which each ward forms a detached building, well lighted and ventilated from three sides, and only connected with the other buildings by open corridors. The arrangements adopted in the Christchurch Hospital appear to be very satisfactory in this respect, as will appear from reference to the evidence of Dr. De Renzi. The wards in the Dunedin Hospital are also too short for their economical administration, for, as pointed out by Dr. Truby King, the number of nurses required would be out of proportion to the number of patients for which the wards are really suitable. The basement story of the building is considerably below the level of the surrounding ground, and, although every care is taken to maintain it in as dry and wholesome a condition as possible, still, as the air from it ascends freely through the building, it must always constitute a source of danger to the patients from what may be termed "cellar air."

(*c.*) *Imperfect System of Ventilation, Lighting, and Heating.*—The defects in the ventilation and lighting of the wards are, as already indicated, to some extent a consequence of the form of the building. There does not appear to be any definite plan of ventilation, the wards receiving their supply of air merely from openings in the windows along one side and one end of the wards, and from the doorways. The escape for the foul air takes place by the fireplaces, and also, in the lower wards, by apertures into the main hall, and in the upper wards by special ventilators. The evidence in detail, especially that of Mr. Wales, gives the full particulars of the volume of air which can thus be supplied to the wards; but, as it has been shown by other evidence that it is impossible to keep the windows sufficiently open in all weathers, this arrangement for ventilation necessarily fails, and in consequence the wards in cold and stormy weather become quite unwholesome for the patients, Dr. Truby King indeed stating that under such circumstances wards at present containing fifteen patients would not have sufficient pure air for more than one patient. The defective ventilation was affirmed by nearly all the witnesses; and, as having an important bearing especially upon the hygiene of the surgical wards, it was shown that this defective ventilation must cause such a concentration of septic germs as greatly to increase the risk of the outbreak and propagation of infectious diseases within the Hospital. The existence of these pathogenic germs in a hospital is a necessary evil, and their injurious effects are only to be avoided by thorough dilution and continual replacement of the contaminated air. Moreover, it is impossible by this defective mode of ventilation to keep the air in the wards at all pure without causing draughts, which it was shown have in many cases produced injurious effects upon the patients.

The amount of light supplied to the wards from the windows was shown to be insufficient according to the best authorities, the upper wards having less than half the proper quantity. The distribution and form of the windows is also a defect, as they are arranged along one wall, leaving the other as a dead-wall, whereas they should be so distributed round all sides of the ward as to admit of a bed being placed between each.

The heating of the Hospital is closely connected with its proper ventilation. The only provision made at the present time for heating the wards is by open fireplaces, while the central hall is heated by low-pressure steampipe radiators, supplied from a large boiler in the basement. As no provision is anywhere made for the introduction of pure warm air, or for the maintenance of an equable temperature, in our opinion this is a system of warming which is neither satisfactory for the comfort of the patients nor an economical method of administration. Exhibit No. lxxiii., which is a return of the consumption of fuel during the five winter months of this year, shows that

the consumption is about equal to 56 tons of coal a month, or more than half a ton per month for each person in the Hospital, including patients and attendants.

(*d.*) *Imperfect Floors and Walls.*—In the wards of an hospital where patients subjected to a great variety of diseases are continually changing places there is nothing more essential than thorough cleanliness. This is easily effected as far as furniture and bed-clothing are concerned, but unless the floors, walls, ceilings, and other immovable parts of an hospital ward are so constructed as to be capable of being thoroughly cleansed from dust, which must necessarily carry with it the germs of disease, it is impossible to keep the wards surgically or medically clean. The floors in the wards are constructed of soft pine-wood boarding, and are much worn and full of open cracks. The joints are also very open, owing to shrinkage. An attempt has been made to improve their condition in some wards by the application of paraffine to fill the interstices; but it has not proved successful. In their present condition the floors seemed to be condemned by all the expert witnesses, Dr. Copland, the house surgeon, stating that they were as good contrivances as could be got for harbouring germs. The walls of wards Nos. 1 and 2 have been well finished in Keene's cement, and are sufficiently non-absorbent; but in the other wards, with the exception of the painted dado 4ft. from the floor, the walls are rough and absorbent, and are periodically coated with white-wash containing size. As pointed out by Dr. Truby King, this is very objectionable, size being the material which is used as a favourable medium for developing pathogenic germs for experimental purposes. Dr. De Latour found by analysis that the surface-matter on the walls of one ward contains a large percentage of organic matter, from which it should, under proper conditions, be entirely free. The ceilings have the same defects, being composed of plaster, which presents a highly-absorbent surface; and in the lower wards the beams that support the upper floor are exposed, and present a rough surface, showing the original saw-marks. Objection was also taken to the form of the mouldings and other fittings, which present angles and ledges upon which dust can collect.

(*e.*) *Overcrowding of Wards.*—The present average number of beds in each of the eight main wards is about fifteen, the number having been reduced of late years from eighteen. At present it is the practice to keep two wards empty, one in the male and the other in the female side, for the purpose of periodical cleaning, which necessarily crowds the patients to some extent in the other six wards. The wards are not always full, and the actual number of patients upon a certain date was ninety-two. The weight of evidence was clearly that this must be considered as an overcrowding of the wards. Dr. Truby King states with regard to No. 7 ward—which has been generally taken as the type ward throughout the evidence, seeing that it was there that the serious accidents occurred in Dr. Batchelor's cases—that sixteen patients—which was the number on 22nd July—in that ward would certainly run considerable risk, and that under present circumstances, even with the window-valves fully open, it should not have more than eight persons in it. The references to the proper amount of bed-space, floor-space, and cubic space which are required for an hospital ward, as compared with the amount provided in the Dunedin Hospital wards, are very fully set forth by several of the witnesses, and show that, although the Hospital is sufficiently large for the average number of cases, the present manner of allotting the space certainly leads to overcrowding. From long experience a proper standard has been arrived at on the following points which bear on this question of overcrowding: The cubic air-space, or, in other words, the share of atmosphere, provided for each patient; the amount of floor-space, or room for conveniences, for each patient; and the amount of bed-space, or the distance between the beds so as to prevent unpleasant and in some cases dangerous contact, and to allow a proper attention to the wants of the patients—all these matters are clearly set forth in the text-books, the proportional dimensions being given in each case. It was attempted to be shown that in such matters there is a theoretical and a practical standard, but in our opinion this is not a fair statement of the circumstances. It is rather that the best results cannot be attained in the economical treatment and for the comfort of the patients in an hospital without perfect provision being made, but under some circumstances the administration must be prepared to expect less perfect results, and trust to extra vigilance and precaution in the nursing and skilled treatment as a means of preventing epidemics and similar accidents. It is quite fallacious to suppose that there is one successful theory of safety and another successful practice of safety. From the evidence before us we are of opinion that with extra sanitary precautions, and by reducing the number of patients in the wards in proportion to the imperfect arrangements for ventilation, &c., and by the profuse use of antiseptics, even a very faulty hospital can be conducted with comparative safety to the inmates, although sooner or later the defective arrangements may manifest their influence almost without notice. Dr. Truby King points out that, while wards Nos. 6 and 7 as at present arranged should not with a minimum of safety have more than eight patients in each, if rearranged and perfected they could jointly provide accommodation for twenty-seven patients. The average number of patients in the Hospital may be taken from the evidence as about one hundred. Roughly speaking, the wards in the Dunedin Hospital provide 100,000 cubic feet of air-space. A distinction must be made between surgical and medical wards, the former requiring more room. The proportional division, from the best authorities, would provide for the treatment of forty-four surgical cases and fifty-six medical cases. This calculation only takes into account the east and west sides of the building, leaving out the north and south sides, which are at present devoted to administrative purposes. If properly ventilated, warmed, lighted, and made thoroughly "dust-proof," it thus appears that the ward-space is quite sufficient for the hospital requirements at the present time.

From the evidence we have taken it would appear desirable that in any future scheme for the rearrangement of the Hospital the following measurements should be adopted as nearly as possible: For medical wards, cubic space 1,500ft. for each patient, floor-space 100 square feet, and 8ft. width for each bed; and for surgical wards, 2,000ft., floor-space 130 square feet, and the bed-space 11ft.

(*f.*) *Drainage.*—As already stated, there is no system of subsoil-drainage of the ground. The drains from the building have three connections. The one leading from the kitchen to the south-east corner of the ground, where it enters the Cumberland Street drain, is not connected with the others, excepting indirectly through the street sewer. It is provided with a separate ventilating grease-trap. This is an excellent arrangement, and the drain is in good order. The main drain gathers the sewage from three sides of the building, and connects with the Cumberland Street drain at the north-east corner of the section. This drain is ventilated by two pipes that ascend the eastern tower, so that back pressure of sewer-gas is provided against. The remaining corner of the building, including that which takes a downpipe from Nos. 2 and 7 wards, is connected with the King Street drain, and no provision seems to have been made for ventilating it on the street side of the trap, so that a considerable pressure of sewer-gas was discovered. The evidence of Dr. Truby King shows that the traps which disconnect these different drains from the building are of old-fashioned pattern—that they are not as thoroughly efficient as they should be, and that the total absence of any system of thorough flushing is a serious defect. The downpipes from the wards are not in a thoroughly satisfactory state, according to the evidence. The chief defects pointed out specially by Dr. Truby King and Dr. De Lautour are that the storm-water pipes from the roof are used also as the soil-pipes, and carried down inside instead of outside the building; that the ventilation-pipes are not in a proper position; and that during a heavy downfall of rain the "water-seal" traps in the different connections are apt to be syphoned out, and so leave direct connection for the sewer-gas to pass into the wards. This, however, would only be a practical danger in the case of Nos. 2 and 7 wards, for the reason above stated; and it is to be noted from Mr. Wales's report that, whereas in all the other sink- and lavatory-traps the water-seals have a depth of 2⅜in., in the No. 7 ward they have only a depth of 1¼in. to 1½in. It was also pointed out to us that the down drains and connections are so built in that it is very difficult to ascertain their condition, and that all such fittings in an hospital should be freely open to inspection, so that any defect can be promptly discovered and remedied.

(*g.*) *Closets, &c.*—The closets are in the corner towers, and are only separated from the wards by a double door, which is practically only single, as there is no ventilation between the doors, so that the closets may be said to open direct off the wards. They are, with few exceptions, of the most modern construction; but the details of fitting them according to the instructions of the inventor would appear either to have been misunderstood or neglected to some extent, so that their ventilation is defective. In the absence of proper urinals, they have also to be used for that purpose, and this may also tend to make them offensive at times. The closet-rooms are, however, very well ventilated by windows; but the danger is, that when the door is open the draught towards fireplaces in the wards must necessarily draw any offensive air into the wards.

(*h.*) *Baths and Lavatories.*—The baths and lavatories are actually in the wards, and only separated by a low screen, so that any effluvia arising from them actually mixed with the air of the wards, which was pointed out in the evidence to be an extremely objectionable arrangement, as the steam acting on the size in the walls and ceilings is liable to promote the propagation of pathogenic germs. It would be desirable to have the whole of the lavatories and closets completely isolated from the wards by a corridor with cross-ventilation in it; and the importance of this point seems to have been on several occasions urged by the honorary members of the medical staff.

(*i.*) *Special Wards.*—There are certain classes of disease in which it is most important that the patients should be separated from others, and no provision at present exists for permitting of any such classification. The result is that infectious diseases have to be treated in the general wards, and even such cases as erysipelas have on admission to be placed in the medical wards along with other patients, who are thereby exposed to an undoubted risk. Dr. Coughtrey considers that the provision of special wards for infectious and septic cases in a detached building is of the most pressing urgency, and his view was supported by nearly all the other witnesses. Patients suffering from diseases of the eye, it was pointed out, require to be treated in a special ward, not only on account of their great liability to septic infection, but also because peculiarities in the method of arranging the light in the wards are absolutely necessary, and these would be extremely unpleasant and hurtful to general patients. There are generally about fourteen to twenty such cases to be provided for. Again, gynecological cases are not suitable for treatment in general wards, especially where the hospital is used as a medical school, as they are a class of cases only adapted for senior students, and also from a surgical point of view, as they present physiological peculiarities that render the cases operated on more sensitive to septic infection than other surgical cases.

The evidence also proves that to make the hospital still more perfect provision is required for wards for the separate treatment of cases of tuberculosis apart from those of acute lung-disease, and that it is also desirable that special wards should be provided for offensive surgical cases. The present accommodation for children is provided in a semi-detached wooden building, and is not entirely satisfactory. We found that the ground on the shady side, even in dry weather, was damp and mouldy, and the floors of the building too close to the surface, although everything has been done to secure an under-current of ventilation. We were glad to be informed that the use of this building for the purpose is only regarded as a temporary expedient, and trust that one of the earliest improvements will be the construction of a suitable ward for juvenile patients.

(*j.*) *Special-case Rooms.*—Cases frequently occur in which it is necessary to isolate a patient, for special treatment and for the comfort of the other patients. No satisfactory provision at present has been made for this purpose. In cases of temporary mental alienation such seclusion is imperative, and the only provision that exists is a dark cell in the basement that is not creditable to the establishment. In connection with the surgical wards provision should also be made for the separate treatment of the patients after severe operations, under the most favourable circumstances for recovery. The usual method is to have a small ward-room, to contain one or two

cases, attached to the general ward; and this could be effected in any rearrangement of the hospital space.

(k.) Kitchens.—The only kitchen in the Hospital is situated in the basement underneath No. 3 ward. It is below the general level of the ground. The roof is low, the lighting bad, and the ventilation very imperfect. The cooking is chiefly done by steam supplied from a large boiler, which also supplies the warming apparatus and the steam for heating the water in the wards. The space in which the boiler and furnace are situated is very confined, and the heat and fumes are stifling. In ascending through the floors these fumes have corroded the cement, so that they escape into the main hall and at times cause an offensive smell. They have also acted on the flushing and gutters of the roof, requiring their renewal. Both No. 3 and No. 4 wards, and especially the former, are seriously affected by the position of the kitchen; and as these are occupied by medical cases it is impossible that the best results of treatment can be attained under such circumstances. There is no matter of more importance to the successful treatment of the sick than that their food should be prepared with the greatest care. The kitchen should be lofty, well ventilated, and amply lighted; and suitable provision should be made for securing that the food is absolutely free from any tainting influence. Under the present circumstances it is impossible that such provision can be adequately made. All the evidence taken on this point went to show that the kitchen is in an improper situation, and that it should be removed to a separate building. The arrangement for serving the food to the various wards is also very crude and unsatisfactory, as will be noted from the evidence of the house steward, Mr. Burns. The absence of any provision in the wards for warming food during the night has also been strongly commented on by some of the witnesses. It was pointed out that the nurses in charge should have a room fitted with proper appliances for administering to the wants of the patients and carrying out the medical instructions as to special feeding and the like. At present it appears that the nurses have to leave the wards and descend to the basement when such special comforts have to be obtained, and during their temporary absence the patients are left without attendance.

(l.) Nursing.—An improvement in the system of nursing was one of the earliest demands made by the medical staff, and much has been done in this direction. The chief requirement now is the provision of a nurses' home. The accommodation provided for the nurses at present is very crowded and uncomfortable, and must increase the hardship of their duties to an unnecessary degree. It appears that the necessary funds for remedying this defect are now in the hands of the Trustees, and that no time will be lost in providing a nurses' home. This provision will, moreover, have a beneficial effect on the general condition of the hospital by setting free a number of rooms that can be used as small-sized wards.

(m.) Convalescent Wards.—These should form a prominent feature in every well-conducted hospital. The rapid recovery of patients after they have been successfully treated is a matter that largely affects the cost of management. If such patients remain immured in a sick-ward day and night their convalescence is delayed, and they are apt to become morbid. They require change of habit and association, but at the same time it is needful that they have continued medical or surgical supervision. The best arrangement would undoubtedly be a separate convalescent hospital somewhere in the country; but that would involve a large extra expense for the maintenance of a separate institution. The alternative is to provide cheerful recreation-wards. The usual number of convalescent patients in the Hospital is about twenty males and eight females, and the only provision for their accommodation out of the sick-wards is in a small dingy room without windows, that cannot hold more than eight or ten patients with comfort.

(n.) General Sanitary Condition.—Eight out of ten of the medical witnesses whose duties require them to hold an opinion on this subject expressed themselves as dissatisfied with the present condition of the Hospital. The report of Mr. Burns shows that very great improvements have been gradually effected in the Hospital since 1877, and that every reasonable improvement suggested by the medical staff has been, as soon as practicable, effected by the Trustees. Notwithstanding this, there has been a growing distrust of the security of the wards, especially among the surgical practitioners, and the voluminous details of cases that were cited in the evidence seem to prove that the successful treatment of surgical cases is not so easy as it was in former years. The evidence presented to us in order to institute comparisons with other hospitals as regards the death-rate, both general and after operations, was suggestive, but it seemed to be admitted that statistics on such subjects are liable to lead to erroneous conclusions unless the nature of the particular cases is carefully examined into in detail—a procedure which is not possible under the system on which the returns have hitherto been made. Taking the experience in the Dunedin Hospital alone, it is very clear from Mr. Burns's report that the state of things in 1877 must have been extremely unsatisfactory as compared with the present state of the Hospital, and, as Dr. Truby King points out, one naturally expects that the improvements would have reduced the death-rate to a marked extent, instead of which the present death-rate is actually higher than it was in that year. To some extent this may be accounted for by the different class of patients which were then admitted for treatment, the Hospital at that time being to some extent used as a workhouse. But, notwithstanding this, there remains a suspicion that, owing to the various circumstances that we have referred to, the general sanitary condition of the Hospital has been undergoing gradual deterioration.

(o.) Fallowing Wards.—Some of the witnesses expressed very strong approval of the practice which is adopted in the Dunedin Hospital of leaving the different wards in succession vacant for a few weeks. Formerly only one ward was treated at a time, but of late years two wards, one on the male, the other on the female side, are always kept empty. Dr. Colquhoun, who is a very moderate and thoughtful witness, expressed the belief that this procedure minimised the danger, and had it not been for this rotation of wards the Hospital would by this time have been saturated

with unhealthy conditions. The details of the process of cleaning which the wards undergo are given in the evidence of Mr. Burns; but Dr. Truby King expressed himself as dissatisfied with the degree of disinfection of the wards which is secured by the means adopted. It certainly appears to us a most wasteful expedient to sacrifice one-fourth part of the available ward-space with such doubtful results, and it would seem to be a more reasonable procedure to put the floors, walls, and other parts of the wards in such thorough order that they could be kept constantly clean and healthy, as is done in other hospitals.

(*p.*) *New Hospital.*—The evidence shows a complete unanimity on this point. Even the few witnesses who expressed their contentment with most of the existing conditions were strongly in favour of having a new hospital. It is a grave question whether the expense of thoroughly refitting and sufficiently enlarging the present building so as to obviate its defects would not be more costly and less satisfactory in the long run than to erect a new hospital on modern lines; but, as the question of expenditure was not before us, we offer no opinion on that subject.

(*q.*) *Dangers requiring Immediate Remedy.*—Dangers which require immediate remedy have, in our opinion, been proved to exist by the evidence, the most pressing being those arising from the defects in the ventilation and closet arrangements, and the position of the kitchen. The provision of special wards for the septic and infectious cases, the building of a nurses' home, and the improvement of the floors, walls, and ceilings, so that the practice of fallowing the wards may be discontinued, would, we are of opinion, set free sufficient space to relieve the present overcrowding. In this way temporary relief ought to be obtained to a sufficient extent to enable the Hospital to be continued in use for some years, and until a new hospital can be provided. On the other hand, to convert the present building into a permanent hospital would require radical changes and improvements, the nature of which we shall have occasion to point out.

(*r.*) *Domestic Management.*—The domestic management of the Hospital was praised by all the witnesses, and it was urged—apparently with good reason—that the defects of the Hospital had been largely neutralised by the zeal and assiduity of the steward, Mr. Burns, and by the faithful attention of the matron and nurses.

(*s.*) *Results of Practice.*—The actual results of the medical and surgical treatment of the cases in the Hospital, as testified to by the members of the medical staff, are on the whole satisfactory, but it is admitted that this has been largely due to the extra precautions and to the extensive use of antiseptics, of which there appears to have been a larger proportion used than in other similar institutions.

In concluding this review of the evidence, which bears on the general charge against the sanitary condition of the Hospital, it is incumbent on us to state that in our opinion no blame rests on the Trustees. Dr. Coughtrey appears to have commenced pointing out the defects of the Hospital as early as 1875, and great improvements were made in consequence, which improvements have been steadily going on as means permitted. It was not until May, 1887, when there was a conference of the medical staff with the Trustees, that any important defects were brought to their notice. It is true that in 1885 the staff had called attention to the defective state of the ventilation of the wards, and were asked by the management to make a suggestive report, but they never did so, and nothing was done; and at the conference above referred to the question of improving the ventilation was not mooted, and the only suggestions made were for an improved system of nursing, a properly-equipped room for surgical operations, in which the students could be present and derive proper instruction, and, lastly, the providing of certain special wards. All these demands seem to have been complied with as far as possible, the operating-theatre alone having cost £1,604 16s. 8d., which was a very substantial concession to the requirements of the Medical School. The total amount which has been spent under the present trust on repairs and additions since 1886 has been £4,060 16s. 7d. In the end of 1888 some members of the medical staff had the advantage of examining other hospitals throughout the colonies, and the experience thus gained appears to have focussed the impression which for many years they had entertained as to the insanitary conditions which pervaded the Dunedin Hospital. This led to an active protest, which in February, 1889, after animated discussion, took official form as a memorandum from the medical staff to the Trustees. This memorandum was drafted by Dr. Lindo Ferguson; but there seems to have been some irregularity in its formal acceptance by some members of the staff, and now it appears from the evidence that some of the staff are disposed to repudiate any responsibility for the strictures it conveys. This memorandum is referred to in the evidence as ExhibitNo. iii., and is an important document, asserting the existence in the hospital arrangements of most of the defects that have been brought up during the present investigation. It was hardly the fault of the medical staff that such a protest was not made at an earlier date. Of late years, especially since the researches of Pasteur and Koch, the methods for the treatment and prevention of disease have been almost revolutionised, so that what are now taught to be necessary safeguards can only be found described in the latest editions of the standard text-books; but the success which crowns the modern methods for the treatment of disease is so pronounced as to make it the imperative duty of every enlightened physician and surgeon to insist on their adoption in hospital practice, both from motives of humanity and economy. In the course of the evidence placed before us frequent reference was made to the system of "Listerism" in surgery, which means the creation of such thoroughly antiseptic surroundings that operations can be safely performed even where an infected atmosphere is prevalent. This expensive and in some respects uncertain method of treatment is now being superseded in hospitals by an aseptic method of treatment, depending for its success on thorough cleanliness, thorough dilution of the ward-air, and other provisions that enable the prevention rather than the destruction of the evil influences arising from pathogenic germs. It is not unnatural that the promulgation of such radical changes should have been received at first with some little distrust, even by members of the profession, and still less is it to be wondered at that the Trustees, who have the responsibility of administering

public funds, should have refrained from taking action until the matter was more fully discussed; nor should there be any surprise that the ideas of the reformers have been urged with perhaps too great zeal and urgency. It may be observed that in our discussion of the evidence bearing on the general condition of the Hospital we have relied as much as possible on the opinions expressed by witnesses other than Dr. Batchelor. This is not on account of any doubt in the minds of the Commissioners as to the accuracy of Dr. Batchelor's statements, but, as it has been suggested that in taking the action he has done to promote this inquiry he has been influenced by exaggerated apprehensions, or actuated by personal motives, we deemed that it was fairer to him and to all concerned to draw as much as possible from outside evidence those proofs which, in our opinion, amply support the allegations of his own evidence.

Suggestions.—We have already indicated our conclusions as to the most urgent reforms required for the Hospital as a temporary expedient pending the construction of a new hospital on a better site. If it is decided, on the other hand, to improve the present building, and to convert it into an institution suitable for the requirements of Dunedin, not only as the central institution for a large population, but also as a training establishment in connection with the Medical School, extensive alterations and additions are imperatively required. In addition to the improvement of the method of ventilation and warming the wards, of closets and drainage, and of the imperfections of the floors, walls and ceilings, the erection of buildings for infectious cases, and the removal of the kitchen, and the provision of a nurses' home and children's ward, the following suggestions are culled from the evidence: Dr. Truby King suggested that, the partition being removed, the whole length of the east and west sides of the building could be thrown into two wards, which would have the proper proportions as to length, cubic space, and floor-space, and he also proposed to improve the ventilation by a shaft in the main hall with suitable apertures in the internal walls of the wards, so as to establish a system of cross-ventilation from the outside windows into the main hall. Dr. Ogston's suggestion is somewhat similar, but goes farther, as he proposes that the connecting portion of the north side of the building, together with the roof and floor of the main hall, should be entirely removed, and that windows should be inserted in what are at present the inner or dead walls of the wards, thus converting the east and west sides of the building into an independent two-storied pavilion, with windows on both sides. Plan No. 4, fig. 1 and 2, herewith attached, is a sketch of how these changes in the Hospital could be effected. The objection to the scheme of lengthening the wards is that the structural requirements of the building, and especially of the large towers, will not allow the wards to be made continuous, as they would have to be broken up in the middle by low narrow arches, that would interfere seriously with the ventilation and the proper supervision of the patients by the nurse. Considering these objections, we think it would be more advisable to retain the present subdivisions of the main building, and devote the wards to a more thorough classification of medical and surgical diseases than is at present possible, enabling this to be done by the erection of two surgical wards in the form of independent pavilions, on the plan of those of the Christchurch Hospital. Apart from all other considerations, it seems to be most important that new surgical wards should be provided, for sanitary reasons. Such provision, together with the nurses' home and the separate wooden cottage-building for septic and infectious cases, as suggested by Dr. Coughtrey, would so relieve the main building that ample ward-accommodation would be available for thorough classification of the other patients; at the same time the roof and floor of the main hall might be removed and converted into an asphalted courtyard, which would permit of the windows being broken through the dead-walls, as proposed by Dr. Ogston, while access to different parts of the building could be provided by covered gangways. There would also be quite sufficient spare space to admit of the lavatories, closets, &c., being entirely removed from the wards into space taken from the north and south parts of the building; while a nurses' room and examination-room could be provided for each pair of the upper wards in what are at present the tower wards. A sketch-plan showing these suggestions (No. 5, fig. 1 and 2) is attached to this report.

The following is a recapitulation of the principal additions and improvements which have been suggested in this report: (1) Separate building for infectious wards; (2) new kitchens and store-rooms; (3) improve the bath and lavatory arrangements, increasing the number of closets, and supplying urinals; (4) renew or renovate the floors, and finish the walls and ceilings so as to render them non-absorbent; (5) improve all the drains, and supply main flushing-tanks and Buchan traps; (6) abolish the system of warming with open fires, and substitute a regulated supply of pure warm air to the wards, so as to perfect the ventilation; (7) admit sunlight and air to the interior of the building, and to both sides of the wards, by removing the roof and floor from the central hall and cutting windows in the interior or dead walls; (8) erect a nurses' home, for which £2,251 11s. 1d. is available; (9) erect two new surgical wards, for male and female patients; (10) equip special wards for gynecological and eye diseases and for juvenile patients, for which purposes a sum of £1,270 has been subscribed, which, if it receives the Government subsidy, will amount to £2,794; (11) erect two comfortable and cheerful recreation-wards for convalescent patients of both sexes.

As it is not desirable to erect very expensive buildings on the present site, the expenditure upon these suggested additions and improvements would, at a rough guess, be probably under £12,000, of which sum about £5,000 is at present available (including the Government subsidy). A further sum of £5,000, bequeathed by the late Mrs. Robert Campbell, is also in the hands of the Trustees, but from the terms of the will it has to be invested by them, and the proceeds devoted to a special purpose.

4. Having now dealt with the evidence relating to the general charge of the insanitary state of the Hospital, it only remains for us to deal with the cases cited by Dr. Batchelor for the purpose of drawing immediate attention to the condition of the Hospital. The cases which have been cited throughout the investigation are of two kinds. In the first place, we have the two cases cited in the specific charge made by Dr. Batchelor in his letter to the Trustees dated the 22nd July, 1889;

and, secondly, the many other similar cases of earlier date, in which it was alleged the patients had suffered improper hospital influences. With reference to these two groups of cases, Dr. Batchelor, in his letter to the Trustees, states, "I fully sympathize with you in the difficulties in the way of examining into a number of cases that have occurred in the past under a different *régime*, and at possibly lengthy intervals, where it is almost impossible to obtain reliable data. Here, however, are cases which permit of close and thorough investigation." We have therefore deemed that it is only incumbent on us to express an opinion on the evidence in the cases cited, using the others only as illustrations of the general charge.

The case of Mrs. S——— was as follows: She had been a patient of Dr. Gordon Macdonald, who, after a month's treatment, sent her into the Hospital to be operated on by Dr. Batchelor. He himself suggested the exact nature of the operation (Emmet's) before she went in, and, although he states that up to that time she had suffered from fever rigours and a discharge, he now says that these symptoms should have deterred the surgeon from operating, which is somewhat inconsistent. Dr. Batchelor took special precautions, and twice examined the patient while under chloroform to make sure that there were no counter-indications to the operation. It was attempted to prove by the patient's chart that she was in a feverish condition on the morning of the operation. The evidence shows that Dr. Batchelor and the house surgeon were both ignorant of that circumstance, and there is a strong presumption that the chart is in error. Dr. Copeland states that the chart has been bungled, and two charts were produced, but only one could be sworn to by nurse Waymouth, who took the original temperature-observations, while Dr. Copeland's recollection is that some at least of the observations were originally noted on a loose scrap of paper—which has since been destroyed—and from that entered first on one chart and then on the other; so that the proof that the chart produced was the original document thus failed, and no reliance can be placed on it as evidence that Mrs. S——— was in a condition of fever at the time of operation. The operation is a very simple one, and generally performed without any danger to life. For five days the case appeared to do well, but was then suddenly attacked by septic peritonitis, and died in two days from septicæmia, or blood-poisoning. There is some difference of opinion among the medical witnesses as to the mode in which the septic infection was communicated, arising evidently from the term "septicæmia" having different meanings applied to it. Dr. Colquhoun considers it as an acute disease that is not confined locally, but spreads rapidly throughout the body in the blood, and is invariably fatal through its producing secondary inflammation; and Dr. Jeffcoat holds somewhat the same views; the effect of which would be the theory that the peritonitis was the result of general blood-poisoning from the surgical wound having been infected. This is evidently not what is meant by Dr. Batchelor, nor by Dr. Roberts, who made the *post-mortem* examination. They hold that the peritoneum was directly infected by the septic matter having followed up the natural passages which communicated with it, and, further, that the probable source for the germs was to be found in the air of the ward, which was otherwise proved to be infected at that particular period. Exactly similar mishaps in the case of Emmet's operation are described by the latest authorities on the subject, and this latter pathological explanation is given. The *post-mortem* operations described by Dr. Roberts are opposed to the direct-infection theory of the wound, as he states that in such a case acute septic cellulitis must have existed, but that he examined carefully for evidence of that inflammatory action, but failed to find it, while the evidence was "as plain as could be" that the septic poison had travelled up the natural passages. While all witnesses admit that now or at any time it was quite impossible to obtain absolute proof as to the source of the infection, taking all the circumstances bearing on this into consideration, it seems to us to be not only possible, but that there are strong grounds for suspecting, that it was due to the infected air of the ward. At the same time, the charge made against the Hospital, so far as it is founded on this case alone, must be considered as not proven.

The second case cited by Dr. Batchelor as having been seriously affected by the insanitary condition of the Hospital was that of Mrs. T———. In this case a very simple operation was performed—so simple that Dr. Batchelor permitted it to be done by his pupil. Every precaution was taken, but in two days after the operation symptoms of septic poisoning appeared in the wound, and general blood-poisoning was only restrained by adopting the most active measures. Notwithstanding this the patient, who should have been cured and discharged in a few days, had to continue under treatment in the Hospital for two months. In this case the patient was not removed from the ward for the operation, so that from whatever source the septic taint that infected the wound came it was acquired there. Dr. Batchelor considers it a reasonable inference that it was from the air in the ward, that was known to be infected at the time. On the other hand, it has been sought to explain that the infection of the wound occurred within the patient herself; but, as no direct evidence was submitted in support of this view, we are of opinion that the same suspicion as to the origin of the infection having been derived from the air of the ward applies to this case as well as to that of Mrs. S———.

In concluding our report we have to acknowledge the great help that has been afforded to us in this investigation by the Hospital Trustees. They have evinced the most eager desire to place all the information in their possession at the disposal of the Commissioners. Although placed somewhat by their own action in the position of defendants, the Commissioners were impressed with the conviction that the case of the Trustees was conducted solely with the purpose of bringing to light all the information that could be of future use to them in deciding how best to improve the condition of the Hospital which they control.

Given under our hands and seals this second day of October, 1890.

(L.S.) James Hector, M.D.
(L.S.) E. H. Carew.

MINUTES OF EVIDENCE.

WEDNESDAY, 20TH AUGUST, 1890.

DR. BATCHELOR sworn and examined.

1. *Mr. Solomon.*] What is your name?—Frederick Campion Batchelor.

2. What is your title?—M.D., M.R.C.S.

3. Are you registered on the roll of medical practitioners for New Zealand?—Yes, I believe that I am.

4. You are, I think, a member of the staff of the Dunedin Hospital?—I am.

5. For how long have you been a member of that staff?—For about twelve years, but I am not quite certain. It may be a little more, but Mr. Burns, the house secretary, will be able to tell you exactly.

6. When you were first apppointed what position on the medical staff did you occupy?—I cannot tell you exactly. I was for a year or two on the medical staff, and was afterwards on the surgical staff. I think there was no distinction at first: their duties were not defined at first.

7. At all events, you were a member of the surgical staff for a number of years?—Yes, I was.

8. Since 1886, in what capacity have you served on the staff of the Dunedin Hospital?—I have been a specialist in gynecological and obstetrical cases for the last four years.

9. I will now put to you a general question to lead up to the subject. What has been your opinion for some time past as to the hygienic condition of the Dunedin Hospital?—I have held a very strong opinion almost from my first connection with the Hospital, I may say, that it was exceedingly bad. I have heard the members of the staff frequently discuss the subject among themselves, and I think that we have all practically agreed that its hygienic condition is very bad—indeed, almost as bad as any hospital can be—possibly, I should say, as bad as any hospital I have seen. I will say that, at any rate.

10. When did you first definitely draw the attention of the staff or the Trustees to this condition of affairs?—The attention of the staff had been drawn to it for a number of years. We had been trying for several years to effect changes in the Dunedin Hospital. There were so many reforms that we wanted that we really did not know where to begin. I think that the reform of the nursing was the most urgent of all the reforms, and I think that it was an alteration in the nursing that we all tried to get effected first.

11. In the month of May, 1887—the question was brought before the attention of the staff at that time, was it not?—Yes; I think it was at a meeting, but I would not be quite sure, called on my advice. However, it is in the minute-book of the Hospital.

12. *The Chairman.*] When you use the pronoun "we," do you mean the Hospital staff at that time?—Yes. I am speaking of my own knowledge. The Hospital staff were not thoroughly in accord. One or two of the staff did not agree that some of the alterations were necessary, but the majority of the staff did.

13. Perhaps it would be better if you were to say "I," as one of the Hospital staff, instead of "we," as the latter term involves the opinion of persons who are not clearly defined?—Just so.

14. *Mr. Solomon:* Will you just read out from that book? [Hands a book to the witness.]

The Chairman: What is he going to read from?

Witness: From the minute-book of the Hospital staff.

15. *Mr. Solomon.*] You find there—do you not?—that the question of reform was thereupon brought before the medical staff by you?—Yes; I see that it was brought forward by me.

16. Do you know whether that was referred to the Trustees?—Yes. At that time we had considerable discussion as to what we should do. I remember that I had some time previously a case of septicæmia which I was unable to account for satisfactorily. It was the case of Mrs. Sophia Munro, I think, and I cited it as it was a specially strong one, which ought to be brought forward. There was considerable discussion among the staff as to what was the best thing to be done, and it was agreed that we should meet the Trustees, and report to them as to the very unsatisfactory condition of the Hospital, and make certain suggestions for its improvement.

17. Was anything definite done by the Trustees towards improving the condition of the Hospital?—We met the Trustees and had a long discussion about it. I think, myself, that the thing which we at that time considered to be the most urgent was the operating-room. That came about in consequence of our having a very small operating-room and a number of medical students crowding around us. We could see that that was a very grave source of danger, and we thought that it must be done away with. We agreed that was the first and most important matter requiring to be dealt with at that time. I was doubtful myself whether it was the most important matter, but we urged that most strongly. The next thing that we urged was the nursing. We regarded a change of the nursing as being essential. And finally we recommended the providing of special wards for special cases.

18. What did you do next? Did you not read your paper to the Trustees?—Yes.

19. That was in February, 1889, was it not?—Yes. I should like to make some explanation about that. We were in the habit every year of sending in notice to the annual meetings of the Trustees—it was Dr. Colquhoun who first suggested this—pointing out the necessity which existed

for a change in the nursing system; and this motion came up. At that time I thought that something more than this change was wanted, but I thought that it ought to be pressed home very strongly, and I requested the staff at that meeting to defer sending in their annual resolution until I had—I may say that I was then preparing a very strong paper to send in to the Trustees, and they kindly agreed to allow me to do so.

20. Then, you did, in February, 1889, read that paper?—Yes.

21. *Mr. Chapman.*] That is the paper which you have in the book before you?—Yes.

Mr. Chapman: I have not yet had a copy of that.

Mr. Solomon: I shall be glad to put it in.

The Chairman: That is a different book, is it not, from the one already put in?

Witness: Yes.

Mr. Solomon: The Commissioners will find this report at page 143 of the minute-book.

The Chairman: Do you put this book in?

Mr. Solomon: Yes. [Ex. vi.]

22. *Mr. Solomon.*] In that paper did you call attention to the unsatisfactory condition of the Hospital?—I did.

23. You also referred there, did you not, to the necessity for special wards for the treatment of diseases peculiar to women?—I did. At that time I had collected a sum of money for the erection of such a ward, and I referred to the fact in that paper.

24. There was considerable discussion, we know, of a somewhat acrimonious character?—Decidedly. I should like to make a personal statement with regard to that. This paper, which I read before the Trustees, was written with the object of drawing public attention to the state of the Hospital. I felt that the public generally had no idea of what an unsatisfactory state the Hospital was in; and in writing to the Trustees my real object was that they should appeal to the public, so that the latter might get them out of their difficulty, which was due to want of funds. I am very sorry to find that my report contained irritating matter. At the time I wrote it I wrote it in perfect good faith, but on reading it over after the lapse of a year I find that, unfortunately, it does contain, to a certain extent, matter that may have been irritating—that was unnecessarily irritating. But every statement in that paper I am perfectly prepared to substantiate now.

25. Do you remember this resolution being passed at the conclusion of the meeting at which that paper was read: "That the paper just read be received, and referred to the honorary medical staff to furnish the Board with a report at their earliest convenience"?—Yes, I do distinctly.

26. That paper which you read was received, and referred to the staff, who were requested to furnish the Board with a report at their earliest convenience?—Yes.

27. Thereupon, I think I am correct in saying, there was a meeting of the medical staff?—Yes.

28. First of all, was that resolution referred to the medical staff?—It was.

29. And was the paper which you read also referred to the medical staff?—Yes; I think that you will also find that it was referred to the medical staff.

30. Will you please find the report of the meeting of the staff at which your paper was considered?—You will find it in one of my books. The next thing was a discussion upon the hygienic defects of the Hospital.

31. That is the discussion I want to see?—You will find it at page 30. [Private scrap-book.]

32. This newspaper report I have in my hand is the report of a meeting of the medical staff at which your paper was considered?—Yes. If you look you will also find it in the minute-book of the medical staff.

33. I find at page 31 [private scrap-book] this resolution: "That, in the opinion of the staff, there are certain sanitary defects in the Hospital which ought to be remedied." Was that motion carried unanimously?—Yes.

34. Do you remember that resolution being carried?—I do.

35. Do you remember this further resolution being carried, at page 31 [private scrap-book]: "That it be a recommendation from the staff that arrangements be made to have separate wards for ophthalmia cases, gynecological cases, and children's cases"?—Yes. That was also carried. The first resolution was carried unanimously, but this resolution was merely carried.

36. Then, there was some objection to it?—Yes; one gentleman.

37. Do you remember a meeting of the medical staff being held on the 2nd April, 1889?—Yes.

38. At page 166 of the medical staff's minute-book you will find this resolution, which was proposed by Dr. Colquhoun: "That the honorary medical staff, having heard the evidence Dr. Batchelor has to offer in support of his statements as to the defective hygienic condition of the Hospital, believe that this evidence justifies his statement, and respectfully ask the Trustees to consider it." Was that so?—Yes. I consider that a very important motion.

39. Do you remember it being carried?—I do.

40. I also find here: "It was also, on the recommendation of Dr. Maunsell, thought advisable that Dr. Batchelor should furnish privately copies of his evidence to the individual Trustees;" and that "the secretary was requested to forward copy of the above motion to the Trustees." Did you carry out the wishes of the staff and supply the Trustees with a copy of that evidence?—Yes. I went with it to the printing office, had a number of copies struck off, and saw the type distributed, so that it should not get into circulation. I went to a meeting of the Trustees held that night, and left a copy of the printed circular for each Trustee.

41. Is this the document?—Yes.

42. *Mr. Chapman.*] Was that read to the medical staff originally?—It had been read to the staff, and been carefully considered by them.

43. The same thing was then printed?—The same thing was printed afterwards.

44. *The Chairman.*] And you gave a printed copy to the Trustees individually?—Yes. [Dr. Batchelor's statement here handed in [Ex. iii.]. I should like to make an explanation here. This

statement is in the form in which I read it before the medical staff. Of course, it would be absurd to say that I had never seen a case of septicæmia, because we all do so occasionally. What I mean to say is that, after a comparatively simple operation, I have never seen anything in my practice approaching what I saw in the Hospital. I think it right to make this explanation, else it is likely to be misunderstood. The same remark applies to cases of ovariotomy. I never had a death from that cause in private practice.

45. I will not trouble you about that just now. I ask you after you referred to these facts in your memorandum to the Trustees, have you ever been asked by them to give any explanation or further evidence on the subject?—I have not. It is quite impossible that they could have received any information, because the only available information was to be obtained from my note-book, which has never been out of my possession, and was never asked for by them.

46. I think there is a little misunderstanding here. I should like to know whether the receipt of your memorandum was acknowledged by the Trustees, and whether they took any action on it?—They never asked for any further information on the subject. I will not say that the Trustees did not take any steps in consequence of it.

47. *Mr. Solomon.*] I will put it in this way: They never came to you for further information on the subject, did they?—No; not at all.

48. They could not have got any further information on the subject from any other source could they?—I think myself they were misled by information which they did receive.

49. You have not answered my question. Could they have got any reliable information from any other source?—They could not have obtained any reliable information from any other source.

50. Next in the order of date is the report of the medical staff: do you remember that?—Yes, I remember that perfectly well.

51. Did you agree with those resolutions?—Yes. I thought myself that they were not strong enough, but we wanted unanimity.

52. That report was unanimous, was it not?—Yes, it was.

53. *The Chairman.*] The whole of the staff being present?—Yes. On matters of detail there were some differences, but on the main contentions we were unanimous.

54. *Mr. Solomon.*] The next thing I want to see is a letter sent by you to Mr. Miller or to the Trustees about Mrs. T——?

55. *The Chairman.*] Was that letter addressed to the Trustees?—It was addressed to Mr. Miller, as Chairman of the Trustees.

56. *Mr. Solomon.*] But subsequently you had a conversation on the subject with Mr. Miller, had you not?—I had.

57. And on the 27th May you wrote him this further letter, did you not?—I did. [Ex. ix.]

58. Was it at Mr. Miller's request that you sent that letter?—No. It was not. I at first thought of calling for an inquest in that case; but on second thought I considered it better to avoid scandal, if it could possibly be done.

59. Let us go back to the report of the medical staff on the sanitary condition of the Hospital, and which pointed out certain matters that required amendment. By the way, can you give us the exact date of that report?—The 29th May, 1889.

60. *The Chairman.*] Was this before the letter which has just been read?—Yes, just a year.

61. *Mr. Solomon.*] You say that the report which the medical staff made was addressed to the Trustees?—Yes. They sent it to the Trustees; at least, they left the matter in charge of Dr. Roberts, and I presume that he sent it to the Trustees.

62. Certain defects in the ventilation were referred to in that report, were they not?—Yes.

63. Have any steps been taken by the Hospital Trustees since the date of that report to remedy the defects pointed out in that report?—What do you mean by any steps?

64. Well, I will put it in this way: Since May, 1889, which was the date on which the Report [Ex. iii.] was laid before the Trustees, have any sufficient steps been taken by the Hospital Trustees to remedy the defects pointed out in that report?—No, certainly not. There have been some steps taken—as, for instance, a reduction in the number of beds from seventeen to fifteen, and some ventilators were put into the waterclosets. That is all, so far as I am aware at all events, that has been done.

65. But you say that they have taken no sufficient steps since then to remedy these defects?—They have not.

66. Now, as to the cases of Mrs. S——, Mrs. T——, and Mrs. P——. You can turn to your notes to refresh your memory if you wish to do so?—Before I go into these cases I should like to make a statement. I believe that the Trustees were contemplating changes, but to what extent those changes were to be I, of course, had no idea. I do not think that the Trustees even knew themselves. I was aware of the effect that my letter about these three women's cases would have, but I could not have honestly withdrawn. But for these cases I should have allowed them to see what they would do. They were anxious themselves to do something, I knew.

67. At any rate, in the month of July in this year these three cases were brought by you under their notice?—Yes.

68. And then you say you could not honestly delay any longer?—Yes; but I had other reasons as well. [Letter read by Mr. Solomon and handed in: Ex. ii.]

69. I should like to hear those reasons?—I felt that while the Trustees might be willing themselves to do their best to improve the Hospital, I felt sure that as soon as they began to make improvements a certain class in the community would cry out that the doctors themselves were causing unnecessary alarm and had the Trustees under their thumbs; then the Trustees would at once withdraw, and very little would be done. I thought that perhaps another twelve months would elapse and that very little would be accomplished. I determined when this poor woman

died—in fact, it was at her death-bed that I made up my mind—that her case should be made public, and that nothing on earth should prevent me from making it public.

70. And thereupon you wrote that letter to the Trustees which I have just read?—Yes.

71. Did you see Mr. Miller and speak to him with reference to the publication of that letter?—I did. I called on him and showed him the letter, explained to him the facts which I was determined to have made public, and said if there were any modifications in that letter which he wished to be made, if they were consistent with truth, I should be perfectly willing to make them. Mr. Miller replied that he had no objection to the letter. Then I asked him if he had any objection to it being sent in on my own account, or if the Trustees would rather have it sent in through the medical staff. He thought that I should send it in myself, and thereupon I took on myself to send it in. I may add with regard to this letter that I saw the chairman of the medical staff (Dr. Coughtrey), mentioned the case to him, and told him what I contemplated doing. I asked him if I should send it in myself or if it would be better that I should send it through the staff. He said, in reply, that so long as I was prepared to bear the brunt of it he knew of no reason why I should not send it in myself. I therefore determined to send it in myself.

72. And thereupon you did send it in to the Trustees?—I did.

73. And no doubt the present inquiry is the result?—No doubt.

THURSDAY, 21ST AUGUST, 1890.

Dr. BATCHELOR'S examination continued.

74. *Mr. Solomon.*] When we left off yesterday I was asking you a question about your letter of complaint which you made to Mr. Miller?—Which letter do you speak of?

75. I mean your letter of the 22nd July. By-the-by, was there a *post-mortem* examination held in the case of Mrs. S——?—Perhaps I had better explain the circumstances.

76. We will get at them presently; but just answer my questions now. Was there a *post-mortem* held?—There was.

77. At whose request was it held?—At mine.

The Chairman: Is it the letter marked No. 2 that you are referring to now?

Mr. Solomon: No; the last letter.

Mr. Chapman: The letter which we call the complaint.

78. *Mr. Solomon.*] Do you say that the *post-mortem* was held at your request?—Yes; I made the request, at any rate.

79. Did you ask for an inquiry into the circumstances of the woman's death first, or did you ask for a *post-mortem* examination first?—I purposely wrote the letter to Mr. Miller first, asking for an inquiry. It was in the afternoon that I sent in my complaint, and on the same evening, at a meeting of the Trustees, I told them that I thought a *post-mortem* should be made officially, and should be made at once.

80. But the point I want to know is whether or not it was before the *post-mortem* that you asked for an inquiry?—I had asked for an inquiry before that.

81. I now come to your complaints against this Hospital. In the first place, you heard the statement of your counsel in opening his case of what you complain?—I should like to have a copy of it.

82. You make two complaints—first, "that there are defects in the sanitary condition of the Dunedin Hospital;" and that "these defects are of so serious a nature as to be a source of grave danger to the inmates, and call for immediate remedy." Do you make these complaints against the Hospital?—I certainly do.

83. Will you tell us, first of all—it may save time—whether you agree with the statement of your counsel as to what these defects are—viz., "faulty construction, improper ventilation, overcrowding, improper position of closets, bath-rooms, &c., want of kitchens and ward-rooms, absence of special wards for special cases." Do you agree with that?—I do.

84. We will take each of these points separately. If you have made any notes you are at liberty to use them for the purpose of refreshing your memory. Will you tell us the respects in which you complain that the construction of the Hospital is defective?—In the first place, it was never built for a hospital, and in a great many respects it is not fit for a hospital. The wards—I am taking them in their order of importance as far as I can—are far too small for economical working, and I think that that is most important. And I should say here that you cannot, with any degree of safety, put more than twelve patients in a ward. According to the authorities twelve is expensive, because you have to employ the same, or nearly the same, number of nurses with twelve patients as with twenty-four. Perhaps that may be a little beyond the mark; but you would almost want the same number.

85. *The Chairman.*] How many beds do the wards contain now?—At present there are fifteen beds in a ward.

86. I understand you to mean that a proportion of twelve is wanted, and that the number you have is fifteen?—We have fifteen at present. I do not think that you should put more than twelve beds in these wards with safety.

87. Then you consider that fifteen is crowded, and that twelve would not be crowded, but would not fully occupy the nurses?—Twelve would not be crowded.

88. *Mr. Solomon.*] In the present condition of the Hospital, how many patients can safely be put in the wards—that is, assuming, of course, that it is safe to put anybody there?—I do not think that there should even be more than ten beds; but it is rather difficult to answer a question like that, because it altogether depends on the sanitary state of the hospital.

89. Do I understand you to say that if the Hospital were in a satisfactory hygienic condition you would have nothing to complain of?—It must also have good ventilation. Even then twelve beds should be the outside number, in my opinion.

90. *The Chairman.*] Even if the wards were improved very much?—Yes.

91. *Mr. Solomon.*] Let us understand what complaint you really do make under this particular subsection?—I must modify that to this extent: it would only hold twelve, if the wall is so altered that the present position of the door and fireplace is done away with. Each of these takes up 9ft., and consequently diminishes the bed-space on that side of the ward.

92. *The Chairman.*] If the wards were improved, what number of beds do you recommend that they should hold?—Twelve.

93. And how many do they hold at present?—Fifteen.

94. *Mr. Solomon.*] I understand you to say, in connection with this particular complaint which you make, that the wards are too small. Do you allow for additional expense for nurses?—Undoubtedly.

95. Then the net result of your complaint is that the wards should be larger?—Undoubtedly, in order to provide for their economical working.

96. In order to assist the Commissioners, you might give us your opinion as to what should be done, supposing that alterations are to be made?—But I was going to point out other defects.

97. I am coming to that directly. Assuming that a new Hospital is going to be built, how many patients, in your opinion, should a ward be made to hold?—I think that twenty is a good number. You might sometimes have more, but I think that twenty would be a safe and good number.

98. Under those circumstances, the wards would be nearly double the size that they are at present?—They would be so.

99. Will you please now tell us about the lighting?—I think that you should take construction before you came to that. I think that ventilation by means of a central hall is a bad system, and I do not think you can get proper ventilation by it. There is a large central hall, and I think that that is a bad principle, because you cannot get sufficient sun-ventilation, which is essential in a good hospital; neither do you get sufficient isolation of the wards, which is also essential to a good hospital.

100. Do you know the modern system of wards?—I do.

101. It is called the pavilion system, is it not?—Yes, and most authorities say that it is the best.

102. Will you explain what it is?—It insures a supply of good air, through cross-ventilation, is lighted on both sides, and gives isolation. This is what Wilson says: "In this description of hospital, each pavilion may be regarded as a separate hospital, and the impurities of every single ward are cut off from the other wards. The pavilions are united by a corridor for administrative purposes and for convenience, but are so arranged that free circulation of air can always take place between them. In its simplest form a pavilion would consist of a single ward, with necessary additions for administration."

103. If there is a central hall into which all the wards open, it does not, you say, afford sufficient isolation?—I should say that it does not. I think it is a bad plan, but I dare say you will find differences of opinion on the subject. However, that is my opinion.

104. Now, as to the ceilings and floors of the Hospital, are they satisfactory?—Very unsatisfactory; the floor especially so, I should say.

105. Give us the particular points on which they are unsatisfactory?—I wish to point out, first of all, that they are not what they ought to be in a hospital. I should recommend that the floors and corridors should be waxed and polished, and made non-absorbent. This is very important.

106. And as to the ceilings?—In modern hospitals you have as few sharp angles as possible, the object being to avoid crevices for the lodgment of dust and dirt.

107. You say that in all modern hospitals the ceilings have as few angles as possible?—Yes.

108. The object being the same as in the case of the floors?—Yes.

109. I suppose that the object of such things is that micro-organisms shall not be harboured?—Undoubtedly.

110. Which are to be avoided?—Yes.

111. Does it occur in our Hospital?—It does.

112. Do you consider Seacliff well attended to in this respect?—It is very nice indeed. I was very much struck with it.

113. *The Chairman.*] Would you not expect any septic disease to occur there?

114. *Mr. Chapman.*] Is this question of the condition of the floor and the ceilings of the same importance, or of more importance, than the hygienic condition of the Hospital?—It is decidedly important.

115. Do standard authorities on the subject recognise it?—Yes.

116. Now, what do you say as to the lighting of our Hospital?—That it is insufficient. I believe that modern authorities say that there should be two parts of wall-space to one part of window.

117. Can you refer us to an authority for that?—I think I can. I think it is in Holmes's work.

118. You say that that is the opinion of the authorities: do you agree with it?—Of course I do.

119. And they assert that there should be two parts of wall to?—To one part of window. I am pretty certain that that is the proportion. That is not obtainable in our Hospital. All along one side of it is a dead-wall; one end is dead-wall, and the other end partially closed by a screen, so that only on one side is there any good light.

120. *The Chairman.*] Do you know what the proportion is?—I have not calculated it out, but I should say that for half the side that is lighted there is one-half of window to one of wall.

121. Then that would be a quarter of what is recommended by the authorities?—I think I should be correct in saying that.

122. *Mr. Chapman.*] What effect would that have on the appearance of the walls or otherwise?—It makes the wards dull. Light is an important matter from a hygienic point of view. The health of a person who is kept in the dark will deteriorate.

123. And as to the sun?—It is important to get as much sunshine as possible.

124. There are parts of the Dunedin Hospital in which the wards can only get the sun at particular parts of the day, are there not?—Yes.

125. For instance, the walls of the wards on the front side of the Hospital do not catch the sun until pretty late in the afternoon?—Quite so; that is a decided disadvantage. You want to get as much sunlight as possible.

126. Now, what do you say as to the position of the Hospital?—Do you mean the site?

127. Yes?—Of course that is a very difficult question. I really have not thought the matter sufficiently out, but I am inclined to think that for a good many reasons it is a very good site. I certainly would not give a positive opinion on the point, but would rather defer doing so until I have thought it out.

128. Taking the whole thing into consideration—the defects which you have pointed out, and which are of course in the meantime natural defects of construction—are you of opinion that those defects are of such a nature as can be avoided in the present building?—No, I do not think so; I think that they were quite unavoidable.

129. You think so in the present building?—It could undoubtedly be improved.

130. You do not quite follow me. In your opinion, can the present Hospital be so altered as to obviate all the defects that you have pointed out?—No.

131. If the whole of these defects—construction and otherwise—remain as at present, do you think that as they exist the Hospital is a fairly satisfactory asylum for sick patients?—Do you mean as it is?

132. Yes?—No; faulty construction is alone a very important point.

133. Do you mean to say then that the faults of construction to which you have directed attention are of themselves evils sufficient to make the Hospital an unsatisfactory asylum for sick patients?—Yes.

134. Have you any other remarks to make on the subject of faulty construction?—No; that is all.

135. We will now go to the second subdivision (*b*) of your complaint—imperfect ventilation. Will you tell us what you have to say on that point?—First of all, I say that a thorough system of ventilation is essential—indeed, is one of the most elementary essentials—to a good hospital.

136. Is the system of ventilation in the Dunedin Hospital a thorough system?—No.

137. Is it fairly satisfactory?—No; it is bad.

138. What is the most improved plan of ventilation for a hospital?—I believe what is known as cross-ventilation is the best, but I do not pretend to be an authority on ventilation.

139. You speak, I presume, from your reading of authorities on the subject, and not from your own experience?—Exactly.

140. Is there any such system of ventilation as cross-ventilation in the Dunedin Hospital?—There is certainly no system of cross-ventilation there. I really would not say much on this subject. The system of ventilation they have in our Hospital, by the windows, chimneys, and doors, is an accidental system, and is absolutely bad, and I defy anybody to give a good account of it. They seem to me to knock in a hole here or there, wherever they want a fresh ventilator.

141. The principal methods of giving ventilation in the wards is by the windows, and up the chimneys, are they not?—I think that the chimney is the most efficient means.

142. In the wards at present, do you mean?—And in the past.

143. Am I right in saying that the object of a proper system of ventilation in a ward is to secure a constant and steady current of air throughout the ward?—Yes.

144. And what is the object of good ventilation?—To avoid any draughts, and insure a sufficient supply of fresh air.

145. Does the system of ventilation adopted in the Dunedin Hospital insure that result?—Certainly not.

146. Do they have any draughts there?—There are constant draughts. The patients are complaining constantly about the draughts, and it is impossible to ventilate the wards properly without occasioning draughts.

147. You say that the patients here are constantly complaining.—Yes.

148. You say that they are constantly complaining of draughts, and that it is the present system of ventilating the wards in the Dunedin Hospital that creates those draughts?—Yes.

149. And you say further that there are constant draughts in the Hospital.—Yes.

150. I need hardly ask you whether this is a source of danger to the patients?—It is.

151. Do you know yourself of any instances in which patients in the hospital have suffered from the presence of these draughts?—Yes. In this very No. 7 ward that we have been speaking about, during the last two months every patient on the right-hand side of the door as you enter has suffered.

152. In how many beds?—The beds on the right-hand side here [indicating on plan]. Whenever I have gone into the ward I have found patients with their heads tied up, or complaining of toothache.

153. Do you think that they contracted these ailments in the Hospital in consequence of the faulty condition of the Hospital?—That is what they told me. They told me that their ailments

were due to the draughts. I do not know anything about the draughts myself, and cannot say anything about them. I would like to explain here what I meant when I said that the ventilation was exceedingly bad. When one window is open you get a draught one way, and another window being opened will alter it entirely. It depends on conditions that may change any minute.

154. You have told us your personal experience of having seen these patients. Have you noticed draughts in the neighbourhood of these beds?—Yes. I felt a most terrific draught when standing alongside of one of these beds on one occasion.

155. Do you think the draught was enough to make it unsafe for patients to remain in these beds?—Undoubtedly. What might produce a stiff neck or sore throat in one patient might cause a pleurisy in another, which might prove fatal.

156. So that, speaking generally, I can safely say, I presume, from your inquiries that you consider that these draughts in these and other wards are a source of active danger?—They are a source of active danger.

157. Does the name Dr. Colquhoun mentions suggest to your recollection anything in connection with one of these draughts?—Yes. I have seen on more than one occasion when examining a patient's chest his hair affected by the draughts that were blowing about.

158. That was in winter, I suppose?—Yes.

159. The patient that you were then examining had the chest uncovered?—Yes.

160. Do you think that was a safe condition of things, in the circumstances?—I do not think it was. In connection with this matter, I may mention that when we go our rounds in the morning we find that the wards get very stuffy through the windows having been kept closed at night. If the windows are opened it is soon cleared off, but at this time of year the wards are specially stuffy.

161. Is it desirable or safe that in wards in which all sorts of cases are collected there should be stagnant air?—No.

162. The danger there is?—In surgical wards such a condition of the atmosphere is very dangerous.

163. The danger arises from the collection of germs, does it not?—Yes.

164. Can it be avoided in the wards of this Hospital as they are at present constituted?—No. As you enter the ward, on the right-hand side, the ventilation is effected from the windows at the end. As you enter from the left there are no windows, and the air there may be specially stagnant. This possibly may be rather theoretical.

165. Have you visited these wards yourself, in the early morning for instance?—I have.

166. First of all, supposing these wards were properly ventilated, or were ventilated by a fairly satisfactory system, should the Hospital at any time have any bad smells?—There ought not to be any very bad smells in such a hospital. You may sometimes get a little of what is known as the "hospital smell," but never anything approaching what you can find in the Dunedin Hospital.

167. Now tell us your personal experience in regard to the smells you have experienced in the wards of a morning?—The worst instance I can recollect—any particular instance—that I shall refer to is a very striking one, in one of the downstairs wards, No. 2. I had occasion to visit a patient very early, before 6 o'clock in the morning, and before the windows were opened. The smell was excessively offensive, and I absolutely retched after leaving the ward. I can give details of this case; I can remember it distinctly. It was a man named Stoneham, who died subsequently of cancer.

168. Is that an undue experience or very extraordinary experience in our Hospital?—No; I think it very common, and on any winter morning you can find the condition that I have described.

169. Would such a condition as that be a safe condition for patients to live in?—It would be an exceedingly dangerous condition.

170. Could it be avoided by a proper system of ventilation?—Do you mean in these wards?

171. I mean by proper ventilation in the Hospital generally?—I will reply that in a properly ventilated hospital such a thing could not exist.

172. In this connection, I would ask you is there not a medical school attached to the Hospital?—There is.

173. This school is in connection with the University, is it not?—Yes.

174. In your opinion, is it more or less necessary that there should be a perfect system of ventilation in the Hospital under these circumstances?—It is more necessary and important. I believe from what I have read that in hospitals where there are medical schools extra precautions should be taken, as the risk is greater.

175. That is to say that extra hygienic conditions should exist?—I notice that some of the authorities say that, if a medical school exists, more extra space should be given; that is, cubic and floor-space.

176. *The Chairman.*] Nothing beyond extra space? What about the air in the wards being pure?—Yes; certainly, it ought to be. I had better make a statement here. In consequence of the extra dangers, which arise from many sources, from the existence of a medical school, I think, considering a medical school to be of the utmost importance, that the hospital it is connected with should be as nearly a perfect hospital as possible.

177. Why?—Because I consider that if it is not a perfect hospital one of two dangers must ensue. The medical man or doctor who is teaching the medical school is obliged to keep himself thoroughly up to date, and his practice has to be thoroughly up to date. Now, if the Hospital is defective, one of these dangers necessarily follows: Either he performs operations or instructs in methods of treatment of patients in which they run an extra risk, which is of course unjustifiable, or, on the other hand, it happens that his students are imperfectly educated; because the medical

man feels that he cannot give them a proper education, owing to him being frightened to carry out the methods of treatment up to date. I should like to say, further——

178. Stop a moment, please. Am I correct in saying that one of two things happens—either the doctor, who has brought his practice abreast of the times, feels that to attempt operations or methods of treatment in the unsatisfactory condition of the hospital would be extremely dangerous and therefore unjustifiable, or else the medical student will remain uneducated in these modern methods?—Yes, and he turns out to practise on the public of New Zealand men who are imperfectly educated. I should like to express my views on this subject very strongly. I say that if the Dunedin public are not prepared to support such a hospital—a perfect hospital—I think it is a very selfish policy on their part to keep the Medical School here, because there are others of the large towns in New Zealand that are quite prepared to spend the money, and would be very glad to have a medical school, but the fact of Dunedin already possessing such a school keeps those other towns from undertaking such a school. With a proper hospital, a medical school would be conducted very much better.

179. In the Dunedin Hospital, is it safe, in your opinion, to adopt all the modern methods of treatment?—I will answer for myself and let others do so for themselves. I may say that there are a number of operations that I am absolutely unable to adopt the modes of treatment necessary to carry them out; and my experience in the past will prevent me from carrying out methods of treatment that I have been in the habit of using. There are a number of operations, modes of treatment which would be very beneficial to the patient, which I am afraid to undertake. If I am to go into details——

180. Let us take one illustration. Do you know a method of treatment by electrolysis?—Yes I do, and wish particularly to refer to it.

181. First of all, tell us what it is?—It is a very important advance in gynecology in the treatment of certain forms of uterine complaints.

182. Has the treatment by electrolysis been successful?—Yes, in private practice I have seen some very remarkable results from it. When I returned from Melbourne I brought with me an apparatus intending to put it up in the Hospital. It is in my dark-room now. But I am sure that I should not be able to use it many times in hospital practice before I met with an accident. It is a very valuable curative measure in certain forms of disease.

183. Can it be safely conducted in such an insanitary hygienic condition as we have in this Hospital?—Certainly not. I think that the treatment has to be carried out with the very greatest care, otherwise very disastrous results will ensue. I should be frightened to adopt it here for that reason. I have the necessary apparatus but will not put it up, because I am certain to do more harm than good with it. I might amplify that a little. It is most useful for the treatment of fibroid tumour of the womb in women of about forty-five years; it will arrest the progress of the disease and get them over a critical period, and thus prevent a serious operation. By this treatment you can always insure arrest of the hemorrhage.

184. You say that the use of this method of curative treatment requires special antiseptic precautions?—Decidedly.

185. Why is that?—There is a slough produced at the point of contact of the internal electrode from which septic infection may occur. Some authorities recommend a puncture into the tumour, but I have never adopted that method myself. I have simply applied the pole to the interior of the uterus.

186. In that case, would it be like passing a uterine sound?—Yes, but in addition you pass through the sound a powerful current of electricity.

187. Does that give you a lacerated condition?—That depends on the pole you apply and the strength of the current. With one pole you get a dry eschar which arrests hemorrhage, with the other pole you get a softening and destruction of the tissues, the same as you get from an alkaline caustic. This is the more powerful in reducing the tumour.

188. The question I wish to ask you is why this particular process requires more special antiseptic precautions than others?—By the introduction of the sound and application of the current, which is frequently repeated, a softening of the tissues results which is very readily affected by any septic material.

189. There is, in fact, a rupture of surface?—Yes.

190. Why should there be any more danger of septic poisoning in that process than in any other?—In any solution of continuity there is always a certain amount of danger.

191. Is it important in that case to take antiseptic measures to secure absolute purity of instruments?—That would not be sufficient. I should say, as the result of my experience in this Hospital, that you cannot be absolutely certain with this alone, especially where we have unhealthy surroundings. My experience teaches me that. I may return to that by-and-by.

192. This, I understand you to say, is an illustration of one valuable remedy which, in consequence of the insanitary condition of the Hospital, you are unable to give effect to?—Yes. I should like to say something further about this. Each application seems to increase the risk.

193. I understand you to say that this is an especially dangerous and difficult operation because the instruments cannot be properly cleaned?—I beg your pardon; I did not say anything of the kind. It is very difficult to insure keeping the wound in a septic state. It is a multiplicity of causes that induces the danger.

194. That is because the application is one of frequency—not one operation and then done with, but it has to be repeated at intervals?—Yes.

195. *Mr. Solomon.*] I do not wish to lead you, but is there any other modern treatment that occurs to your mind at the present moment that you are unable to adopt?—I have not done an Alexander operation for some time; I am frightened to do so. I can mention other operations that I refrain from doing.

196. It is sufficient for my purpose to say that these are illustrations of several forms of operations that you are unable to do on account of the present insanitary condition of the Hospital?—Yes, and I have no doubt that other surgeons and physicians will be able to produce other instances.

197. Now, under all the circumstances, are the patients under your particular care able, in your opinion, to get the full advantage in the Dunedin Hospital of your knowledge of medicine?—No, they are not.

198. Are the medical students who are attached to the hospital able, in its present condition, to get full instruction on the subject?—No, they are not. I have not been able, as far as I remember, to show any one of them this method of treatment of which I have been speaking.

199. I suppose that in your profession, as in ours, there are times when a doubt arises in your mind as to whether to advise a man to plead guilty or not guilty, so to speak?—Undoubtedly there are a great number of cases that come under that class.

200. And the responsibility rests with you to decide in such cases?—Yes.

201. Have you, in the present condition of the Dunedin Hospital, ever had a fair opportunity of deciding that question in the interests of the patient?—No.

202. Why?—Because the risk of performing a number of these operations is so great that we allow the patients to go on chance rather than risk the performance of an operation which we feel sure would under favourable circumstances be attended by great benefit.

203. I suppose that, though you might be morally convinced that the operation is desirable—there may be some element of doubt in anybody's mind—yet, there being an absence of proper hygienic conditions, you would not under those circumstances feel yourself justified in performing it?—The doubt might just serve to turn the scale the other way in a great number of operations; especially in modern surgery the operations are now more of an expediency nature than they were in the past.

204. In your opinion, is that fair to the patients under your control?—No, it is not.

205. In a climate such as we have in Dunedin is it practicable, in your opinion, to get a properly-ventilated ward where you have to open the windows in order to do so, as you have to do in the wards here?

206. If the windows are closed, can the ventilation of the wards be done anything like effectively?—No, not with present appliances.

207. In such a climate as ours is in winter time, is it practicable to open the windows of the Hospital here in order to give sufficient ventilation?—No; you cannot open your windows properly without producing draughts.

208. You are able, I understand, to quote some authority who says that certain evils are attributable to an east wind?—Erichsen, speaking of erysipelas, says that outbreaks of this disease are due to climatic conditions—for example, to cold east winds—whereas as a matter of fact, when these cold winds are prevalent, people close their windows and doors, the rooms become stuffy, and septic organisms exist in a more concentrated form.

209. Does that apply to our Hospital?—Undoubtedly. I think we have had a very striking illustration recently.

210. Is it surprising, under those circumstances, to find what you have told us, and is it what you would expect to find?—Just what we should expect.

211. Then I may take it, I suppose, that the evils in the Hospital of which you complain you would expect to be intensified in the winter?—Yes.

212. *The Chairman.*] At night the windows would be closed?—Yes; the patients have asked for them to be closed, and the nurses could not help doing so.

213. Has there ever been an examination of the air inside the Hospital?—I do not think so. I never heard of any.

Witness: I should like to make one remark before I leave this subject; I wish to say that, totally irrespective of the medical school, I draw attention to the necessity for extra and proper hygienic precautions. These radical changes in the Hospital are essential I consider; and I wish to point that out because I may be misunderstood.

214. *Mr. Solomon.*] Then what you say is simply intensified by the presence here of a Medical School?—Yes.

215. and you say that in the interests of the patients alone, and apart altogether from the Medical School, that these changes you have urged are necessary?—Entirely so.

Mr. Solomon: On the question of ventilation, I would direct the attention of the Commissioner to page 1110 of Ashurst.

216. *Mr. Solomon.*] By the way, do you accept Ashurst and Erichsen as authorities?—Certainly. I will read to you two passages from Erichsen. [Ex. xiv., p. 13.]

217. We will now take subsection (*b*) of your complaint—that is, as to overcrowding. In the first place, you have prepared a table on the subject, have you not?—Yes, I have prepared a table of No. 7 ward, that in which the septic mischief occurred. It is very much on the same lines as the other wards, which are covered by the report of the medical staff.

218. First of all, tell us what the authorities say is sufficient bed-space?—I should like to know which ward you wish to refer to.

219. Take ward No. 7 first of all. Can you refer me to the page of Wilson in which he speaks of what is necessary bed-space? What does he say is a fair cubic space per patient?—I have a number of different authorities. Ashurst, in his "System of Surgery," vol. vi., in the article on hospital construction, says that the bed-space should be 7ft. 6in. in an ordinary ward.

220. *The Chairman.*] That is the space to each bed?—Yes. Each bed should have 7ft. 6in. clear space in ordinary wards.

221. That is including the space between the next bed to the one on the other side?—Exactly. Ashurst says that at page 1096, and at page 1097 he gives 8ft. to 9ft. for surgical cases. Holmes, in his "System," page 1033, gives 8ft.

222. *Mr. Solomon.*] Is the last floor space?—No, it is the bed-space. As to floor-space—that is, the amount of square feet per bed—Ashurst says that, for ordinary cases, 105ft. to 120ft. is required, and from 130ft. to 140ft. for a surgical bed. Erichsen gives it as a little less for ordinary cases, but he gives extra space for surgical beds. Erichsen says from 100ft. to 120ft.

223. *The Chairman.*] Is that all surgical?—No; 100ft. for ordinary and 120ft. for a surgical bed. Wilson, in his book on hygiene, says that 90ft. should be the minimum, but you must have more if a medical school is attached to the hospital. [Page 263.]

224. But he does not say how much more?—I do not think he does.

Mr. Solomon: He gives some illustrations. I will read this passage to you. [Passage read.]

225. *Mr. Solomon.*] You have examined No. 7 ward, have you not?—Yes. But I do not want to confine myself to that ward specially. I will take one of the ordinary wards. I have a reason for that.

226. Have you examined No. 1 ward?—I did. That is the one on the right-hand side going in.

227. Can you tell us what you found the length of the ward to be. That is the ward on the basement-floor? I will take the bed-space to begin with; we can all agree to that. The bed-space is 5ft. 6in. per bed.

228. Instead of a minimum of what?—This is a surgical ward, and there should be a minimum of from 8ft. to 9ft.

229. And the floor-space was?—1,250ft.

230. But that is the whole of the square space, is it not?—Yes.

231. Give us the floor-space per bed; we will give them the benefit of the whole of the space?—You will have to make a calculation of that for me.

232. *The Chairman.*] How many beds are there in the ward?—Fifteen.

233. *Mr. Solomon.*] It would be 83ft. per bed. How does that compare with the lowest in a surgical ward allowed by the authorities?—I should say 112ft. is the mean.

234. *The Chairman.*] You have told us that it ranges from 105ft. to 140ft.?—Holmes gives the lowest at 90ft., but he says that there should be more if there is a medical school. I think 112ft. is a fair average.

235. Now, as to the cubic space per patient?—It is a very difficult thing to calculate that, inasmuch as it is a question whether you shall calculate the bathrooms and lavatories as well.

236. Give them those in and the waterclosets too?—I am afraid that I cannot do that.

237. You made some calculations did you not?—They were always almost the same. I included the bathrooms and lavatories, but I have not included the waterclosets in any case.

238. What did you make the cubic space per patient?—The cubic space is 14,571ft., including the bathroom and lavatory.

239. And that is how much per patient?—910ft.

240. 910 cubic feet per patient?—No; I am wrong. You have fifteen beds in the ward, but you have a wardsman in the ward also. In the ordinary surgical ward there is the nurse's room outside. I suppose you ought to include the wardsman as well.

241. You say that there are 14,000 cubic feet in the ward?—14,500ft.

242. You must divide that amongst fifteen patients?—What I ought to do is to divide it by sixteen people.

243. But, divide it amongst the fifteen patients?—That gives 910 cubic feet per patient. That is allowing 12ft. effective height, as the authorities say should be allowed.

244. To what height did you take your measurement?—12ft. from the floor.

245. What is the additional height of the wards?—I think the downstairs wards are 16ft. high, and those above 15ft.

246. That is, 4ft. above the windows?—Yes.

247. *Mr. Solomon.*] That, you say, gives an average of 910 cubic feet per patient, while the lowest allowed in a surgical ward by the authorities is 2,000ft., and 1,200ft. in a medical ward. Now, in your opinion, does the calculation which you have shown us show a very safe state of affairs so far as crowding is concerned?—It does not. The hospital is very much overcrowded.

248. Take the surgical wards alone. Under such a condition of affairs do patients in surgical wards in the Dunedin Hospital have a fair chance of recovery?—Taking that condition of affairs alone, they have not.

249. Am I right in saying this: that the chance of infection, as distinguished from contagion—in other words, the chance of contracting disease by touch, the proportion that is carried to us is the precise ratio of the distance, and that it is exactly the same thing in the inverse square of the distance?—It may be, but I wish you would put it in a more simple manner.

250. Well, I can assure you professionally that it is so. Is it not the fact that through the patients being brought close together, through the reduction of the cubic space, the danger of infection is increased?—It is largely increased. I consider it most essential that the cubic space should be greatly increased.

251. *The Chairman.*] Is bed-space the most important of the three elements you have mentioned?—I should think so.

252. Are these fifteen beds always full?—No. I think one bed is kept empty in case of an emergency; then I suppose it is filled up. As a rule there are fourteen beds full.

253. *Mr. Solomon.*] That is the only respect in which the overcrowding of the ward has been altered?—Yes. Lately there has been a tendency to keep the wards specially crowded, with the object of having two of the wards empty. We wanted one of these wards for special cases, and

one for a fallow ward. The result has been that the other wards have been kept very full of late, and that has aggravated the overcrowding.

254. Take No. 7 ward, while we are on this point. During that last fatal week under the old *régime* of the Hospital, how many beds were there in that ward?—There were sixteen.

255. *The Chairman.*] At what date was that?—22nd July.

256. *Mr. Solomon.*] I suppose the size of the wards is practically the same?—I think all the wards are nearly the same size.

257. How many of the beds were occupied?—I asked the nurse afterwards—I did not know at the time—and she told me that fifteen beds were occupied at the time it occurred; but whether that is correct or not I do not know, because I did not take any particular notice of the beds.

258. *Mr. Chapman.*] What was the name of that nurse?—Waymouth. I noticed myself on that particular occasion that the ward was full, but I would not be prepared to say whether fourteen or fifteen beds were occupied.

259. *The Chairman.*] You state that you are keeping the wards more crowded than usual just now, so as to have two wards for special cases. By that do I understand that these two wards are at the disposal of the medical staff to make alterations in the disposition of the patients?—We have nothing to do with that, so far as I know.

260. *Mr. Solomon.*] We will next take the drainage, the position of the waterclosets and bathrooms. The waterclosets are at the end of the wards, are they not?—Yes.

261. And open directly into the wards?—Yes.

262. There is a double-door arrangement, is there not?—Yes.

263. That is to say, you go through the ward, open a door, and there's the place?—You go through the lavatory first.

264. *The Chairman.*] The doors open in opposite ways—do they not?—the one into the ward, the other into the watercloset?—I think that that is the arrangement.

265. *Mr. Solomon.*] Is it a proper system of watercloset that the doors should open directly into the wards in that way?—Certainly not, in my opinion.

266. Can you find any modern authority on the subject who sanctions it?—I have looked up all the authorities, but nobody sanctions it; certainly all the authorities I have seen condemn it. The closets should be separated from the wards by a lobby with cross-ventilation.

267. By that you mean that the waterclosets should open into a corridor?—Yes.

268. Where do the drains from these closets go—inside or outside the building?—Inside.

269. Where should they go?—Outside.

270. In your opinion, is a system of double doors a safe way to ventilate a watercloset?—I should rather doubt if it does any good at all.

271. *The Chairman.*] How are the waterclosets ventilated just now?—There is a window on one side, and a ventilator near the top.

272. *Mr. Solomon.*] When you visited the ward on one occasion did you find the two sets of doors closed?—In the two surgical wards I found both the outside doors open.

273. Had they been fastened back?—Yes.

274. On this particular occasion there was only one door?—Only one really.

275. And how was the watercloset for odour?—It was not pleasant; very unpleasant, I should say.

276. In the other two wards I understand that you found both the doors closed?—Yes.

277. Did you notice an ingenious contrivance to fasten the door?—Yes; there was a little peg to keep it back.

278. *The Chairman.*] What was the object of keeping this door back?—For the convenience of cripples: it let them pass in and out without difficulty.

279. *Mr. Solomon.*] Is there a medical objection to these closet-drains being taken inside the building?—Yes; there is a very strong medical objection to it. There is always a danger of the drains going wrong, and there would be some difficulty in trapping them. In consequence of that there is a danger of sewer-gas escaping into the ward. I should think that that is a very great danger.

280. That is not healthy, is it?—Decidedly unhealthy.

281. Is that the reason why the authorities are universally agreed that watercloset drainage should be carried outside?—That is one reason, and I suppose it is the special reason of the foul air escaping into the ward. No one would like a watercloset opening off his bedroom.

282. *The Chairman.*] Do you know where the slops are taken to?—I do not. I have never seen anybody taking the slops out; therefore I presume that they are emptied down the watercloset. I cannot answer as to that, as I never inquired about it.

283. *Mr. Solomon.*] And the bathrooms are merely portions of the ward walled off?

284. *The Chairman.*] Screened off, are they not?—Yes.

285. *Mr. Solomon.*] How high are the screens?—7ft., I think, but I am not quite sure.

286. It is a fixed wooden screen, is it not?—Yes.

287. Being screened off in that way, it follows that there is nothing to prevent the steam spreading from above the bathroom screen into the ward?—No.

288. They have hot baths?—Yes, but I do not know how often.

289. Is that a proper state of things?—No.

290. That would induce a humid condition of the atmosphere, would it not?—Yes.

291. As to the objection to that, does it lessen or increase or affect the quantity of pure air which the patients get to breathe?—It certainly decreases the quantity of pure air.

292. I suppose that is especially objectionable, coupled with the general want of ventilation?—Yes, it is.

293. *The Chairman.*] You have not told us how the bathrooms should be arranged?—They

should be arranged on the same plan as the waterclosets—they should be separated from the ward by a passage, and have cross-ventilation.

294. *Mr. Solomon.*] And the lavatories?—In the same way. There are the same bad effects from steam and hot water. These lavatories also open to the drains, and there is danger of sewer-gas arising from them—at least, I should think so.

295. What is the proportion of waterclosets to a ward?—I have not inquired into that, but Wilson gives one watercloset to every ten beds, besides advising urinals. There are no urinals in our Hospital, which accounts for the uriniferous smell which I found in the watercloset.

296. The next subject is kitchens. Are there any kitchens connected with the wards in this Hospital?—No.

297. *The Chairman.*] Is that proper?—No. In all well-constructed hospitals there should be some arrangement for warming food.

298. What have you to do in this Hospital?—The nurse lives in the ward. She goes into a little room outside, and has the food warmed there.

299. And that, you say, is not proper?—It is not proper.

300. The last objection you take is to the absence of special wards for special cases?—Yes.

301. In the first place, we will subdivide that into (1) special wards for special kinds of cases, and (2) special wards for special cases. First, let me ask you, in the case of a gynecological surgical case, is there not any additional risk of septic poisoning to what there is in an ordinary surgical case?—Undoubtedly there is a very great extra risk.

302. By that you mean through the absence of classification of diseases, and having no wards for each?—Yes.

303. *Mr. Solomon.*] Tell us what the additional risk is?—First of all, you have to deal with a canal which opens directly into the general peritoneal cavity. That is one form of risk, and if mischief does arise it is sure to be very serious. Then, it is perfectly well recognised that we have to deal with highly vascular tissues. The vagina and the lower part of the passage are highly vascular, and the veins form plexuses. Then, you have the condition of the lining of the uterus itself. We are there dealing with a highly absorbent surface, which is described recently as a lymphoidal or glandular surface. Then, there is a risk in connection with mere vaginal examinations. Practically, I knew that a risk existed, though I did not know the scientific explanation. Our pathologist, Dr. Roberts, says that it is a very important risk, and as far as I know it has not previously been specially drawn attention to. During vaginal examination by speculum or otherwise air enters the passage. If this air is loaded with pathogenic germs a certain portion are left behind, which are then under very favourable conditions for development. In the vagina—a moist, warm passage—you have the conditions recognised as most favourable for germ-cultivation. This explanation of the danger has, so far as I know, never been made before. I think, practically it is recognised, but scientifically this explanation has never been offered. It is a point that may have an important bearing in this inquiry.

304. Is Dr. Roberts pathologist to the University?—Yes.

305. Suppose that germs gain access to the vagina in the way you have stated, is there anything to prevent them, in the ordinary course, from spreading to the uterus, thence to the fallopian tubes, and to the peritoneal cavity?—No, they would not thus spread in the ordinary course of events. It is a very fine point indeed. Some authorities do say that you may get a lodgment of germs in the folds of the mucous membrane; that these germs multiply, and during this process destroy the surface protective layer, and finally actually find an entrance into the system. In this way mischief may arise without a mechanical breach of surface. In that way absorption may occur; but what is probably far more common is that during an examination some slight injury of the protecting layer occurs, and affords a surface for the entry of germs. Such injuries are apt to occur from the introduction of the speculum or sound.

306. *The Chairman.*] It is not necessary for the absorption of germs that they should pass up the uterus?—No. Local injury may afford a focus of absorption.

307. *Mr. Solomon.*] May I take it that there are two particular dangers to be apprehended in regard to gynecological cases—that, in the first place, the parts are particularly apt to encourage these germs or organisms?—Yes.

308. And that, if they are encouraged, there is special danger arising to the patient?—That is anticipated, as I have explained.

309. Do you think it safe to have these cases in ordinary surgical wards? But I would first ask you is it not a usual thing to find suppurating wounds in these wards?—I believe there are always some—always one or more suppurating wounds there.

310. Is there anything given off from these wounds?—Yes. It is from suppurating wounds especially that these microbe organisms, which, spreading, cause septic trouble, are given off.

311. And they produce septicæmia and pyæmia, do they not?—They may produce septicæmia and pyæmia.

312. Do you think, under these circumstances, that it is safe that female patients, who are under the care of a gynecologist, should be treated in a general surgical ward?—Certainly not; especially if you do not know the nature of the cases in the ward.

313. On this point also I want to know, is the gynecological portion of the Dunedin Hospital under your care?—It is.

314. Your patients are in a general surgical ward, are they not?—They are in an ordinary surgical ward.

315. *The Chairman.*] Do you know if they have special wards in other hospitals?—I do not know what the arrangements of other hospitals in the colony are, but I know that at Home it is now the case. Most hospitals there have special wards for these cases. In some of the large cities at Home there are special hospitals for these cases. In Melbourne they have a

very fine hospital. It is in consequence of these dangers being recognised that these special hospitals exist.

316. *Mr. Solomon.*] Is there any method by which you are able to ascertain in the Dunedin Hospital, except by continual inspection of each case, what other cases there are, and the character of those other cases, that are under the care of other surgeons, in these general surgical wards?—No.

317. When a patient has to undergo a gynecological operation she would naturally remain in the Hospital some few days preparing for that operation, would she not?—I invariably keep them in the Hospital for some days.

318. You say that there is a preparatory kind of treatment for some days. Is it a portion of that treatment that the patient should undergo vaginal examination?—Yes, with more or less frequency. You have to determine, as far as you possibly can, the exact state of affairs, and to do that you have sometimes to make repeated examinations.

319. In the first place, I would ask you whether it is desirable, during their stay in the Hospital preparatory to the performance of an operation of expediency even, that patients should be in the best possible hygienic condition?—Yes.

320. Is it essential that they should be similarly placed in regard to hygienic conditions?—Certainly; if you wish to get success, all details of that kind must be attended to.

321. Gynecological operations are those in which attention to details is especially necessary, are they not?—Yes; that is well recognised.

322. Is it consistent with the condition of affairs that you should require that for a few days previous to operation the patient should be put in a ward in which there are septic cases?—No.

323. Is it consistent with probable success that a patient should remain for a few days in a ward with one or more septic cases in it?—No; it would have a very unfavourable effect. I should say that it would have a decidedly unfavourable effect on the prospects of success.

324. In the present state of affairs in the Hospital that might be the case—might it not?—without your knowing anything at all about it?—Yes.

325. *The Chairman.*] That such cases might have remained in the ward for a week?—Undoubtedly. It is utterly impossible to provide against that. I can give you instances of it. There was one case—I cannot recollect exactly how long it was ago, but I should say about a year—of a patient of mine who was about to be operated on. A day or two before the operation I happened to go into the ward early in the morning—a little before my usual time—and was struck by the presence of a very bad smell in the ward. I inquired at once what was the cause of this very bad smell, and was informed by the nurse that the patient in the adjoining bed was suffering from putrid bed-sores, and I happened to make my visit before they had been dressed. I think if she had been operated on under these circumstances she would have had a good chance of dying.

326. And what was the matter with the patient in that next bed to your own patient?—She had large putrid bed-sores, that stank. It was quite by accident that I found that out.

327. And that highly undesirable state of affairs may happen to-morrow?—May happen any day.

328. Can you give us the name of that patient?—It was one of Dr. Colquhoun's patients, but I do not remember her name. I am very bad at remembering names. I do not remember the names of my own patients very often.

329. Was it a case of sloughing bed-sores?—I do not remember exactly what it was, but it was a terrible smell.

330. You say it was putrid bed-sores?—Yes. It was by the purest accident, through going into the ward early in the morning, that I detected it.

331. Do I understand you to say that ovariotomy is a recognised operation of modern surgery which is of large advantage to patients?—Yes. It is the means of saving an enormous number of lives annually. I forget the number that Sir Spencer Wells says that he has saved, but I know that it is something enormous.

332. It is one of the functions of a specialist to perform these and similar operations, is it not?—Yes.

333. And was this one of the objects for which you were appointed Surgeon to this Hospital?—I presume so. My duties ought to have been known when I was appointed.

334. I suppose you will be able to give us later the name of the work giving the number of cases that were performed by Sir Spencer Wells?—Yes.

335. *Mr. Solomon.*] In speaking of ovariotomy, I understand that you are speaking of ovariotomy, oöphorectomy, Tait's operation, and of gynecological operations generally?—I have understood that all along.

336. Take an ordinary case—that one of labial cyst, for example. That is an external operation and a simple operation, is it not?—It is a very simple one.

337. In a case of that sort are proper hygienic conditions essential?—Certainly.

338. What remark have you to make as to isolation?—I do not feel inclined to isolate a patient of that kind—that is to say, I should not have to do so in an ordinarily healthy ward.

339. But take the circumstances we have here in this Hospital. Ought the patient to be isolated for Emmet's operation?—She should not be operated on at all.

340. You mean in the sense that if she is to be taken out of the Hospital alive?—Yes.

341. In the present conditions of the Dunedin Hospital—there being no method of isolation for gynecological cases, and there being no proper system of ventilation—can the practice of gynecology be conducted with safety to the patients?—No.

342. Can the patients get the benefit of your gynecological skill in the Dunedin Hospital?—No.

343. Let us leave this business for a moment or two. You collected, I think, a certain amount of money for the purpose of getting a separate ward for these cases?—Recognising the danger of this condition of affairs, I made an appeal to the ladies of Dunedin for funds for this purpose.

344. That was subsequent to the reading of your paper?—I did it immediately after my return from Australia. I was so much struck with the wonderful appliances that I saw in Melbourne, and knowing our absolute want of appliances here, I thought we might get something in the direction that was needed—that if we could not get a hospital we might at any rate obtain a ward—and for that reason I made an appeal to and called on some ladies.

345. How much money did you collect?—Between £400 and £500 to start with. I afterwards gave an address, collecting-cards were sent out, and over £1,300 collected for the purpose of this ward.

346. You say that this money was collected for this special ward?—Yes; £1,300, or a little more. I cannot tell you the exact amount at present. This money was at various times offered to the Hospital Trustees—at first on certain conditions, which apparently did not meet with their approval.

347. Tell us what these conditions were?—I have all the letters here.

348. *The Chairman.*] Can you tell us in a few words what these conditions were?—The money was subscribed for a new ward. The essential condition was that a new ward was to be erected separate from the present building.

349. You say that the new ward was to be erected away from the present building?—That was one of the essentials on which the money was to be handed over to the Trustees; but the Trustees, for some unexplained reason, did not accept. I, however, think there is a reason, though they do not give it.

350. However, it was not explained?—It was not.

351. *Mr. Solomon.*] You subsequently offered the money unconditionally, did you not?—No; the last offer was that the money should be devoted to the erection of a ward.

352. Did you not eventually offer it untrammelled with any conditions?—No; it was offered conditionally on their building a ward for women.

353. Were you to get a Government subsidy on this money you had offered to the Trustees?—Yes; I believe that a Government subsidy was almost promised.

354. Would the money which you offered to the Trustees have been sufficient to have built this ward?—It would have been more than sufficient. It was suggested, as a matter of fact, that the surplus funds should be devoted to the improvement of the hospital in other respects.

355. And the Trustees, in their wisdom, refused the offer?—They did.

356. You have already explained to us that it is impossible to secure the safety of patients without proper isolation. If there had been built a separate ward for the treatment of gynecological cases it would have been under your charge, would it not?—I presume so; but that was never made a condition of the offer.

357. But in the ordinary course it would be under your charge?—Yes; but you must remember that the other physicians in the Hospital are at liberty, if they like, to take gynecological cases. Though I have been appointed gynecologist I have never offered the slightest objection to them doing so, and would never have thought of such a thing. If they had gynecological cases I presume that they would use the ward.

358. If there had been a separate ward, could the same state of affairs come about as nearly happened to you once before—could you have a patient of yours lying alongside a woman with putrid bed-sores for a week or so?—No.

359. That, then, would be obviated?—Yes.

360. *The Chairman.*] What proportion do the gynecological cases bear to the general surgical cases?—I am appointed to nine beds.

361. Out of how many?—A hundred beds. I do not know how many surgical beds there are. I cannot give you the details.

362. *Mr. Solomon.*] As to quietness: is that an important factor in these gynecological cases—that the patient should be kept quiet?—Undoubtedly, in cases of severe operation.

363. I mean, of course, in severe gynecological cases?—In severe abdominal operations it is essential. Splendid results may be attained if you attend to details in every respect; but a very slight oversight or mistake may be attended with terrible results.

364. Can you get a proper amount of quiet in the Dunedin Hospital?—Not with the present appliances and accommodation.

365. I will now call your attention to the case of Mrs. Evatt. Do you remember what happened in her case?—Yes, I do. Previous to Mrs. Evatt's case there was another ovariotomy case, which I had operated on in the large general ward, which had been set apart for this purpose. This ward was one of the spare wards, and was empty at the time of the operation. It was very draughty, and in consequence the patient had an attack of bronchitis.

366. Where did she catch the bronchitis?—I presume that she caught it in the ward. I know that she complained to my clerk that the ward was very draughty. Of course, there might be other elements come in there. This condition of things very much increased the patient's risk. In consequence of that I mentioned the fact to the Trustees, and suggested to them about having another ward, and they then set apart the little ward beyond the operating-room. It was a very small ward; but I thought it better than the big ward, which was both noisy and draughty. But my great objection to this ward was that it was so noisy. There was a wooden passage, and the patients used to travel up and down it frequently. There was a constant noise going on, and I gave that ward up.

367. *The Chairman.*] What is the date of Mrs. Evatt's case?—She was admitted on the 18th October, 1888, and you will see it in the Hospital book, page 191.

368. *Mr. Solomon.*] What was the operation you performed on her?—Oöphorectomy.

369. That is a very serious operation, is it not?—I do not think it is a very serious operation. The seriousness depends rather in having your appliances thorough. I do not look on the operation as being particularly dangerous if you have proper appliances.

370. What effect on her did the absence of proper accommodation have?—I got very frightened about her. She got very nervous and restless, and went out of the Hospital sooner than she had any right to do.

371. *The Chairman.*] How long was she in the Hospital?—Twelve days. It was a very unusual thing to send her out so soon, but I was frightened, from what I had seen before, that mania might supervene. I had seen mania supervene from abdominal operations of this kind in the Hospital.

372. *Mr. Solomon.*] At any rate, was there, or is there, any sufficient accommodation in the Dunedin Hospital for patients after such an operation as that?—Oh, no! there is none.

373. *The Chairman.*] Even after having set apart this small ward?—The accommodation is very bad. I only used the small ward once or twice. I found that the larger wards were better, and had to give it up.

374. *Mr. Solomon.*] Do you think that it would be sufficient to appoint one large ward for ovariotomy cases, or in which all gynecological cases could be treated?—It would not. I undoubtedly think that you ought to have some special accommodation for ovariotomy cases.

375. We have spoken also of the cases which ought to be isolated on account of the danger which may arise to them. Is there any provision for the isolation of cases in which there is danger to others?—No.

376. Is it proper that this Hospital should be without any method of isolation?—No. In general wards there certainly ought to be isolation for a great number of cases. There is one instance that I would like to mention. I remember one poor woman who had some gangrene in the leg. She was in terrific pain for night after night and for week after week, and her cries used to disturb several of the patients in the ward. I myself heard the patients complain of this: that they could not sleep on account of this woman's cries. Yet she had to be kept there because there was no accommodation for her elsewhere.

377. *The Chairman.*] What was the date of that?—I cannot give you the date, but I am sure that Dr. Copeland will assist you.

378. *Mr. Solomon.*] That case you give as an illustration of what came under your notice. Is it in the interest of the other patients that such cases should be isolated?—Undoubtedly it is. Another thing that should be mentioned is that there is no provision here for cases of *delirium tremens*. There is a padded room—a kind of cellar. It is really a disgrace, and I should like you gentlemen to see it. It is a most dangerous room. I do not know what proportion of people are there.

379. *The Chairman.*] Do I understand you to say that there is no provision by which specially dangerous cases can be isolated in a ward?—There is not.

380. Supposing that a case becomes suddenly dangerous to the surrounding patients, is there no way of taking that case out of the general ward and putting it into a special ward?—There is no special ward, unless this padded room, which I presume is used only for special cases.

381. *Mr. Solomon.*] But surely not for septicæmia cases?—No. You do not mix septicæmia cases with *delirium tremens* cases.

382. But Mr. Wales says it is quite good enough for them?—In these cases of *delirium tremens* there is always danger of pneumonia.

383. *Mr. Carew.*] Are there any hot pipes under the floor?—I do not know, but I think that there are sure to be some.

384. *Mr. Solomon.*] Do you think that the absence of means of separating cases which are not only intrinsically but necessarily a source of danger to other patients—cases which, from their very essence, are a source of danger to other patients—is right and proper? Or, do you think that it is safe to the other patients that there should be no means of isolating the class of patients to whom I have referred?—No. I think that every well-organized hospital has special wards for special cases. That is a well-recognised necessity.

385. Now we come to your second complaint: that the defects to which you have drawn attention seriatim are a source of great danger to the patients, and require immediate remedy. I shall subdivide them, as I did in my address, and shall ask you first of all, directly, is the total result of the imperfections to which you have drawn attention to-day of so serious a character, in your opinion, as to call for immediate attention, or is it of a comparatively slight character?—I think it is of a most serious character.

386. In your opinion, can the Dunedin Hospital be safely allowed to remain in the insanitary condition in which it is at present?—No. In my opinion it cannot be allowed to remain in the insanitary condition in which it is at present.

387. There is one question which does not come as part of my case, but which may be put here; and the Commissioners have to inquire into it. We have drawn their attention to all the defects which we think to be there: I would now ask you if you think that these defects could be remedied in the present building?—No, I do not think so. Of course, I quite see that very great improvements might be made in the present building, and at one time—until I inquired into the subject more particularly—I was inclined to believe that it would make a very good hospital. But since I have gone into the matter more carefully, and thought it out well, as I have done lately, I have come to the conclusion that it is not worth spending a large amount of money in trying to improve it, because any improvements would necessarily cost a very large amount.

388. Then, I understand you to say that at the present time the condition of the Hospital is such as to make it a source of active danger to the patients?—Undoubtedly.

389. Do I understand you to say that it is a safe place to take patients to, as it stands at present?—No. I do not think it is even a safe place, because mischief may arise there. It certainly is not a safe place for a hospital, where you are supposed to undertake certain operations and certain kinds of treatment. I think we are all frightened to perform any of these operations now.

390. *The Chairman.*] That is, since July?—I have not done an operation since then.

391. So far as you know, no major operation whatever has been performed in the Hospital since July?—I have received no notice, and know of no operation being performed. We generally get notice.

392. So far as you know, has any operation been attempted?—When any operation is about to be performed I get notice from the house surgeon; but I have had no such notice since July. I should like to add that I have some patients in the Hospital at the present time who require operating on badly, but I am frightened to touch them. There is one case that I may mention specially. I had a consultation with the staff on the case of a woman with an internal disease. At the time an operation was suggested her condition was thought to be probably a case of malignant disease, and it was decided to wait three weeks to see what change had occurred—to see if it was cancer or not. I waited for three weeks and found that the growth was enlarging; but I am not going to operate.

393. Why?—Because I am frightened.

394. Why are you frightened?—I am frightened of septic mischief. It is not safe to operate.

395. What would cause septic mischief to arise?—The condition in which the Hospital now is. I know that there has been erysipelas about the Hospital.

396. I understand you to say that in one case at any rate at the present time you are satisfied you should operate, but you consider that it would be unsafe to do so?—There is one case in which I am certain I ought to operate if the Hospital were in a satisfactory state. There are four cases which should be operated on, and which require operation badly. One woman is very dangerously ill at the present moment. Her temperature last night was 110°.

397. You think that she ought to be operated on?—I think that she runs a risk of her life through not being operated on.

398. Do you think that she would run a risk of her life were she operated on?—I do.

399. Then there would not be so much risk after all, seeing that it would be a sort of certainty?—I will not go so far as that.

400. What operation is it that requires to be performed?—Abdominal section.

401. And you do not consider yourself justified in doing it?—I do not.

402. That, of course, we all understand is at the present time. Now, for a considerable time past have you performed any operation in the Dunedin Hospital with confidence?—I have never operated with confidence as to results. I have been taken in so often that I am never sure now of what is going to happen; while outside I operate with every confidence. In the Hospital, even with the simplest cases, things go wrong which should not go wrong. All that I can say is that I had no reason to anticipate anything but good results in every case I operated on; yet cases went to the bad without any assignable cause whatever, unless it be owing to the unhealthy state of the Hospital.

403. That brings us to a general question. The great danger that is to be feared in these major operations is the danger of septic poisoning, is it not?—Yes.

404. Now, is that danger at the present day of the same importance as it was before the perfection of Listerism?—No. Since antiseptics have been brought into vogue, and been so generally used, we are much more sure of our results.

405. Assuming a perfect condition of hygiene in the hospital—that is to say, as perfect as the ordinary atmosphere outside—what is the danger of pathogenic germs?—You will find them in the street.

406. And *a fortiori* in the hospital?—Yes.

407. Assuming as nearly a perfect condition of hygiene as one can reasonably expect in a hospital, with the present antiseptic treatment, in your opinion should there be any septic blood-poisoning following such operations as we have been speaking about?—I should expect to get in a healthy hospital as good results as I get in private practice.

408. And outside?—I got good results, while I got bad results inside.

409. Speaking of good results—I do not want to go into your success otherwise, as it has nothing to do with this case, but speaking generally, for the last two years, at any rate, in your outside practice have you experienced any case of death after operation, excepting puerperal fever, by septic blood-poisoning?—I do not think in all my experience in Dunedin that I have ever had a case of blood-poisoning following an operation. I cannot think of such a case ever since I have been here.

410. That is, outside?—Yes; outside. To the best of my recollection—I may have forgotten it, but I do not remember ever having had a case of septic blood-poisoning after operation.

411. Of course, you exclude puerperal cases?—Yes.

412. *Mr. Solomon.*] Given such a condition of hygiene as you obtained outside, or which you might have expected to obtain in the Hospital, but which we know unfortunately did not exist, should there be any special danger of septic poisoning arising after operation?—No; if the hygienic conditions were such as I could wish there should be no special danger.

413. *The Chairman.*] You mean by that, I presume, if you had separate wards for your own class of cases, constructed in the manner you have already indicated?—I mean that with good nurses and good appliances we should have splendid results.

414. *Mr. Solomon.*] Do you look on special wards as absolutely necessary, or do you think that with proper ventilation and proper construction a sufficiently satisfactory hygienic state of affairs might be provided?

415. *The Chairman.*] You mean, in mixed wards?—I do not think it is wise to have gynecological cases in mixed wards. It is always safer to have these in a ward by themselves, simply from the fact that they are specially dangerous.

416. *Mr. Solomon.*] Do you know a writer named Victor Horsley?—By repute, yes.

417. Is he a recognised authority on this subject?—He is.

418. I wish to call your attention to his article in Heath's "Dictionary of Practical Surgery," at page 417 of volume ii. Do you agree with this paragraph?—Yes.

419. In your opinion, has the present system of antiseptic treatment practically obviated that danger?—Not simply with antiseptics.

420. Assuming, of course, that the other conditions are good?—Then, yes, certainly.

421. Assuming good hygienic conditions, are there known dangers to cope with?—Yes.

422. And assuming that there is nothing in the air to trouble you, have you known dangers and difficulties to contend with?—We have known dangers and difficulties.

423. But modern surgery teaches you—does it not?—a way to deal with these dangers and difficulties?—Yes, certainly. With regard to this, I may say that at Home the schools who practise antiseptics differ considerably. Lawson Tait depends on pure air and good hygienic surroundings; he does not believe much in antiseptics, but gets splendid results simply from the extreme hygienic precautions which he takes. Another school obtains almost equally good results by rigid antiseptic treatment, Lister being the chief exponent of this division.

424. *The Chairman.*] Has not the use of antiseptics been of late abandoned in some hospitals?—In the strict sense of the word, it has.

425. *Mr. Solomon.*] I understand you to say that you know the dangers of the operations themselves, but the conditions enable you to cope with them?—In the case of abdominal operations you do not know the dangers, because there are so many unusual dangers.

426. But I am speaking only of septic poisoning. Modern surgery enables you to deal with these cases?—Yes.

427. Can you, with the most modern and improved system of antiseptics, deal or cope with the dangers of blood-poisoning that arise from a defective condition of hygiene?—Certainly not. I think that is admitted by every authority. But I do not, nor would any one, like to say that even with the most perfect antiseptic precautions you can prevent mischief—indeed, it is absolutely impossible to do so—in private practice. It is even most difficult in a chemical laboratory to obtain absolute results.

428. With the utmost skill, do you agree that it is impossible to cope with the dangers that may arise from an impure atmosphere?—Undoubtedly it is.

429. With the Dunedin Hospital in its present condition, with all the skill that you can give to your patients, with all the care that you can bestow on them, can you prevent the dangers to which they are exposed there?—No, I cannot.

430. You have told us that in your own experience you know of appreciable dangers owing to the unhygienic conditions of the Hospital?—Yes.

431. I assume, then, that there is, in your opinion, very appreciable danger to patients in the Dunedin Hospital?—I think there is, indeed.

432. And you have told us that in your private practice you know of no case of death from septic blood-poisoning after operation?—No. I had a death from peritonitis.

433. I now come to the Hospital, and ask you to tell us what has been your experience there, or, rather, what has been the net result of your experience there?—In my own experience I have had four cases of death from septicæmia.

434. *The Chairman.*] Out of how many cases?—I cannot give you that. If I may refer to my cases I shall be perfectly willing to give the whole of them, but I must refuse to give the bare number of deaths. The only way by which to give a correct record is by giving you a detailed account of each death.

435. *Mr. Solomon.*] You have already told us that you know of no case in your private practice of death due to septic poisoning. I want you to tell us how many abdominal sections you have operated on, both inside and outside the Hospital, and the number of these that are traceable to septic poisoning inside the Hospital?—That would be a very difficult thing indeed. I would rather give you my deaths right off.

436. Then give us your deaths outside first?—I have had no deaths outside from septic poisoning. In my oöphorectomy and other abdominal cases I have had no deaths from septic symptoms.

437. Now, I want to know this: In your opinion, as the result of all that you have told us, is the net result this: that you had a number of cases, ovariotomies and abdominal sections, outside, yet never has one death from septic poisoning arisen; but in your cases inside the Hospital you have had several deaths from septic poisoning?—Yes.

438. Is the latter result consistent with the conditions you found in the Hospital—consistent with the defective state of hygiene which you found existent there?—Yes, it is.

439. Is it possible that it might be caused directly by the bad air?—Yes, certainly it might.

440. On the other hand, do you undertake, or can any medical man undertake to swear positively, to say how septicæmia, in any particular case, was actually produced?—No, I do not think it is possible to do so.

441. Do you say that it is perfectly consistent with the bad state of the atmosphere?—Undoubtedly.

442. In your opinion, are the results which you have found in the Dunedin Hospital consistent with any other reasonable theory than that they are due to the unsatisfactory condition of the Hospital?—No. Take especially a serious case that I have recently had. To my mind it is perfectly conclusive that the result has been due to bad hygienic conditions.

443. Do I understand you to say that you have founded your conclusions, which were first of all suspicions, but have since grown into convictions, on any individual case?—I have not.

444. But that all of them make up the net result of your experience?—Yes. I may say this, further: that had the experience which occurred to me in July happened to me at any other time, irrespective altogether of the suspicions that I had previously entertained, these cases of themselves

alone would have made me in my own mind pretty sure that the unhealthy surroundings had been responsible for the outbreak.

445. Suppose we take your experience of that week in July, along with all the rest of the things that we know of now. We know as a fact that the Hospital is insanitary, do we not?—We do.

446. First of all, take that particular week alone: would the occurrences of that week make the cases anything more than suspicions?—I should decidedly say that they were more than suspicions.

447. I understand you to say that these cases not only strengthen but confirm your previous experience?—Yes.

448. Do you base the second portion of your complaint, as to the highly unhygienic conditions of the Hospital, on any individual case, or do you base it on the general results of your experience?—On the general results of my experience.

449. And do I understand you to say that Mrs. S——'s case, and the other cases which will be referred to by-and-by, are illustrations by which you come to that conclusion?—Yes. Mrs. S——'s case is a very striking illustration. I do not think that I ever read of a much more striking series of cases.

FRIDAY, 22nd AUGUST, 1890.

Dr. BATCHELOR'S examination continued.

Witness: In connection with the question that was asked me yesterday about the money that was offered to the Trustees for the erection of a gynecological ward, there is one remark which I wish to make in order to make my reply correct. There is a letter written on the matter which was handed into the meeting on either the 13th or 14th of May. That letter explains itself, and I should very much like that it be read.

450. *Mr. Solomon.*] It was subsequent to this, was it not, that Mrs. Batchelor wrote that a sum of £1,270 had been raised?—Yes. [Letter read as follows: "A sum of £1,270 has been raised by public subscription for the purpose of building and furnishing a new ward in the Dunedin Hospital, and for the treatment of special diseases of women. Upon this sum we have every reason to believe the Government subsidy can be obtained. I have the honour, by direction of the Committee of the Women's Ward fund, to request that you will inform me if the Trustees are prepared to accept this sum upon the distinct understanding that it shall be devoted to the purpose for which it was raised. In the event of your answer being in the affirmative, the money will be at once handed to your trust. I may add that, should the Trustees decide to build a new hospital, these moneys may be used in aid of that purpose, provided that a special ward in such new hospital be set apart for the treatment of these cases for which this collection was made.—ANNE BATCHELOR."]

451. That money was offered to the Trustees to build a hospital, was it not, provided that included in the hospital a special ward should be built before all the money would be spent?—Yes.

452. And that was the last offer was it not?—Yes.

453. *The Chairman.*] Was the first offer declined?—Yes; there were two or three offers which were made at different times and under different conditions.

454. And the first offers you say were declined?—Yes.

Mr. Chapman: That was for building a new hospital.

Mr. Solomon: But it was provided that the building should include a special ward for gynecological cases. You, gentlemen, will see that the matter was considered at a meeting of the Trustees—I have the report of the meeting here—and that it was then moved by Mr. Solomon, who is my father, that the money offered should be accepted, subject to the conditions contained in the letter.

The Chairman: Was that motion carried?

Mr. Solomon: No; Mr. Solomon proposed, and Mr. Robin seconded, a motion that the money should be accepted. Mr. Green moved, as an amendment, "That the letter be received and consideration of it deferred until the proposed nurses' home is erected, and the Trustees see what is necessary." Mr. Clark seconded this amendment, stating, among other things, that it was proposed in order that the money should be hung up. Then Mr. Solomon proposed, as a further amendment, "That Mrs. Batchelor's offer be received and consideration of it deferred until the next meeting of the Trustees." In each case you will find, gentleman, that four of the Trustees voted for the money being used and four against it, and that the Chairman of the Trustees in each case decided the matter by his casting-vote, and that he finally decided the question by voting against it.

455. *Mr. Solomon.*] And the result is, doctor, that that money is still lying at the disposal of the Trustees who refuse to accept it?—Well, all I can say is that I never heard anything more about it.

456. But am I correct in saying that that money is still at the disposal of the Trustees?—Certainly, subject to the conditions you have named.

457. Which are that they can use it to build a hospital, provided that they have a separate ward for women?—Quite so.

458. And they have refused to accept it at all?—In the meantime they refuse to accept it at all.

459. Do you know what the Government subsidy on this money would be?—Twenty-four shillings in the pound.

460. *The Chairman.*] Has that subsidy been promised?—I think it was some time ago. I may say that it was virtually promised at all events, though I do not know what is its position now.

461. Is it a special promise affecting this Hospital only, or is it a subsidy that is paid according to a general rule?—Yes. There was supposed to be some difficulty in the Trustees accepting it, because the money was to be given for a special purpose, and we made inquiries whether that objection would hold, and we received reliable information that it would not hold, and that the Government subsidy would be given even though the money were given for the special purpose of building a ward.

462. Are there any other funds that you are aware of that would be available for building a hospital beyond this £1,270 and the Government subsidy of twenty-four shillings in the pound?—Yes, there is the nurses' home fund, which has been accepted by the Trustees for the purpose of building a nurses' home.

463. How was that money got?—It was collected by voluntary subscription.

464. Got by whom?—By Mr. Henry Houghton and Mr. George Gray Russell.

465. How much is it, do you know?—I think it is about the same as the other fund.

466. That is, about £1,270 then?—I think so.

467. Are there any further moneys available?—I believe there is a sum of £5,000—a bequest that has been lately given to the Hospital under peculiar conditions—namely, providing extra comfort for the patients. I think that this money might by a special Act of Parliament be devoted to the purpose of building a new hospital. By-the-by, that £5,000 does not insure a Government subsidy on the whole of it. I think the Government only give £500 on any bequest.

468. Would the nurses' home fund carry the Government subsidy?—I should think so. Yes. I am pretty certain it will.

Mr. Chapman: I may say that that £5,000 is not available under the terms of the will for this purpose.

469. *The Chairman.*] That is a total, without assuming that the nurses' home fund would get the Government subsidy, of about £9,000?—Yes.

470. And if the nurses' home fund got the subsidy it would add £1,630?—I am not quite sure about getting the subsidy for the nurses' home fund, but at any rate it was promised to us.

471. If you got a subsidy for the nurses' home that would make fully £10,000 available for a new hospital, would it not?—Yes.

Mr. Chapman: But that cannot be assumed, because that would necessitate——

The Chairman: I am only taking the figures as stated by Dr. Batchelor.

Mr. Chapman: But that would necessitate getting an Act of Parliament to totally alter the terms of the will. I do not know whether Parliament would consider itself justified in passing such an Act. I know that in England it would be extremely difficult, but we are a little more accommodating in this country, and reasonably so, because it is very often found necessary to make changes of the kind in a trust. So long as Parliament consents to it being done it cannot reasonably be objected to, but as a matter of fact it is very difficult to get such things done.

The Chairman: All I have put down is the sums mentioned by the witness. It is more convenient to total them up now, but the evidence itself will show that the whole of the money is not available.

472. *Mr. Solomon.*] Of course this is merely by the way, but it may be useful to you gentlemen if you wish to make any suggestions. [To witness] : There is one question which I asked you yesterday which was left rather uncompleted: it had reference to the results of a number of cases that you performed in private and in the Hospital, having regard to the question of septic poisoning. I will take now the whole period of your connection with the Hospital, extending over the past twelve years, I think, and ask you how many abdominal operations you have performed in your private practice in Dunedin?—I have performed thirty-seven such operations in my private practice.

473. Have you had any deaths from septic poisoning in your private practice?—I never had.

474. Out of these thirty-seven operations have you had one death from septic poisoning?—I have not, nor with septic symptoms. I have had deaths, but not from that cause. I should like to mention one death—I do not wish any reflections to be made when this case is cited by-and-by—which resulted from peritonitis. I suppose it was from septic poisoning in a way, but there is a very good reason for accounting for the death. The operation was an exceedingly severe one, and at the time I undertook it I was under the impression that it was a cancer growing in the fallopian tube, and that this growth formed a very intimate connection with the part and the surrounding peritoneum. It was a very difficult thing indeed to separate it, and in separating it I unfortunately injured the ureter. An extravasation of urine occurred in consequence into the peritoneal cavity and gave rise to peritonitis. You may call it septic peritonitis, but in my opinion septic poisoning had certainly nothing whatever to do with it. The injury to the ureter was the cause of what occurred.

475. You swear that in all your operations in Dunedin, extending over a period of twelve years, you have never met in your private practice with any abdominal operations but those you have just referred to, and that you had only one death from septic poisoning?—I swear that I never had one death from septic poisoning. I have accurate records of all these cases in my books.

476. Now we will take your Hospital practice. How many operations have you performed there?—Fifty-six. I may have more, but I should like to have time to look up all my records.

477. Out of those, how many deaths arose from septicæmia?—I would not be quite sure, but I will answer your question in this way: I know of one death from pure septicæmia. It was that of S—— M——. This had been a severe case of septic peritonitis. This case I did not report at the time. It was a severe operation. I thought it quite likely to be, but I did not bring it forward, because I was not thoroughly convinced that it was due to the unhealthy condition of the Hospital,

and not being so convinced, I thought I had no right to bring it forward. No. 2 case was septic peritonitis ovariotomy, and it was a delicate and severe operation.

478. But No. 1 case, you say, is pure septicæmia?—Yes.

479. And No. 2 case was septic peritonitis occurring after a severe operation?—Yes; it was both a severe and a delicate operation.

480. No. 1 case was one of pure septicæmia?—Yes.

481. No. 2 case was septic peritonitis?—Yes; that was a severe and delicate operation. No. 3 case was septicæmia after abscess in the peritoneum; fourth case was purulent peritonitis after severe Tait operation; fifth, purulent peritonitis and septicæmia after removing the whole of the uterus; sixth case, septic peritonitis after Tait's operation. This sixth one is the only one that has not been taken directly out of my note-book. Then there is a case which I must mention. It is that of a patient in the Hospital named C——, who had a cancer in the abdomen. We had a consultation about tapping her, but it was suggested that instead, as there was no more risk, we should make a small opening and see what there was. That I did, but she died two or three days afterwards. In all probability her death has been entered in the Hospital books as due to collapse. In the case of a death occurring twenty-four hours after an operation we can generally prove the cause of the death was septic poisoning. What was entered in the Hospital book as collapse in this case was in all probability due to septic poisoning.

482. Do you say then that in your opinion that case was a case of septic poisoning?—That case is not entered in my book as an abdominal operation. It is rather hard that I should be credited with a death from operation when the case was merely a tapping. That is absolutely clear from what occurs in my book. "Incision for tapping: hardly fair to enter." That occurred on the 17th December.

483. Are there any more cases?—There is another case, but I do not like to say anything about it, as it is a rather doubtful one. We made a very slight incision to see what was the matter. She died from septic peritonitis. It was supposed at that time that her death was due to rupture from the cancer; but I must say from what I have found out since, even as late as last night, that I am doubtful whether that case may not have been due to some defective hygienic condition.

484. *The Chairman.*] Then you withdraw the statement that there were four deaths, and substitute eight cases of death?—I say that there were eight cases of death; but these, of course, were after abdominal operations.

485. You do not include Mrs. S——'s death, do you?—No, I do not include it. I do not include either of those other two deaths I have mentioned already as having occurred from septicæmia.

486. That is the old woman with the fallen womb, is it not?—Yes, and the soldier. That makes eleven cases altogether. The reason why I remember bringing these cases forward was that they were striking ones. The other two were open to doubt.

487. Now, I want to ask you this question: Take this case in the meantime. Are you prepared to swear positively that death in this case, or in any other one of these cases, was absolutely produced by poison coming from the contaminated state of the air?—The contaminated state of the air: that term is too general.

488. Well, I will put it in this way: Can you undertake to swear that in no one of these cases—Mrs. S——'s or anybody else's—can you or any other medical man swear positively that the septic poisoning which the woman contracted was undoubtedly introduced into her body?—From the hygienic condition of the ward, do you mean?

489. Yes. I will not swear to any case positively as being due to the condition of the ward. I would not like to do that in regard to any individual case.

490. In your opinion, can any medical man honestly swear—I can hardly well express what I want to bring out—swear positively, that a given result arose from a given cause, unless in a chemist's laboratory. Take, for instance, septic poisoning. Given a woman who contracts that anywhere, is it possible that any medical man can positively swear that that poisoning arose from a particular place, and passed into her body?—You mean, came in a particular way into her body, I suppose.

491. Yes?—Well, then, I say no medical man ought to swear to any such thing.

492. Are the insanitary hygienic conditions of the Dunedin Hospital sufficient, in your opinion, to account for those septic results which you have described?—For all those results?

493. Yes?—Some cases I would not like to lay too much stress upon. I prefer to pick them out individually, because there may be septic conditions about a patient which I did not know of when I operated—in fact, there have been. Taking the unhealthy state of the Hospital, and a certain number of these cases I have mentioned, then I think that they stand in relation to cause and effect. I certainly think that.

494. I suppose it does not necessarily follow that because septic poisoning supervenes after these abdominal operations they should prove fatal to the patient?—No.

495. You are able to cope with the dangers that present themselves?—Yes.

496. In any case in which septic poisoning has occurred, does it supervene despite all efforts to cope with it?—Yes.

497. What effect would the hygienic conditions—or, rather, want of hygienic conditions—have in enabling you to cope with the mischief that has already arisen?—It undoubtedly militates to a very serious extent against our operations.

498. Can you call to mind in your private practice any case in which septic poisoning has arisen after one of these operations, that you have been able to subdue?—Yes, I can think of two cases where very severe septic symptoms supervened. In one of these cases the patient recovered. One was a case of removal of an enlarged uterus—a necessarily severe operation—and in that case too the patient got better.

499. In such a case as that could septic mischief arise in consequence of the faulty hygienic conditions despite the operator having taken every precaution?—Yes; that may happen after a severe operation, and despite all antiseptic precautions. I suppose you mean in a severe case of that kind; and in such a case I am not surprised to find septic mischief.

500. But you were able to cope with that, were you not?—Yes.

501. May I say that a dreadful operation of that sort would not be undertaken unless it were absolutely necessary?—It certainly would not.

502. Given a case in the Dunedin Hospital in which an operation of that sort was absolutely necessary in order to save life, and given septic poisoning, which one might anticipate might arise—as it did arise in that case that you refer to—do you think that under those circumstances you can reasonably hope to cope with it as you could if it had been in your private practice?—No; and I have remarkable proof of this. I have kept the reports carefully by me. The two cases I am about to refer to were very much on the same lines, with this exception, that the woman operated on outside was an oldish woman, while the woman operated on inside was a remarkably strong, healthy woman. The patient operated on inside died, while the patient operated on outside recovered.

503. Can you say what, in your opinion, caused the different results in those two cases you have just mentioned?—I think it was the insanitary state of the ward; that undoubtedly had to do with it.

504. In my opening remarks I gave an extract from Erichsen on this subject. I would refer you to that author at page 113.

504A. *Mr. Chapman.*] By the way, can you furnish me with the names of the patients you have just referred to?—I will give you full reports of all cases I have mentioned in my evidence.

505. *Mr. Solomon.*] Coming now to the general question as to the great importance of good sanitary conditions of an hospital, I ask you formally do you agree with Erichsen in this extract from his work in volume i.: "It is the difference in the hygienic arrangements in hospitals that, more than any other condition, influences the varying rate of mortality in different institutions, and it is obvious that, *cæteris paribus*, those patients will have the best chance of recovery who are most scrupulously attended to in this respect"?—Yes.

506. Do you agree with him where he says, "A sufficient cubic space, free ventilation, and clean wards are therefore the essentials of a healthy hospital"?—Yes.

507. Can you say whether the Dunedin Hospital complies with this description—a sufficient cubic space, free ventilation, and clean wards?—No, it does not.

508. Does it comply with any one of these descriptions? First, has it sufficient cubic space?—No.

509. Has it free ventilation?—No.

510. Has it good clean wards?—No—that is to say, if Erichsen means surgically clean, I say certainly not; and I suppose he does speak of the ward in a surgical sense. I do not think he means a dirty ward in the ordinary sense, but that the ward is not clean surgically.

511. Then, Erichsen further says, "The faulty hygienic conditions that are still too frequently met with in hospitals are alike a cruelty to the patient and an injustice to the surgeon. The cruelty to the patient consists not only in exposing him to an increased chance of death—or, as it is commonly called, to 'a higher rate of mortality'—from septic diseases that are preventible, and that are the direct outcome of the defective hygienic arrangements of the institution, but in subjecting him to a prolonged and imperfect convalescence, either or both of which conditions may be taken as the measure of the neglect of sanitary arrangements in a hospital." Do you agree with that?—Yes. I added that remark to the list of cases I forwarded to the Trustees.

512. There is another thing I wished to get out here. Do you agree with what I have said during this inquiry about the germ theory?—Yes.

513. Is it accepted fully amongst medical men that the cause of hospital infections, such as erysipelas, gangrene, &c., is the presence in the atmosphere of pathogenic germs?—That is undoubtedly the accepted theory of the day, though I dare say a few men will be found to differ on the point.

514. They are sometimes called micro-organisms, are they not?—Yes.

515. In every atmosphere these germs exist, do they not, to some extent?—Certainly to some extent you will find them, but at the top of high mountains they will decrease; but in certain conditions of still air they will settle, as Tyndall's experiments show.

516. What effect on the liability to infection from this cause has the concentration in which these germs exist in the atmosphere?—The danger increases with their concentration.

517. What effect on the concentration of these germs has the presence or absence of a free current of air through a hospital ward?—To diffuse them—to send them away. They escape through the ventilators.

518. Are they more or less concentrated on account of a free current of air?—They are less concentrated with a free current of air.

519. You yesterday drew our attention to the condition of the Dunedin Hospital. In certain portions of it you said that there was extreme draught, and that in others there was continual stagnation. Is that so?—Yes.

520. Where are these germs most likely to originate—in a medical or a surgical ward?—I should say they were most likely to be generated in a surgical ward; undoubtedly so. Undoubtedly, I think that they are generated in a medical ward. They are given off from different diseases accompanied by pus-formation.

521. Sloughing wounds—what about them?—Multiplication of different sorts of germs occur especially if the case is not carefully attended to.

522. And burns?—Are very dangerous.

523. And sloughing wounds, I suppose, are also dangerous?—Yes.

524. These are the sorts of things, I suppose, that are generally found in a ward?—They must necessarily be found in a surgical ward.

525. Can I say, speaking generally, that any wound which would discharge pus would discharge pathogenic germs?—Yes.

526. Taking the surgical wards in the Dunedin Hospital, is it usual or unusual in such wards to find cases productive of these germs?—Generally, you find one or more cases where germs are produced in large numbers.

527. And in the portions of the ward in which the air was stagnant would you expect to find these germs diffused or concentrated?—I should suppose them to be more concentrated. But I do not want to say much about this matter, as I do not understand thoroughly the question of ventilation of the Hospital.

528. Is there or is there not a consensus of opinion that these germs are apt to be absorbed into the "respiratory tract"?—I think that the weight of opinion is against it.

529. Is there opinion on both sides of the question?—Decidedly. A great many still hold that it is not, but the weight of opinion is, I think, rather against it. It is not a settled point.

530. Then, we may say that there is a difference of opinion?—There is undoubtedly. Certainly it is not yet settled, and it is one of those questions which are very hard to settle.

531. *The Chairman.*] They are not absorbed into the body by respiration alone?—Some say that they are, and some say that they are not.

532. They cannot be kept out of the lungs?—Some think that they cannot penetrate the mucous membrane unless there is a breach of continuity.

533. *Mr. Solomon.*] I will refer you for this to a passage by Victor Horsley in his article on septicæmia in the "Dictionary of Practical Surgery." At page 423, vol. ii., he says, "Not proposing to waste space by discussing this point, we will pass on to the conditions surrounding the inoculation of the virus. Although, of course, it is highly probable that septicæmia in both forms may arise from absorption of the virus by the alimentary canal or respiratory tract, it appears to be very rarely caused in this way." Is there any difference of opinion that if these germs or organisms fall on open wounds they are liable to cause septic poisoning?—I should say that there is no difference of opinion on that point.

534. Can I say this: that these germs may fall on open wounds in such a way as that they can be taken directly into the blood-system of the body?—In the ordinary acceptation of the term, undoubtedly the blood admits them.

535. The theory is that these germs are taken directly into the blood-system, is it not?—Some forms are taken up by the lymphatic system, but there are a great many theories with regard to that.

536 They spread by multiplication, do they not?—Yes; in a wound they spread by multiplication.

537. You have told us already that some wounds are more favourable than others to germs through multiplication?—Undoubtedly.

538. And, as a corollary of this, that the more concentrated they are the greater is the liability to contagion, and that this is the first danger arising from improper ventilation?—Yes.

539. Is there any other danger of this germ-contamination than from improper hygienic conditions—as, for instance, the condition in which the patient is?—I do not think there is so much danger from a patient's condition having run down as from septic conditions existing prior to operation; for very often a patient's life deteriorates in unhealthy surroundings.

540. He is in lower bodily condition, is he not?—Yes.

541. Is he more or less likely to contract disease when in that state?—Undoubtedly he is more liable to contract disease.

542. What effect would living in this vitiated atmosphere have on the length of a patient's convalescence and stay in the Hospital?—Do you mean in our Hospital at the present time?

543. Yes?—I am sure that a very great number of the cases which are brought into our Hospital are kept there very much longer than they would have been if the Hospital had been more healthy. I have seen a great many instances of this. For instance, in cases of excision of the knee-joint——

544. But I am not talking at the present moment of excisions of the knee-joint, but of actual surgical cures in an ordinarily healthy patient?—As an ordinary and general rule, the health of a patient must deteriorate, and he must necessarily be kept longer, in a hospital with defective sanitary conditions.

545. Can you draw any conclusions from the appearance of the patients in the Hospital?—Yes.

546. How do they look?—Very pallid. I think, if you look around at our nurses and others engaged in the Hospital, you will find them very anæmic.

547. Can you find us an illustration anywhere? Is not our own House Surgeon a remarkable case in point?—I might mention our last house surgeon, Dr. Fooks. He was ill for a time while he was in the Hospital, and went to Seacliff, and has been remarkably well since he has been there.

548. But, joking apart, is not Dr. Copeland an illustration in point?—I do not think that Dr. Copeland is as well as he ought to be. As a matter of fact, he was very ill shortly after he came here—due, I dare say, to the unhealthy state of the Hospital. He had an attack of *la grippe*, and did not recover as quickly as he should have done.

549. But, as to the patients themselves, what about their appearance?—I have seen several instances where the patients have been very ill while they were in the Hospital, but when they left the Hospital they recovered in a remarkable way. One case of this sort was a peculiar one, and I mentioned it to one of the Trustees, I believe. That was a case where I had performed

Emmet's operation in the Hospital. That case did not heal very kindly—it was very slow—and I wanted the woman to keep in the Hospital for some time longer; but she was dissatisfied with the Hospital, and insisted on going out. She sent for me a week or so afterwards, and I went to her prepared to blow her up; but she was so much better when I saw her that of course I did not do so.

550. Possibly you blew her up for not having gone away before?—I could have done so. I remember that I drew particular attention to this case. The wound, which I had expected to find separated, from the fact of the woman having been jolted about in the course of removing her to her home, had improved in a wonderful manner within a week from leaving the Hospital. It struck me very forcibly at the time, and I mentioned it to one of the Trustees.

551. Do you think that she would have been under more healthy auspices outside than inside of the Hospital?—Undoubtedly. I think she ascribed it herself to the diet in some way; but I suppose it was due to combined hospital influences.

552. I may have conveyed to the Commissioners the impression that the dangers arising from hospital infection from this germ-business are confined to surgical cases. Is that so?—No, certainly not.

553. Where is the highest rate of mortality?—In medical cases.

554. Which affords the best illustration?—Surgical cases are much more startling. I should say that in medical cases the results are much more potent. The bad surroundings affect medical cases materially, and add more to the mortality.

555. I suppose that in a surgical case the practitioner can better illustrate his results?—Undoubtedly.

556. I want to ask you this general question: Is there any disease of any sort that could be placed for treatment in the Dunedin Hospital which would not be aggravated by the vitiated state of the atmosphere to be found there?—No, I do not think that there is, because a patient's health must suffer. I suppose that any disease would to a certain extent become aggravated, but some diseases would be affected very little.

557. I do not care whether the effect is large or small. I ask you if there is any disease of any sort which if brought into the Dunedin Hospital would not be aggravated by the fact of the patient being put into such a vitiated atmosphere?—I know of none.

558. In your opinion, is that a state of affairs that can be safely tolerated?—No, I do not think it should be.

559. You have further told us that a patient's disease must be aggravated by his going into the Hospital. Is there any danger in the present condition of affairs of other diseases arising in the Hospital itself from that condition of affairs?—Before I leave this subject I should like to say a few words about aggravation. I have a very striking case in the Hospital at present, and I wish to mention it here. There was a girl sent in from the Benevolent Institution, suffering from what was supposed to be an ovarian tumour. The girl remained in the Hospital for some little time.

560. Was that Miss D——?—Yes. Her abdomen was swollen, tense, and puffy, and she was rather inclined to be hysterical. I set her to work about the wards, and told her nurse to keep her mind from herself. Her temperature began to rise in about a fortnight or three weeks. She began to get fever, and developed symptoms that made me certain—as certain as I could be of anything in medicine—that she was suffering from tubercular peritonitis. I consider that the state of the ward was very likely the cause of the development of the disease, which had been latent in her. I consider that this is a very striking case.

561. Had nothing been done with that girl—had no operation been performed?—No.

562. Do you mean to say that she has developed that disease through the unhealthy state of the ward?—No, I do not think that, but I think the disease became active from the unhealthy surroundings of the Hospital.

563. What does that illustrate?—That the disease became aggravated. I have no doubt that the physicians will be able to give you better illustrations than I shall be able to do.

564. Have you had any experience in cases of the excision of knee-joints—do not go into particulars in the meantime of cases arising outside in which you have performed that operation?—Yes; I have performed several cases of excision since I have been in practice here. Perhaps the better way will be to illustrate——

565. I prefer that you would not do so in the meantime. Did suppuration supervene?—Yes.

566. That was what was not anticipated?—I guarded against it as far as possible.

567. Then, suppuration is evidence of septic mischief?—Undoubtedly.

568. In your private practice in Dunedin have you ever had a case in which suppuration has supervened?—In my first case very severe suppuration existed at the time I performed the operation, which was performed before the days of Listerism. We did not know much about it then, or, rather, we carried it on imperfectly. The patient had prolonged suppuration, but he has done very well since. That is the only case that I remember in my private practice in which the patient had suppuration after excision. I have had some cases of excision, but not very many cases. I should say three or four, but I am not quite sure about the number, because I have not kept record.

569. But since you came inside the Hospital, what about your experience there?—Well, my experience inside the Hospital has been particularly unfortunate.

570. Do you remember any case—do not go into particulars in the meantime—of persons suffering from injuries to the knee who have developed suppuration without being touched in the Hospital?—Yes, I remember a case of that sort, but I should have to look up my notes to give you particulars.

571. Is there any danger, in addition to that, of the diseases themselves being generated in the Hospital in consequence of its unhealthy condition?—Yes, there is.

572. In the present condition of the Dunedin Hospital, does a patient who comes into the Hospital suffering from one disease run any appreciable risk of getting another disease while in there?—I think he does. From my own observation I should decidedly say that he does.

573. *The Chairman.*] I understood you to say in your former answer that disease might be generated in that way?—Yes.

574. The first question you were asked was as to the origin of disease in an unhealthy state of the Hospital; and then you were asked if the disease would spread from one patient to another.

575. *Mr. Solomon.*] Would you say "Yes" to that also?—I should say "Yes" to both.

576. My next question is not directed to a perfect condition of affairs, which we do not hope for, but, given a fairly satisfactory hospital—a hospital as fairly hygienic as one can expect to have here—is that a state of affairs which ought to exist—that diseases should be generated in the Hospital and that patients should run an appreciable risk of infection therein?—I do not think that they ought to have an appreciable risk under proper hygienic conditions. Under good hygienic conditions I do not think that a patient should run any appreciable risk. The very best authorities say that in a hospital properly conducted the patient should run no more risk than he would do outside. I think I can quote authorities who say that. I do not think that you will find many hospitals to which that remark would apply.

577. Are the arrangements that you have spoken of, and the various defects that you have called attention to—are they defects merely in the sense that if the Hospital were perfect they would not exist?—But the Dunedin Hospital is very far from being perfect, or anything approaching perfection.

578. To what extent does it approach such a state of affairs?—Well, I have been in many hospitals in my life, but the Dunedin Hospital is the worst one I have ever been in. That is the best I can say of it.

579. Have you come across in your reading some thought of any one about a "danger zone" connected with every hospital?—So far as I am aware, it is original. Every hospital works within a certain "danger zone," that zone increasing or diminishing *pari passu* with the perfection or imperfection of its sanitation. I consider that in the Dunedin Hospital we constantly work at the very fringe of that zone. Any slight oversight or breakdown of the nursing, any want of minute attention on the part of the doctor or students, conditions of weather, &c., which are incidental to all human affairs, places the patient within that danger zone, with consequences more or less serious. That is the best definition I can give of the state of affairs in the Dunedin Hospital.

580. I now come to the question of mortality. Have you looked over Tait's book on this subject, and through the article in Holmes?—Yes.

581. You have prepared a table from it, have you not?—Yes.

582. Have you extracted from that table in Tait's book the average mortality in British hospitals in which the conditions are fairly similar to our own?—Yes; I have made my calculations from one of the tables, which I have marked in red.

583. And what is the result of your calculations?—That the average mortality in county hospitals in England situated in very much the same conditions as our own hospital is 5·4 per cent.

584. What is the average stay in the hospital?—It is 31·5 days.

585. *The Chairman.*] That is the average stay of the individual?—Yes. That is a very important point in connection with the mortality, because it determines the activity of the hospital.

586. *Mr. Chapman.*] That is, both deaths and discharges?—Quite so. Nobody ever draws a distinction.

587. *Mr. Solomon.*] In the London hospitals the death-rate is considerably higher, is it not?—Undoubtedly. In the best London hospitals you will find a very high death-rate.

588. Higher, perhaps, than in any of the others?—Undoubtedly.

589. *Mr. Chapman.*] Have you taken out the averages in these cases?—I have not.

590. *Mr. Solomon.*] Will you explain how it is that the mortality of some of the London hospitals is so high?—Holmes explains in his work—that on hospitals. He begins with the supposition that in all the London hospitals the hygienic conditions cannot but be the best. Then he goes on to explain that a most important factor in the mortality is the selection of cases, and he points out that in the best hospitals, where there are the most eminent staffs and possibly a small number of beds, and considering all the cases that congregate there, they pick out from all these the most interesting cases, which are, of course, the worst cases, and the consequence is that there is a very high death-rate.

591. Shortly put, they take the worst cases to these hospitals, and the rest go to hospitals where the hygienic conditions are better?—Yes. Holmes points out that the selection of cases is very important.

592. There are medical schools attached to these hospitals, are there not?—Yes.

593. You have already told us that you have extracted from that table those county hospitals in England in which the conditions are about equal to these in our own Hospital?—Yes. I think I have done so fairly well.

594. Does experience show that a hospital's mortality should bear any ratio to the mortality of the district?—Yes, I believe it does.

595. That is to say, the healthier a district the lower should be its hospital rate, and *vice versâ*?—Yes. Lawson Tait distinctly makes that statement.

596. In the districts of which you have been speaking, what has been the average death-rate of the district per thousand?—In the London district, of course, the tables are pretty high, though I think of late years the London death-rate has lowered somewhat. But at the time that these figures were taken London's death-rate was pretty high. The list of county hospitals to which I

have just referred is as follows: North Devon, 18; Bedford General Hospital, 20; Carlisle Infirmary, 24; German Hospital at Dalston, 20; Leamington, 20; Lincoln County, 20; Royal Free (London), 23; Salisbury General Infirmary, 20; Southampton Infirmary, 23; Worcester Infirmary, 25; York County, 23: average, 20·6.

597. Do you agree that 20·6 represents the average of the hospitals that you have named?—I accept Dr. Copeland's calculation.

598. And what is the average death-rate per thousand in the district about here?—I think it is 9 or 10.

599. Is it not more than that?—I do not think it is, but I will not be sure about it. I wanted to look it up, but I had not time.

600. It follows from that, assuming that our Hospital possesses equally favourable circumstances to those hospitals in English counties, that our death-rate should be even less than 5·4 per cent.?—Yes. I think the conditions here are much more favourable. I will tell you what happened to me shortly after I came here. There was here a patient on whom I had performed an operation that I was rather proud of. I was relating this operation to a medical *confrère* when he rather damped my ardour by saying, "Yes, Batchelor, you will find the people here very hard to kill." I found that he was quite correct. I think the people here are rather tough. We ought to have better results here from operations than anywhere else in the world.

601. How would you say that the people in the Hospital in Dunedin compared with the average—as nearly as we can get it—patient who in the ordinary course of events would go into such hospitals as you have mentioned?—I should think we get quite as good people as they do.

602. What I mean is from a healthy point of view?—I should say that the people in the Dunedin district are healthier.

603. *The Chairman.*] You are referring to people who are admitted into the hospitals?—Yes. It is a similar class of people, and I think that those who are admitted here are healthier than those who are admitted at Home.

604. You mean to say that our sick have better constitutions on the whole?—I think so.

605. *Mr. Solomon.*] And they are better nourished?—Yes.

606. The condition of poverty in which some people live would have something to do with it, would it not?—Undoubtedly.

607. We do not find the same conditions of poverty here as exist in England?—No.

608. Taking all these things into consideration, what is your opinion as to how the death-rate in Dunedin should compare with the death-rate of those English towns you have mentioned?—I cannot understand it at all. I think it ought to compare very favourably, unless there is a strong reason which I have not heard of. It should not be more than 4 or 5 per cent. I confess I cannot understand it at all.

609. Tell us what the death-rate in the Dunedin Hospital has been for the twelve months from January to December, 1888?—It was 10·49.

610. And from January to December, 1889?—It was 9·2.

611. *The Chairman.*] How were your tables prepared?—From the Inspector-General's reports. I have collected them very carefully.

612. *Mr. Solomon.*] If you eliminate the question of the unhealthy condition of the Dunedin Hospital, can you offer us any satisfactory reason of the fact that, instead of the death-rate in the Dunedin Hospital being less than 5 per cent., as you say it should be, the average rate is 10 per cent. for two years?—No. I took the tables to pieces, because the position which our Hospital occupies struck me very forcibly. After the discussion with the Trustees the idea occurred to me that there might be something which I had overlooked—some condition which I might not have taken into account.

613. Do your statistics contain any information as to the proportion of the population of Dunedin and district as compared with those living in English county hospitals—I mean, how many out of the total populations will use the hospitals? How do your statistics stand as to showing what that proportion is?—I have not taken that into account. I believe that the Charitable Aid Board have prepared a return on that point. It may be that our mortality is due to our hygienic difficulties. But there may be some other cause beyond that, because our results are terrible.

614. Do you agree with this: "We may take it for granted that no hospital ought to yield a mortality on its sick treated of 7 to 10 or 11 per cent., as is the case with so many of our existing metropolitan hospitals. A certain percentage of deaths is inevitable, but not a percentage such as this"?—Certainly. I recognise Holmes as an authority. I do not pretend to be an authority myself. I know nothing myself except what I have read recently.

615. Do you also agree with this, at page 53 of Tait: "That a small hospital can be made quite as unhealthy as one of the largest size has been often and abundantly proved. It has been shown that the causes of unusually high death-rates are almost always recognisable and removable. I am of opinion that in the case of every hospital where the death-rate is found unusually high it is incumbent on the managing body to show what the causes are which are not removable, and to remove at once those which are"?—Yes. I should agree with anything that Lawson Tait writes on that subject. I think he is about the best authority you can get about hospitals.

616. Will you tell us whether in your opinion the words which Lawson Tait uses there apply to the Dunedin Hospital?—I do indeed.

617. I mean that part of the extract wherein he says what ought to be done where the mortality is found to be "unusually high"?—Yes. Undoubtedly it applies very much indeed to our Hospital.

618. You have also prepared, I think, a table which makes a comparison between the various hospitals in New Zealand for the years 1888 and 1889?—Yes, I have.

619. I will read over the figures, and you will say if you agree with them. Please stop me if I should say anything that is incorrect: Auckland—1888, 9·37; 1889, 8·07: Wellington—1888, 6·35; 1889, 6·01: Christchurch—1888, 7·25; 1889, 7·09: Dunedin—1888, 10·49; 1889, 9·02. Are these figures correct?—Yes, according to my calculations.

620. Do you believe them to be absolutely correct?—Yes. I have checked them over several times in order to have them correct.

621. Tell us, in the first place, whether in your opinion there is anything in the circumstances of the different parts of New Zealand to afford any reason why the death-rate in the Dunedin Hospital should be considerably higher than in other places in the colony?—I do not know of any reason why it should be so. But it is a very difficult question to answer, because I do not know what is the death-rate in the other towns. I, however, have an idea in my own mind that there is very little difference between the death-rate of the different towns in New Zealand.

The Chairman: As a rule, Dunedin is lower than the other towns.

622. *Mr. Solomon.*] By the by, will you show me, in your private memorandum-book, a minute of the Trustees in reply to your paper of the 28th July? There is a table of mortality there—is there not?—Yes; but that table is for the year previous.

623. That is in July, 1889?—Surely it is not so late as that. [After referring to the book] No; it was in April.

624. The final paragraph of the Trustees' reply says, "The Trustees, in conclusion, again acknowledge the invaluable services rendered to the Hospital by the members of the honorary medical staff, past and present; and they readily accord to them a very large share of the credit for the fact that, according to the latest published official returns, the rate of mortality in the Dunedin Hospital is less than in any of the other large hospitals in New Zealand, and less than the average rate for the whole of the colony. The following is the comparative statement of the death-rate in the hospitals of New Zealand for the year 1887, compiled from the last published report of the Inspector-General of Hospitals:—

Hospitals.	Cases.	Deaths.	Percentage.
1. Auckland	901	91	10·99
Wellington	686	62	9·04
Christchurch	621	60	9·66
Dunedin	910	76	8·35
2. Napier	318	24	7·55
Greymouth	286	26	11·86
Hokitika	293	21	7·17
Timaru	225	14	6·02
3. Nine hospitals in Otago with fewer than two hundred cases	861	89	10·33
4. Twenty hospitals in other places in New Zealand having fewer than two hundred cases ...	1,630	109	6·68
Total for the colony	6,681	574	8·59

625. We may take it, I presume, that you read a paper before the Trustees, and that they had a discussion on it?—Yes. [Report of meeting handed in: Ex. xxvi.]

626. And then they passed a resolution that your paper should be referred to the medical staff for report?—Yes. I wish to explain that immediately after I met the Trustees they referred my address to the staff, who met and discussed it. The Trustees subsequently published an official memorandum which contained a considerable number of inaccuracies, which I did not reply to; but otherwise the document was very moderate. It reminded one very much of a theological discussion, in which one man takes one side and another man the other, and they do not come to any agreement at all. Subsequently—that is, the same evening—the Trustees replied individually; but they made an enormous number of misstatements, to which, however, I did not reply.

627. What I wish to make plain is this: was the first resolution which was passed a resolution to the effect that your address should be referred to the Hospital staff for their report?—Yes, that was so.

628. Then came the medical staff's memorandum on your private report, your private report, and Trustees' minute in reply to your address?—Yes.

629. That minute you will find at page 50 of your private memorandum-book. There is a great deal of it; some of it is very unsatisfactory, and some most interesting. The only paragraph to which I wish to draw your attention in the meantime is that in which the Trustees take credit to themselves for having paid a high compliment to the staff. That would have been creditable had it stopped there, but, unfortunately, it did not. They also took credit for the fact that the Hospital had been described in this way: "Its connection with the thriving and vigorous Medical School of Dunedin, gives it, in all the essentials of hospital treatment and management—an unmistakeable superiority. There is simply no comparison between it and any other hospital in the colony in this respect." We agree with that——

The Chairman: Do I understand that Dr. Batchelor disagreed with the returns?

Mr. Solomon: I wish to point out that these figures were for 1887.

The Chairman: But are they correct?

Witness: I did not verify them.

630. *Mr. Solomon:* Last year the Trustees took credit to themselves for 1887, when the death-rate for Dunedin was the lowest in New Zealand. Now, at that time the hospital death-rate for 1888 was in existence—whether or not they knew of it I do not know; but the fact remains that in 1888 the death-rate for Dunedin, instead of being the lowest, was in the percentage number a good many higher than any other town in New Zealand, and has so remained up to the present date. I notice,

by the way, that the return shows that the death-rate of Wellington is the lowest of all; next comes Christchurch, then Auckland, and, last of all, Dunedin. Do you follow me?—I do.

631. In which of the four towns of New Zealand is the hospital the newest?—Wellington Hospital is the best hospital in the colony. I have not been inside the Auckland Hospital for a good many years. It was on my return from Australia that I visited the Wellington Hospital, and I was very much struck with it. It is far and away the most complete hospital in the colony. I consider it to be the most perfect hospital in the colony.

632. We find that the death-rate in Wellington is the lowest in the colony?—Yes, it is the lowest.

633. Is that an old or a new hospital?—A new hospital.

634. Is the hospital at Christchurch a new or an old hospital?—I really cannot say; but I rather think it is partly old and partly new.

635. Have you been through it?—Yes, I have.

636. How does it compare with ours?—Most favourably.

637. Auckland Hospital is an old one, is it not?—I believe it is. I visited it ten years ago, but I have forgotten it now, so I cannot give you details.

638. Taking the hospitals at Wellington, Christchurch, and Dunedin, is it at all surprising, in your opinion, that the proportion of the death-rates for these towns should be as we find them, considering the condition of the hospitals?—No. It is only what you would expect, and bears out the experience of every author.

639. You would, then, expect the death-rate of Wellington to be the lowest, then Christchurch, and then Dunedin?—Yes.

640. Turn to page 50 of your scrap-book. Do you remember that minute of the Trustees?—I do.

641. There is a death-rate there given by the Trustees?—Yes.

642. Can you say whether it is correct or not? Have you any reason to doubt it?—Well, I should like to point out the absurdity of comparing the large and small hospitals, and mixing them all together.

643. *The Chairman.*] What do they say was the death-rate in 1887?—They say at Auckland, 10·99; Wellington, 9·04; Christchurch, 9·66; Dunedin, 8·35. There is something in connection with this return that I should like to mention. The Trustees have taken a wise step in making the institution a real hospital, and not a benevolent institution, as it used to be. In 1887 a lot of chronics who had lived in the Hospital for years were weeded out and were sent to the Benevolent Asylum. That probably accounts for the difference which has occurred in the death-rate.

644. The presence of chronic cases had the effect of increasing the average death-rate?—It had.

645. Then, the proper thing, as I understand it, is, that where you have good conditions the death-rate is low, but the average state is proportionately higher?—No, you ought to have a comparatively low state, because in a well-managed hospital they should show good results.

646. As affairs are conducted in the Dunedin Hospital at present, can a fair criterion be formed of the death-rate as taken out here, as compared with that of county hospitals in England?—I do not understand you.

647. You have just told us that in 1887 a large number of chronic cases were in this Hospital, and that they have since been transferred to the Benevolent Institution. Would not those chronic cases account for the low condition of the death-rate then?—Yes.

648. I now come to the last point. Have you figures giving the average attendance in the Hospital?—I have.

649. Will you tell us about the average number of patients who were treated in the Dunedin Hospital in the years 1888 and 1889?—I had better take them during the same time, from January to December. From January to December of 1888 there were 972 patients.

650. And the duration?—I can only give you from a different table, which is compiled from March, 1888, to March, 1889.

651. *Mr. Solomon.*] And in 1889 what was the number?—Nine hundred and fifty-six.

652. So that in Dunedin during the year 1888 there were as nearly as possible a hundred deaths. We will assume that there were approximately the same number of people in the other hospitals we have been referring to. The proportion of deaths in Wellington would be sixty; in Christchurch, seventy; and in Auckland, ninety. I notice that you give a difference of thirty deaths between Dunedin and Christchurch, and of forty between Dunedin and Wellington. In your opinion, would a satisfactory state of hygiene—by which I mean as satisfactory a state as we could reasonably expect—in the Dunedin Hospital have saved any, and, if so, what proportion, of those lives?—No doubt it would have saved a great number of lives, but I should be sorry to say what proportion.

653. *The Chairman.*] Would you say most of them?—But I can hardly conceive that there cannot be some other cause, because there is such a terrible difference.

654. *Mr. Solomon.*] You say that with a more satisfactory hygienic condition you have no doubt that many of these lives might have been saved?—There can be no doubt whatever about that.

655. *The Chairman.*] Do I understand you to say that these results could have been avoided?—I think I may safely say that.

656. *Mr. Solomon.*] I now come to your general experience in the Dunedin Hospital. In the first place, in your opinion, in any properly sanitary condition of a hospital, should erysipelas break out in that hospital?—No.

657. Is or is not erysipelas a form of septic poisoning?—It is generally recognised as a form of septic poisoning by the best authorities.

658. Is concentration, or, rather, is undue concentration of these organisms we have been speaking about in the atmosphere sufficient to produce it?—I really would not answer very much about erysipelas. It is a very difficult subject. I think Dr. Roberts, our pathologist, will give you more satisfactory data than I can.

659. At any rate, it should not arise?

660. In your experience of the Dunedin Hospital has erysipelas arisen there from time to time?—It has.

661. Can you remember the number of cases in which it has arisen?—Yes.

662. Can you tell us them?—I should like to confine myself to my own practice.

663. I do not want to know about anybody else's case. Let each other medical gentleman look after his own cases?—I remember two distinct cases, though it may be quite possible that there might be more; if so, I have forgotten them. But I can speak positively of two cases that occurred in my own practice. One was that of a man on the right-hand side of the Hospital as I went in, No. 1 ward, who came in with a urinary disorder, and he took erysipelas in a very severe form indeed. We had to turn him out of the ward, and to put him somewhere in the garden—it was summer time—partially as a measure of safety for the whole of the patients in that ward. But he died.

664. From what?—I should think from the combined effects of the disease and erysipelas. I had another case which I also remember distinctly. It was that of a young girl who came into the Hospital suffering from a small labial cyst. I remember her case for this reason: I had promised her that she should go out again in a very short time. But she took erysipelas, and instead of leaving the Hospital in ten days, as she ought to have done, she remained—I would not like to say how much—in the Hospital very much longer than I had anticipated. I very distinctly remember those two cases.

665. In the light of your previous and subsequent experience, can you tell us whether there was anything in that girl's condition that could have reasonably led you to anticipate having to meet with such results?—No. You would not be surprised in the case of an unhealthy wound if erysipelas travelled from it to another patient in the ward, especially in the present condition of the ward, but that it should have broken out in the case of that girl surprised me very much. It did not strike me so much then as it does now. Now it simply corroborates my views on the unsatisfactory condition of the Hospital.

666. Would you say that it was surprising, assuming that the hygienic condition of the Hospital was then as unsatisfactory as it is at present?—Not at all surprising. I do not think I expressed myself so clearly in my last answer as I should have done. What I meant to say was that erysipelas ought not to have occurred in the case of the girl at all; but in the case of the man, with an unhealthy wound from urine soaking into it, one is not so much surprised.

667. Can you, or any other medical man, state positively how this erysipelas arose?—No.

668. This is, I suppose, one of the many illustrations you have told us of that, all combined, induced you to form the opinion that you have done?—Yes. A number of cases have occurred over a number of years, and these cases have made my suspicions become convictions.

669. At or about the week in which you wrote your letter of complaint to the Trustees—that is, July, 1890—how many cases of erysipelas were there in the Dunedin Hospital at that time which had arisen in the Hospital?—"At or about," you say?

670. Yes. I do not fix you to any date?—I have prepared a diary of the events as they have occurred.

671. How many cases were there at about that time. I mean cases of erysipelas that had arisen within the Hospital?—At about that time Mrs. Snowden had died—about the 22nd July. Two cases of erysipelas had occurred in the children's ward on the 25th July. On the 30th May two other cases of erysipelas broke out, one case being in No. 1 ward and the other in No. 3 ward. That makes four certain cases that had occurred.

672. *The Chairman.*] These had arisen in the Hospital?—Yes, in the different wards at about that period.

673. *Mr. Solomon.*] What was the result in those cases. Were there any deaths?—Yes; the man in No. 3 ward died. His name was J——. I believe that he had heart-disease, and I understand that he died from the combined effects of erysipelas and heart-disease.

674. Did any case of erysipelas occur in No. 7 ward?—In that ward a rather curious occurrence took place. My patient, Mrs. S——, died on Tuesday, the 22nd July, and on the Sunday following a Miss W——, who was in the next bed to my patient, developed erysipelas. At all events, I was told so by the doctor who was attending her.

675. *The Chairman.*] That would be on the 29th?—No; it was on the 27th that she developed what I was told at the time was erysipelas.

676. This case you do not include in those you have cited?—No; I have purposely kept it out. I saw the case. It was taken out of the ward and put into a separate ward. It was evidently being treated for erysipelas. Iron had been administered internally, and boracic acid dusted over the part affected. I simply looked at it, but did not remove the powder.

677. Who was in attendance on that case?—Dr. Jeffcoat, who told me when he took me to the bed that it was a case of erysipelas.

678. I find this paragraph in Erichsen at page 15: "The frequency of the occurrence of erysipelas in an institution may be taken as an indication of neglect of its sanitary arrangements." In your opinion, do those remarks apply to the state of affairs with regard to erysipelas alone which existed in the Dunedin Hospital during the week you have been speaking about?—Yes.

679. Do you think that the presence of all these cases which you have mentioned—remembering that there are a hundred beds in the institution—is consistent with a fair state of hygiene?—No I do not.

680. And that cause you think sufficient to account for the breaking-out of erysipelas in different parts of the Hospital?—Yes. There were two cases in the chidren's ward, which is excessively bad. There was one case in No. 1 ward, another in No. 3 ward, and a supposed case in No. 7 ward.

681. I will put it in this way, as you have scarcely answered my question: Was there anything in the general condition of affairs in the Dunedin Hospital to account for that breaking-out of erysipelas?—Yes, there was.

682. What was the state of the weather at this time?—It was exceedingly cold.

683. And that is why the windows would have been shut up?—Yes.

684. Then you would expect these cases to occur, would you, in a hospital having such sanitary defects as ours?—If you will look up the cases, you will find that a large proportion have occurred during the cold weather.

685. But was there anything in the air outside—any condition of unhealthiness in the air outside—which would account for the presence of the trouble inside the Hospital?—Nothing.

686. *The Chairman.*] Was there any epidemic about at that time?—There was no epidemic about at all.

687. *Mr. Solomon.*] That was just what I wanted to get out from you. Is it a proper thing for typhoid to arise in a hospital?—It is not a proper thing. I should say that it is a very improper thing.

688. But there are a large number of typhoid cases treated in that Hospital, are there not?—Whenever there is typhoid in London there is typhoid in Guy's.

689. If the sanitary conditions of a hospital are unsatisfactory would it then be surprising that a nurse should get typhoid?—No. If the sanitary conditions were bad it is quite possible for a nurse to take typhoid—that is, if there were some grave defects in the sanitary arrangements.

690. Then, may I say that the insanitary condition of a hospital affects the possibility or probability of infection?—Yes.

691. Do you know of any case within your own experience in which a nurse has contracted typhoid within the Dunedin Hospital?—Yes, I know of one case personally—from my own observation—and I have heard of other cases, but I want to talk only of what came under my own observation. There was a nurse in Dunedin Hospital whom I was asked to see in consultation with Dr. Barclay. She was suffering, in my opinion, from typhoid fever.

692. Was Dr. Barclay of the same opinion as yourself?—I do not know what his opinion was at the time, but after the case had run its course he was quite convinced that I was quite correct in the opinion I had formed. I think there was a little doubt in Dr. Barclay's mind at the time. One medical man who saw it was inclined to look on it as a case of tubercular peritonitis, but that view turned out to be incorrect.

693. Do you know of typhoid having occurred in any other hospital—in Guy's, London, for instance?—Dr. Wilks, the eminent physician of Guy's Hospital, speaking to Dr. Murchison, says that "he has never known a nurse in Guy's Hospital contract typhoid fever" (Quain's "Dictionary of Medicine," vol. i.). Murchison, the authority on fevers, says, "Hospital experience lends little support to the doctrine of contagion. It is universally admitted to be a very rare occurrence for nurses or medical attendants of hospitals to contract typhoid fever from the sick under their care."

694. Is typhoid treated at Guy's?—Yes; it used to be treated in an ordinary medical ward, without any special precautions.

695. Was this case contracted in the Hospital?—Yes. I cannot give you the nurse's name, but she was in No. 4 ward at the time. There was a little difference about the case at the time, and when this inquiry was about to commence I wrote to Dr. Barclay—within the last week or two—asking him what he had thought of the case. I did not say a word about the case, I merely asked his opinion, and he replied to me. I have the letter in my possession now. I see that the name of the nurse was Stewart. Dr. Barclay says that it was some time in March or April of last year. [Letter handed in.] I may say that Dr. Barclay knew more of the particulars of the case; I simply saw the case in consultation with him. I did not make any particular inquiries, but I knew that she had been nursing in that ward.

696. I suppose you do not pretend to say positively in this case, any more than in any other, that this woman got typhoid through the insanitary condition of the ward?—I would not say positively.

697. But the fact that the condition of the Hospital is insanitary renders it more probable that she did, does it not?—It confirms the suspicions that I had formed about the Hospital.

699. I understand you to say that the presence of this case does not prove positively that it was due to the insanitary state of the ward?—It does not.

700. But it is another illustration which goes to confirm your previously-entertained suspicions?—Quite so.

701. I now come to the question of suppuration of the wounds. We will first of all take the case of William M——, who was admitted into the Hospital on the 21st August, 1883.

The Chairman: Is this a case within the doctor's own experience.

Mr. Solomon: Yes. We have three cases, the first being that of William M——, who was admitted to the Hospital suffering from an injury to his knee-joint.

Witness: You must be careful how you speak of injury to the knee. In this case it was an injury arising from a strain.

702. *Mr. Solomon.*] I shall deal first of all with M——'s case, and come to the others by-and-by. I wish to ask you in such a case as this, is the hygienic condition of the Hospital of importance?—Yes; it has a very important bearing on this case, I should say.

703. Can you classify these cases, or is there anything particular about them which would impress them upon you?—They were all septic cases, all eventuating in septic mischief.

704. There is a liability to suppuration in these cases, is there not, if the conditions are

unfavourable?—Undoubtedly. Where there is any strain or injury about the knee-joint it is a very rare thing to find inflammation leading to rapid suppuration. We must take each individual case at a time, and, if you do not mind, I prefer to take M——'s case first.

705. Will you please take in your hand the hospital note-book, and turn to page 4, and read me the entry you have there?—"William M——, *ætat* 21; unmarried; occupation, labourer; native place, Green Island. Present residence, East Taieri. Admitted August 21, 1883, to No. 1 ward. Came in suffering from a swollen right knee, the swelling following the outline of the joint-cavity. Pain was felt at each side of the upper end of the tibia. Six weeks before coming in this patient had jumped down from a straw-stack and hurt his knee, it being painful at the time. The pain went away, but after three days it returned, especially at night. He continued working for a fortnight, when he had to give up work. At this time the knee was fomented for one day; then blistered twice on each side; also painted with iodine. As soon as he came in a long splint was put on, and hot fomentations applied continuously till September 24. Along with this oleate of mercury and morphia was used: Internally, ℞ potass. iodid., ʒi.; sip. ferri iod., ʒiv.; siq., ʒi., t.d.s: also, to give sleep, ℞ potass. bromide, ʒp.; aq. ad., ʒp. Haustus to be taken at bedtime. On September 24 Scott's dressing was applied for a fortnight, and the swelling decreased about half an inch. On October 8 Scott's dressing was again applied for a fortnight, but there was no decrease. Hot fomentations, along with oleate of mercury and morphia, were again applied. On October 27 a consultation was called, when it was decided to excise the joint. On October 31 the left knee-joint was excised with antiseptic precautions. A curved incision was made around the lower border of the patella, from the inside to the outside of the joint, which was found to be full of gelatinous material in which there occurred several abscesses. On opening these thick flaky pus escaped. The patella was then removed, and a great quantity of gelatinous and cheesy material cleaned out. The cavity was so sacculated that in addition to the above incision another incision was made 4in. long, upwards, in line with the shaft of the femur in front, in order to clear out the diseased tissue thoroughly. The cartilages were all eroded off the lower end of the femur, upper end of the tibia, off the patella; and the inter-articular cartilages were also destroyed. The femur and tibia were also affected. The joint-cavity was then thoroughly cleaned out of all gelatinous and cheesy material. Three drainage-tubes were then put in, and the wound sewn up with silver and horse-hair sutures. It was then dressed with oiled silk, carbolised gauze, and tow, and placed in a long side splint, and a large back splint for rest and extension, and kept raised. November 3, temperature 99·8°; pulse 132. November 9, temperature 100·6°, pulse 96. The wound was dressed antiseptically on November 2; on November 6, when the silver sutures were removed; on November 10, when there was not much discharge, and the parts had nearly all united and were looking very well. January 16, 1884: Limb amputated at junction of middle and lower thirds of femur. Patient was under ether on the previous day, when the wound was found to be in such a state that amputation of limb was deemed necessary. Great accumulation of pus and gelatinous material was found in popliteal space. After amputation flap was fastened by silver sutures, and antiseptic dressing was then applied, stump being put in splint, and elevated on slip-rest."

705A. Taking the whole of these circumstances into consideration, was there any septic poisoning arising after the man had been admitted into the hospital?—I should like to say that I have never read this case through since the time of my report to the Trustees. It struck me at the time, but I had forgotten it since. It, however, strikes me very forcibly now, as the case of a young man who was getting almost well, but from some cause or another it breaks down, and suppuration occurs, requiring amputation, which is a very unusual state of affairs.

706. Have you met with a similar condition of affairs outside to what you found in the Dunedin Hospital?—Never. Here was a young man with a wound in the knee after an excision, that was healed up, or nearly so; then there is a blank or gap in the hospital report, and the next entry about him is that amputation has to be performed.

707. *The Chairman.*] In the mischief that made amputation necessary you include septic poisoning?—Yes. I might explain why I think this case's history unusual and peculiar. In the first place the boy got an injury to one of his knees, which was being treated very well. It is very unusual to get suppuration in such a case. In these cases it does not occur so rapidly as in the case of a long-neglected strain that had been walked about upon repeatedly or had been neglected. This appears to have been a very rapid course indeed. The usual treatment was adopted from the very first. There was nothing bad about the case when it came into the Hospital. I think that the whole bearings of the case are unusual.

708. Would you expect the septic poisoning to have taken effect before the operation for excision?—There must, I think, have been some septic conditions in the case when excising the joint.

709. Did that arise before the operation?—I suppose it must have occurred—that it must have been in the joint. The suppuration that occurred was excessively rapid; and that is an extremely unusual thing to occur spontaneously. I have never seen it in my practice.

710. Do you consider that the symptoms after excision were due to septic poisoning?—I think they were. In the first place, I look on this case as a very unusual one, inasmuch as very shortly after the injury the joint takes on disease and breaks down when we were expecting to find good results. It is an unusual history altogether. Suppuration in the joint is a long process. The history of this case, as detailed in this book, is simply extraordinary, because suppuration itself would not be expected to occur. After having properly treated an excision of the knee-joint, if the conditions all around were healthy, I should say, as one who holds the views about the Hospital which I do, that this case seems to me to very much strengthen those views.

711. *Mr. Solomon.*] I will put it to you, then, in the words that are used in my opening to the Commissioners, and you will please tell me whether they are correct. I said there that "surgeons in the Hospital have found results arising from their operations which they had no reason to expect

would arise, and which it is almost impossible to account for upon the assumption that the Hospital is sanitary, but which are not surprising if we are to assume that the sanitary condition is imperfect." Do those remarks apply to this case?—They do, very strongly indeed.

712. You say that in this case the results are surprising to you: may I say, approximately, that they would not be what you as a practitioner would expect, assuming the Hospital to be in a proper state of hygiene?—Yes, I say that distinctly. As I have said, the case is a very unusual one, and I should not expect such a thing to occur in a proper state of hygiene.

713. Assuming the atmosphere in the Hospital to be of such a character as your experience up to the present day has proved it to be, is the result which you found in this man's case at all surprising?—Not at all.

714. The result which you found could be produced, I suppose, by a man living in a bad atmosphere?—Yes, I should say that it could be so produced. It is the kind of case that one cannot enter upon all its details. I might, in fact, write a long lecture on this case. My main points are, suppuration occurring so soon after the boy had been treated in the orthodox manner, and after the excision and taking all antiseptic precautions and dressing it well it breaks down again, requiring amputation of the limb.

715. Would that case of itself any more than any other case be sufficient to enable you to say that the Hospital was insanitary?—It would not be of itself.

716. I will now ask you to turn to the case of Charles G—— (Hospital Book, p. 8)?—Yes, this is another case which came into the Hospital of injury to the knee, which was treated in the usual way, and in which suppuration set in: "Charles G——: aged 15; occupation, at school; native place, London. Present residence, Opoho. Admitted into Ward 2 on September 10, suffering from a sore knee. History: three weeks before he came in he was knocked flat down on his back with his legs under him. When he got up it felt a little sore, and he limped about with it for a while, but it soon got better; and about a fortnight after it began to swell. But at first there was no pain, and he could walk all right. A week after it began to get sore again, and he came into the Hospital. Treatment: for two weeks fomentation and back splint. ℞ Sapo moltes; sp. vini pectif; then ℞ extr. belladon. ʒii.; sp. lavender, ʒii.; glycerine ʒiv. Apply twice a day. Apply as directed. Then, about 18/11/83 there was an abscess at the head of the fibula. It was decided to open this and to open into the knee-joint. The abscess was opened at 20/11/83, and was found to communicate with the knee-joint, so the joint was opened, when a lot of gelatinous matter was found in it——"

717. *The Chairman.*] Was this before any operation for opening the joint?—Yes. "— but the cartilage seemed quite healthy, so all the unhealthy tissue was scraped away, but the articular extremities were left untouched. It was dressed antiseptically, and put up in a well-padded back splint, with a foot-piece at right angles and alongside, outside, attached to foot-piece. A consultation was held, and it was deemed necessary to amputate the limb, as there were no signs of healing in front, and as there were found abscesses opening through the popliteal space."

718. How long was that after the excision?—On the 20th January, I think.

719. And when was amputation decided on?—On the 5th February "a consultation was held, and it was deemed necessary to amputate the limb," and on the 6th February "the limb was amputated at the lower third of the femur by circular cut."

720. *Mr. Solomon.*] I do not think you need trouble us with further details. He was discharged on the 22nd April, was he not?—Yes.

721. *The Chairman.*] What was the final result?—I think I had better read this through.

722. But what was the final result?—He was discharged cured.

723. In good health?—Yes. I wish to say that the same remarks apply to this case as to the other: you do not expect prolonged illness, or suppuration to occur pretty freely. In each case proper precautions were taken, yet suppuration afterwards occurred, necessitating amputation in both cases. I may say as a rule that boys, especially lads like this one, and at his age, who are treated for excision, do very well when carefully treated.

724. *Mr. Solomon.*] I see that boy was seven months in the Hospital. Now, the result is that he came into the Hospital with a comparatively slight injury—so far as one could judge, it was a slight injury—at all events, such an injury that you might have expected to have recovered without resorting to excising of the knee-joint?—We never expected to have to go the length of excision.

725. However, you had to excise it, and then he got rapidly better, did he not?—Yes, but we did not excise; we scraped the joint. We scrape the joint out at excision.

726. And the net result is this: that the boy was for seven months in the Hospital, and then lost his leg?—Yes; being young boys, these cases do decidedly better than old wounds.

727. In your outside practice have you met with such a case?—No.

728. Is that result, assuming a fair condition of hygiene, surprising to you?—Yes, it is indeed. With a fair condition of hygiene I should not expect such a thing to occur.

729. Is such a fair condition of hygiene at present existent in the Dunedin Hospital?—No, I do not think it is.

730. We will now take the case of Thomas P——. By the way, this is the case, is it not, to which you referred in your memorandum to the Trustees as being due to "hospitalism"? I do not understand that phrase: will you kindly tell us what you mean by it?—I meant chronic pyæmia.

731. Contracted where?—In the Hospital, I think. "Thomas P——, aged 31, peritonitis; occupation, sailor; parents, both healthy when living; has three brothers and two sisters, all healthy; patient had typhoid fever 15 years ago." That may have had a little bearing on the case. "About two years ago felt pain on under and back part of the thigh. This became very painful, and the pain affected the knee. Severe pains all around the knee-cap for two or three weeks; could not walk, and had no appetite. Came to Hospital on 13th of March, 1883. Was operated on about a week after, and the appetite improved, but knee continued painful and was much swelled, although healed."

732. *The Chairman.*] Was the operation excision?—No. Here it is: "One incision in the thigh still suppurated. This went on for five months. Consultation *re* bone-disease. Leg amputated. Patient kept his bed for ten weeks, and then went out on crutches (which hurt his arm). Stump of leg, discharging matter, was twice opened, and pieces of bone removed, and it then healed up. Crutches hurting arm; the pain occurred in the shoulder and collar-bone. This was about the 1st June, 1884. Was treated for it. Found lump and swelling on back of shoulder, and made incisions. This was kept open for some time with drainage-tube, and the discharge kept up till tube was removed, when it healed up. Now severe pain came on in arm and shoulder, and the arm swelled up and got bad again, and hardened, and was again incised. Now pains are all gone." I am now speaking from memory, but I believe there was an incision made on either side of the knee-joint.

733. Down on to the bone?—Yes.

734. You mean that there were secondary abscesses?—Evidently. "During the beginning of May patient complained of diarrhœa, and was ordered: P. tr. opii, ʒss.; bismuth sub., ʒi.; mucil. ac., ʒi.; tr. capsici, ♈i.; pulv. cret. arom., ʒi.; mist. cret. ad, ʒiii. One tablespoon for a dose, to be given as directed. June 25th: P. hyd. bectelor, gr.$\frac{1}{16}$; ext. gent. ad, gr.iv.; h. pulv., milte, xxiv.; t.d.s. During the commencement of June patient complained of pain on the outside of right leg, just above the condyle of the femur. There was swelling and a brawny feeling. Fomentations allayed the pain for some time, but it got worse, and on the 30th of June it was opened. A slight discharge of pus and dead tissue was got out, and the abscess was found to extend far in beneath the bone. It was syringed out with carbolic acid and drainage-tube inserted, and carbolic oil on lint put over the place. July 1st: Ext. opii, gr.$\frac{1}{2}$; ft. pil. melta. One when in pain. The wound was afterwards dressed in the same manner as above, a back splint having been applied. July 8: Discharge less, patient feels somewhat better, wound looks well. August 17: Sinus at outside of the knee is closed, though the skin around is ulcerated from the irritation of ung. iod. formi. Dressed it with ung. zinci." I do not think that P—— was really under my care all the time; he was only a portion of the time. When I left the ward he was transferred to somebody else. He came in and out of the Hospital while this case was going on. This is a rather typical case of chronic pyæmia.

735. Will you please turn to page 28 of that book?—The case goes on at page 28, but I do not think I need say any more about it. I really do not know much about the case beyond that P—— came to me at first, and that I attended him for a time. I made incisions and amputated the leg. I left the ward, and he was put under the charge of another surgeon. P—— was in the Hospital several times.

736. That was evidently a very severe case. What effect would the surroundings have on such a case as that?—I think in a case like this the surroundings induced chronic pyæmia. I may say this is very rare indeed in practice, and Sir James Paget, the eminent surgeon, mentions very few cases that he has seen in the course of his very extensive practice.

737. But you have not answered my question yet. What effect would the surroundings of our Hospital have on such a case?—They would be a very important factor in producing such conditions.

738. Then you say that the surroundings of our Hospital would, in a case like this, have an important effect in producing the conditions which you found?—Certainly.

739. The next case is that of B——?—I have not got the man's Christian name, but it can be obtained from the Hospital books. I do not know much about it, and I do not mention it, because it was under me for only a very short time. Dr. Maunsell really attended to it, and, as we all know, he is very strict indeed with his precautions, and is a splendid surgeon. This case was treated by him, and very shortly afterwards suppuration occurred, and finally the man lost his leg. But Dr. Maunsell will tell you more about this case.

740. *Mr. Solomon.*] The result which arose was unexpected, was it not?—I remember this case because in my report to the Trustees I spoke about men going out of the institution with wooden legs, and I was rather attacked for making that statement, and I remember that I brought this case forward in proof of my statement.

741. Under healthy conditions, I understand you to say that those results would be unexpected?—I should say that they were unexpected. I will not speak so positively about this case as I do about the others, because I only took B—— for a short time while Dr. Maunsell was away.

TUESDAY, 26TH AUGUST, 1890.

Dr. BATCHELOR'S examination continued.

742. *Mr. Solomon.*] When we left off the other day we were entering on Joseph B——'s case?—That was a compound fracture of the leg—a fracture caused by an accident. He was treated by Dr. Maunsell, with strict antiseptic precautions. Dr. Maunsell had to leave town for a few days, and I took charge of his patient during his absence. Immediately I took charge of him I found that suppuration had set in about the seat of the fracture, and that at Dr. Maunsell's primary operation, at the time of injury, he had lost some bone. Eventually this man had to have his leg taken off. I cited this case in corroboration of my argument before the Trustees about men being more likely to go out of the Hospital with wooden legs in consequence of the state of the wards. I remember that I made some very strong remarks.

743. *The Chairman.*] Was it a case of blood-poisoning?—No; there had been previous suppuration. There is nothing very striking in that; but it bore out the remark I made, and to which I have just referred. Perhaps I might be allowed to turn to my private report.

744. To see what?—What I said was that "It is impossible to say that the same results may not have ensued under any circumstances; but, admitting that the ward in which it occurred is not in a satisfactory sanitary condition, as I believe every member of the staff does admit, it follows, as a matter of necessity, that this man's chance of recovery with a sound limb must have been materially decreased by the nature of his surroundings."

745. You put it down as a compound fracture, leading to suppuration?—Due to hospital influences. I certainly think that that was an important feature.

746. *Mr. Solomon.*] It had suppurating tendency?—Yes.

747. Which would be assisted by impure atmosphere?—Undoubtedly it would be assisted by it.

748. Now, with regard to the cases of William M—— and C. G——, —the two men who had injured knee-joints—in the case of Murdoch suppuration taking place six weeks after admission; in the case of G——, who was admitted three weeks previously, and rapidly got worse: have you, in your private practice, had many cases similar to these?—I have had many cases of simple injury to the knee—I should say fifty or sixty such cases—in the course of my private practice.

749. I ask you again have you had any cases of a similar description to these in your private practice?—In cases of this kind in my private practice the patients have all got on well with rest and simple treatment; but here in the Hospital these two cases quickly suppurated, and went to the bad. I have never seen anything like that in my private practice.

750. In your private practice have you met with any cases in which the results were similar to these two?—Never. I have seen suppuration after prolonged inflammation and after a recurrence of synovitis, but not in the striking manner of these two cases.

751. Now, I want you to tell us about Mrs. E——'s case?—I do not wish to say too much about that case. The Commissioners have seen the room in which she was. She was removed on account of the noise in the vicinity.

752. The only point I wish to establish is this: in that case it was a severe operation, was it not?—Yes.

753. I see by your notes that she was a very nervous woman?—She was.

754. Was there any means or any convenience for keeping that patient in the Hospital with safety?—No means.

755. You saw that the place was unsafe, and sent her home?—Yes.

756. *The Chairman.*] Was she sent out of the Hospital too soon?—Yes. Twelve days after a severe abdominal operation was, I think, too soon.

757. Did she suffer in consequence?—No; so far as I know she is none the worse for it.

758. *Mr. Solomon.*] The next case I come to is that of Sophia M—— ?—Yes. With regard to that I dare say that I shall have a good deal to say.

759. Tell me shortly what was the matter in her case?—I do not think I can do it in that way. It is a test case, and it is very important to trace the chain of events which connect that case with Mrs. S——'s case. The link which connects them I have discovered only recently.

760. In the meantime we must go on in my own way?—Very well, I will take your line.

761. Will you now turn to the page in your book, and tell us at what date she was admitted?

762. *The Chairman.*] You were asked what was the nature of her case. That has not been answered yet?—She was suffering from an ovarian tumour.

763. *Mr. Solomon.*] When was she admitted to the Hospital?—On the 20th July.

764. *The Chairman.*] This year or last year?—No; it was several years ago—1886. It was a case that I reported to the Trustees.

765. *Mr. Solomon.*] You say that she was suffering from a tumour in the ovary?—She was.

766. Was an operation necessary?—It was.

767. An operation for the removal of this tumour?—Yes.

768. How long was she in the Hospital before you operated on her?—Nine days.

769. Where was she lying during that time?—She was lying at first in the back ward, but I am not sure whether the numbers were changed; it was No. 8 ward, I think.

770. *The Chairman.*] That is the one which is occupied now?—Yes. In consequence of there being erysipelas in that ward she was transferred to No. 7 ward, which is a front ward, and from No. 7 she was taken to the operating-room—the old operating-room—on the 29th.

771. *Mr. Solomon.*] You have already described the operation of ovariotomy: I would merely ask you now whether the operation was successful?—Do you mean the operation itself?

772. Yes?—It was uncommonly successful. The operation was a simple one—one of the simplest ovariotomy operations I ever performed in my life—so much so that a doctor remarked to me after the operation, "Batchelor, you are a lucky fellow; you are always getting nice cases like that."

773. Did you carefully examine this patient, and as a rule do you carefully examine your patients, with the object of ascertaining whether she was in a fit condition to be operated on?—Yes, that is a very important point. I had the usual consultation in this case, and several medical men were present at it. Now, there is a very bad plan in this Hospital, and I would draw attention to it here, because I think it is a great injustice to the patients. In these cases the specialist, who is supposed to have some special knowledge of his subject, holds a consultation with the whole staff. The staff come in for the examination, and each one of them can examine the patient internally. On this particular occasion, when the examination of this patient was made, one gentleman for whom I have the greatest respect, but who had had very little practical experience up to that time, evidently had——

774. You must really excuse me, doctor. In the meantime we must go on my way, and you will please answer my questions. I wish to know whether, before this operation was performed, you made a careful examination of the patient to see if she was in a fit condition to be operated on?—I made very careful and repeated examinations, as I always do.

775. Was there anything in the condition of this patient from which you could reasonably anticipate that septic trouble would follow the operation?—No, I think not.

776. Was there anything in this patient's condition which would lead you reasonably to expect septic trouble would follow—that any misadventure would arise?—No, I think not. There is one point which I afterwards drew attention to and made a note of. This woman had been confined thirty-seven days previously. I thought at the time that the operation had possibly been undertaken too soon after delivery.

777. What happened to the patient after the operation?—Three hours after the operation she had a severe rigour, and her temperature ran up. She complained of symptoms that made me diagnose endometritis.

778. That is inflammation of the inner walls of the womb, is it not?—Yes—of the inner coating of the womb.

779. *The Chairman.*] What I understand is this: This case was operated on, the operation being simple and successful, yet three hours afterwards septic poisoning set in?—Yes, and it is the septic symptoms which I regard as important.

780. *Mr. Solomon.*] Did you take any steps to cope with that septic poisoning?—I did.

781. Were you successful or unsuccessful?—I was in a measure successful. I opened up the womb, washed it out– a very unusual proceeding after an abdominal section; but I recognised the complication.

782. *The Chairman.*] Then a second operation was required?—I dilated the mouth of the womb, as I was frightened of mischief extending to the peritoneum.

783. The septic poisoning had increased, had it not?—It had increased.

784. Rapidly or gradually?—She seemed somewhat improved after that dilatation, but peritonitis soon set in. I really do not know whether there was a real improvement or not—there may have been—but on the next day she got very much worse.

785. That was on the sixth day?—No, on the next day. The septic mischief had extended from the uterus along the tube into the peritoneal cavity. That appears by my clinical notes made at the time.

786. When did peritonitis set in?—On the Saturday.

787. *Mr. Solomon.*] And the patient ultimately died of septic peritonitis, did she not?—She died on the Sunday of septic peritonitis.

788. Which is inflammation of the peritoneum?—Yes.

789. I am not leading you in saying that the unfavourable cause in her case was that the septic trouble spread along the fallopian tube into the peritoneum?—No. There was a very grave difficulty in her case, and was a thing that I never could account for.

790. What is your theory now?—My theory now is that she died from septic peritonitis, from an extension along the fallopian tube.

791. May I put it in this way: that the septic trouble, which arose in the uterus, spread into the fallopian tube, and extended to the peritoneum?—That is quite right, but that was not the theory I held before.

792. We need not trouble any more about that in the meantime, but that is your idea of the matter now?—Yes.

793. And would that result, in your opinion, be surprising, if we are to assume that the conditions under which that woman was treated were favourable?—It would be very surprising, if the conditions were favourable.

794. In all your experience in practice in Dunedin outside of the Hospital have you ever had such a result arising?—Never.

795. Are such unhealthy atmospheric conditions as you have described as being existent in the Hospital apt to produce results such as you have spoken of here?—They are.

796. Is the result you found surprising under the conditions which you know to exist in the Dunedin Hospital?—No; it is not. She died in No. 4 ward.

797. *The Chairman.*] Was she never taken back to No. 7 ward?—No. She was first put in the downstairs ward—No. 4, I think it was; there was another abdominal case in there at the time, and was doing well—but when my patient began to develop septic symptoms I had her removed to a wooden shed at the back.

798. Where there were chronic cases?—Yes.

799. Then she died in a chronic ward?—Yes; but the ward was empty at the time. A point in connection with this case I should like to say a few words about now. At the consultation some days before operation, several medical men made an examination of my patient. One gentleman seemed to be doubtful of the diagnosis, thinking it possibly a fibroid tumour. He passed the sound, as I thought, clumsily, and bleeding ensued. I think this proceeding was unwise, dangerous, and quite unjustifiable, and I complained afterwards about it. I do not think that he recognised the risk.

Mr. Chapman submitted that this was not evidence.

The Chairman: Not unless Dr. Batchelor is prepared to say that any mischief resulted from the passing of this sound. But then it contradicts his previous statement that the patient was in a good condition.

Witness: I think that the passage of a sound—especially when accompanied by blood—indicates that there has been abrasion of the surface.

800. *The Chairman.*] Was this operation conducted in the new operating-room?—No; but it was performed with strict antiseptic precautions, with the spray going continually.

801. *Mr. Solomon.*] The next case to which I wish to draw your attention is that of Mrs. T——. You have already told us that you wrote a letter to the Trustees about her?—I did.

802. It is not necessary to go into lengthy details, but will you give us shortly the circumstances of her case?—They are expressed very concisely in that letter.

803. Before I go on with Mrs. T——'s case, I would ask you two questions about Mrs. M——. Do you pretend to say positively that her death was absolutely caused by the unhealthy condition of the ward?—I will not say positively that it was caused by the unhealthy condition of the ward.

804. Was her chance of recovery diminished?—Yes.

805. Is your experience of her case consistent with death caused by unhealthy hospital conditions?—Yes; it is quite consistent with death caused by insanitary conditions.

806. Now as to Mrs. T——: You will please listen to me while I read this letter, and if there is anything wrong in it stop me. Do you agree with that?—Yes.

807. What was the matter with her?—She had chronic inflammation of the fallopian tubes, and peritonitis surrounding the ovaries.

808. By the way, she was an outside patient. Was there any consultation about operating on her?—She was under the care of Dr. Maunsell outside, and we had a consultation.

809. To what conclusion did you come?—That an operation was necessary. She was a private patient, and objected to having a lot of doctors about her.

810. Was she in any danger?—Yes, she was in some danger, because she was given to repeated attacks of peritonitis.

811. But what was her condition? I mean, was she slightly or severely ill?—I should say that she was in very bad health.

812. I see that this patient "collapsed" after the operation. Is that surprising on the part of any patient who was in the condition of health that she was in?—They always more or less collapse after a severe operation of that kind.

813. In the case of a patient in such a condition are kindness and much care requisite?—Yes. They want every care in cases of this kind, from the moment of operation. I would not allow the nurses to touch them.

814. Humanity, if nothing else, demands this?—Certainly.

815. Is the patient a source of anxiety to you at that time?—Of great anxiety.

816. Now, you say that in this particular sanatorium the patient, after operation, has to be carried from the operating-room along a long corridor and up a flight of stairs back to her bed. You will notice that it was in the middle of winter that this operation was performed. Do you consider that that was a proper course of treatment?—It was most improper and dangerous.

817. Can it be avoided in the present condition of the Hospital?—No.

818. Could you have operated on this woman in any other part of the Hospital?—I think it would have been more dangerous still to have done so.

819. In that case what would you have had to do?—To operate in a ward downstairs. We have tried to do that before, but had to give it up, as it was very unsatisfactory. There was bad light and no conveniences.

820. There were dangers, but of a different sort, in adopting that course?—Yes. Our previous experience was that the place was very objectionable, and we abandoned its use. I think so still.

821. Then, knowing the difficulties, you think you chose the lesser of them?—Yes.

822. Was there any other course open to you than to treat this woman in the operating-theatre?—There was none.

823. You think the condition of affairs I have just sketched very important?—I do.

824. Can you say whether it had any effect on what happened afterwards?—I think it did. I think it was a factor.

825. You think it was a factor?—I certainly do.

826. I will read from your letter to the Trustees [Letter to Trustees, 23rd May]: "Very shortly after being received into this ward, severe secondary hemorrhage occurred. Dr. Copeland took steps for its arrest, and sent at once for the assistance of the staff. Dr. Maunsell, on his arrival, succeeded in arresting the bleeding (6.30 p.m.). On my return home from my round, I immediately visited the patient, and found her weak and pale from the heavy loss of blood she had sustained; all active hemorrhage being then arrested. The question of reopening the wound and searching for the source of the bleeding was anxiously considered, and finally decided against, one point that carried weight in this decision being that the ward in which the operation would have to be performed was an unfavourable one, being insufficiently lighted, and having no proper appliances. At 9 p.m. I again visited the patient, and I spent over an hour watching her, changing the dressing, &c. There had been no further hemorrhage. After giving necessary directions I left for the night. Dr. Copeland watched the patient carefully through the night, and at 5.30 a.m. rang me up, informing me that bleeding had again set in, and the patient was rapidly failing. I immediately hurried to the Hospital and reopened the wound, and, assisted by Drs. Maunsell, Copeland, and Roberts, carefully searched for the source of the bleeding. In consequence of the poor light (ward gas-jet, and a small kerosene lamp I had brought with me) and inefficient appliances this was a matter of extreme difficulty, and, instead of occupying half an hour, as it should have done under favourable circumstances, it took us one hour and a half to search for and ligature the bleeding points. The patient never rallied from the effect of the secondary operation, and, although every attempt was made to revive her, all failed, and she sank and died about 10.30 a.m. The special points to which I wish to draw your attention are these: (1.) I consider it was a highly dangerous proceeding to remove the patient (while suffering from collapse consequent upon a severe abdominal operation) along a cold passage and up a flight of stairs. The former proceeding must tend, in my opinion, to increase shock; the latter is liable to induce hemorrhage by dislodging clots which may have formed in the mouth of vessels torn across during the operation. (2.) The unsuitable nature of the ward in which the patient lay after the operation was an important factor in deciding me against immediately reopening the wound and searching

for the source of the bleeding. Had this step been taken at 6 p.m. on Tuesday, instead of 6 a.m. on Wednesday, the patient's chance of recovery would have been much better. (3.) The cause of this poor woman's death was collapse consequent on hemorrhage, and exposure of the contents of the abdomen. It is a well-recognised fact that shock, or collapse, in abdominal operations depends in a very great measure upon the length of time occupied in the operation. If the secondary operation could have been completed in half an hour (the whole primary operation barely occupied three-quarters of an hour), as I believe it would have been easily completed under favourable circumstances, there cannot be the faintest shadow of a doubt but that my patient's chance of recovery would have been materially increased. In conclusion, although I would not go the length to say that it is not quite possible that even under favourable conditions the result may not have been the same, I do most emphatically assert that the surroundings of the patient were such as to militate most materially against her prospect of recovery. I again urge upon you, in the interests of all connected with our Hospital, to institute a most rigid inquiry into the bearings of this case, and if I can give you any further information on the subject it will afford me very great pleasure to do so." Do you say that the unfavourable circumstances in this Hospital militated against this poor woman's chance of recovery?—I do, and no reasonable man can say otherwise.

827. But you do not say that the woman would not have died under the best circumstances?—I do not.

828. What you say is that she had not the same chance of recovery?—She had not.

829. I suppose that the defects which you point out are different in character. For instance, you might tell us the condition of the ward in which you performed the secondary operation on Mrs. T——. What about the light?—The Commissioners yesterday saw the lighting and general condition of the ward.

The Chairman: Although we have seen these things, it is necessary that they should be stated in evidence.

Witness: There is one gas-jet over the chimney-piece, but it threw very little light over the bed on which this woman lay. I knew of the existence of that defect, and took down with me a little kerosene lamp which throws a very bright light. When I used this lamp, on throwing the light down the flame smutted the reflector, and consequently it was very difficult for the gentleman who held the lamp to throw the light where it was required.

830. *Mr. Solomon.*] Do you know whether anything has been done to remedy this state of affairs?—I do not for certain, but have heard indirectly.

831. Was there anything like a decent state of affairs?—Do you mean in that ward?

832. Yes?—There was not indeed. There was a great defect about the water.

833. *The Chairman.*] I understand that the first and chief defect was the want of light?—Yes. But I wanted a supply of water during the operation, as I was constantly using the douche. When performing a difficult operation like that it is very important to have an abundant supply of water ready at hand, in order to wash away the clots. In this way we had used the entire contents of one large water-can, and when the can or jug ran out the nurse had to run out and get another jug-full, so that from this cause the ground I had gained was lost again.

834. *Mr. Solomon.*] Now, as to the operating-theatre. I think you are all agreed that that is a great credit to the community?—It is the most creditable part of the building.

835. Is it not a matter that must be anticipated, that after any severe operation a secondary operation may at any time be found necessary?—It may be.

836. The necessity of that in all probability may arise after the patient has left the operating-room?—Quite so.

837. Or when she has been removed back to her ward?— Yes. It was in view of that necessity arising that I suggested having two small rooms off the operating-room, into which a case like this one should be put. I think it a wise measure that there should be a small separate ward for all these gynecological operations. I think it would be far safer that they should be taken here than into a general operating-room. That is principally the reason why I raised funds to supply this want.

838. Am I right in saying that where the necessity for a secondary operation occurs the patient is in a very critical condition?—Undoubtedly she is in a very critical condition.

839. Is it wise or is it feasible under such circumstances to take patients back into the operating-room?—I should think that it would be very unwise.

840. And what do you say about this patient?—That it would have been very unwise to have attempted it in her case.

841. Is that case a very fair illustration of what a secondary operation is?—Yes, it is. In Sophia M——'s case I had to wash out the peritoneum.

842. And you say that it is most unwise to take patients back to the operating-room?—I do.

843. And the result of that is that in the state of affairs which exists in the Dunedin Hospital it is quite to be anticipated that a secondary operation may have to be performed in a ward?—Yes, it is.

844. Are the conditions of this Hospital at the present time such as to make it a safe place to operate in now?—Certainly not.

845. We will now come to the last week of your experience in the Hospital?—Yes, but before doing so, as I have said so many bad things about the Hospital, I should like to say something in favour of it now. I would just hand in to the Commissioners the medical book, and ask them to look at the way in which the medical students keep their records. They are very creditable to our Hospital, and show that in one way, as Dr. MacGregor has pointed out, our Medical School is of some assistance to the Hospital. The books are kept in a way that shows that our patients are well looked after.

846. You have prepared a table, have you not, showing your experience during the last fortnight—that is, the fortnight ended the 22nd July?—I have.

847. I want you first of all to tell these gentlemen what abdominal cases you had during that fortnight in your practice outside of the Hospital?—I had three abdominal operations.

848. *The Chairman.*] Is that all you had during the week ended the 22nd July?—From the Sunday to Sunday, both Sundays included.

849. Please answer my question more closely. I want you to take the period from the 9th July to the 22nd July, and say how many abdominal operations you performed in Dunedin in your private practice—that is, outside of the Hospital?—Three.

850. What was the nature of them?—On the 13th I made an exploratory incision on a man.

851. An exploratory incision for what?—An internal tumour of a doubtful nature.

852. Then, you had three abdominal sections?—Yes.

853. *Mr. Solomon.*] That was a growth of a doubtful nature. What was the second operation?—The removal of stone from the gall-bladder.

854. And the third case?—Double oöphorectomy and a cliterid ectomy.

855. You had also, I think, a confinement case?—Yes, with a ruptured perineum.

856. In what condition was the man on whom you performed this exploration at the time you performed it?—He was in bad health; he had a high temperature.

857. *The Chairman.*] You say it was a bad case?—It was.

858. *Mr. Solomon.*] In none of these four cases—three abdominal sections and one of confinement—from the time of operation until the time of recovery was there the slightest indication of septic mischief?—No, there was none. They all recovered without the slightest sign of septic mischief.

859. Any rise in temperature?—The man I operated on on the 13th had a high temperature, but the wound healed all right.

860. The results in all these cases were perfectly successful?—Yes.

861. *The Chairman.*] The wounds all healed, you say, as far as possible?—Yes; everything did as well as I could have wished, at any rate.

862. *Mr. Solomon.*] For these operations you used, I suppose, your private instruments?—I did.

863. And in all these cases did you attend yourself to the dressings, and so on?—I did, entirely by myself. In one of these cases—the removal of stone from the gall-bladder—I dressed it regularly three times a day for ten days.

864. Now we will come to the Hospital during the same period—from the 9th July to the 22nd July. Tell us the names of the cases in which you operated in the Hospital during that period?—There was Mrs. P——.

865. *The Chairman.*] How many cases were there?—Three. I think that is all.

866. Of abdominal sections?—No; there was not an abdominal section amongst them; they were all simple cases.

The Chairman: They do not compare strictly with the cases outside we have been dealing with.

Mr. Solomon: No, except from an *à fortiori* point of view.

867. *Mr. Solomon.*] Mrs. P—— was operated on on the 9th July, was she not?—Yes.

868. For Emmet?—For a tear in the mouth of the womb.

869. That is what is technically called Emmet's operation, is it not?—Yes.

870. The next case was?—Mrs. S——, on the 15th.

871. That was also for Emmet?—Yes.

872. And No. 3 case was whose?—Mrs. T——, for a labial cyst. She was operated on on the 19th.

873. *The Chairman.*] Were these all the operations in the Hospital that week?—Not as far as I am aware.

874. But you had no other operations yourself?—No; there were no others of my cases.

875. *Mr. Solomon.*] Take first of all the case of Mrs. P——, an Emmet's operation. Is that by any means a difficult operation?—It is a nice operation—that is, it requires nicety.

876. Is there greater or lesser risk of septic trouble following an operation such as that than in the cases which you have mentioned as having occurred in your outside practice?—Very much less risk. I never saw septic mischief ensue before. I have performed thirty cases—possibly more, but I cannot be certain about the numbers, as I have not kept records—but I never saw septic mischief before.

877. And you say that you never saw septic mischief arise, although you have performed about thirty operations?—Yes; I never saw septic mischief arise before.

878. In the case of Mrs. P——, (operated on on the 9th July,) I suppose that you made a careful examination of the woman to see if she was in proper health?—Yes, I made several examinations before operating.

879. Did you satisfy yourself that she was in a fit state of health to be operated on?—It took me a long time.

880. But did you satisfy yourself on that point?—I did. I kept her under treatment for some length of time before operating, because there were symptoms which I did not like. For nearly two months she was in the Hospital—she was admitted on the 15th May—under preliminary treatment. I was doubtful what operation I should perform.

881. But you were ultimately satisfied?—Yes, that she was in a safe condition to be operated on.

882. Was the operation itself successful?—Yes, very fairly so.

883. From the 9th July to the 22nd July—that is, thirteen days—did this woman go on satisfactorily?—No; I cannot say that she went on altogether satisfactorily. On one occasion she took a rise in temperature, which we thought to be due to some bilious derangement.

884. Can we say that she was gradually recovering?—She was gradually recovering; that is the best way to put it.

885. We will leave her for the present on the 22nd July. The next operation you performed was on Mrs. S——, was it not?—Yes.

886. That was also an operation for Emmet?—Yes.

887. Before that operation, had you examined her to ascertain if she was in a fit condition to be operated on?—Yes; I made several examinations.

888. I suppose that what you have said in regard to the other cases in this respect applies to this case?—Yes. I examined her under chloroform.

889. Was the operation successful?—It was very successful.

890. What was the next thing you heard about Mrs. S——?—Next morning, when I visited the ward, I saw the temperature-chart, which I had been looking at daily, and saw that it was abnormal; there was a rise to 101° indicated on the chart, and I made a remark about it. I asked my clerk to make a note of it, which he did. I drew his attention to the fact.

891. *The Chairman.*] What day in the week would that be?—I operated on the Tuesday, and it would be Wednesday morning that I visited the ward, and saw from the chart that there had been a rise in her temperature. Tuesday was the 16th.

892. *Mr. Solomon.*] Did she get better, or did she develop septic symptoms?—For the rest of the week she remained in a fairly satisfactory state; at all events, there was nothing very marked in her condition, and I saw her daily, but on the Saturday night she developed symptoms of septic mischief, and her temperature ran up to 105°.

893. There had been nothing very marked in Mrs. Snowden's case, you say, up to that time? Nothing very striking.

894. She had developed no marked symptoms up to that date, but on that date her temperature ran up to 105°?—Yes.

895. From that time onwards until the poor woman's death she got rapidly worse?—Yes.

896. And died when?—On the Monday, at about 6 o'clock p.m.

897. Of what?—Septic peritonitis.

898. Do you say that the septic poisoning arose in the same way that you have already told us poison is introduced into a person's system?—Yes, I do.

899. Does this case of Mrs. S—— throw any light in your mind as to the cause of death in the previous case, Mrs. Sophia M——?—Yes. A very remarkable feature was present in this case of Mrs. S——, but I shall have to refer to the *post-mortem* to explain it.

900. You were present at the *post-mortem* in this case?—I was.

901. Did the result of the *post-mortem* satisfy you as to the course which the septic poisoning had taken?—Yes. At the time of Mrs. M—— death there was an important link in the chain of evidence missing, which I was never able to fill up until Mrs. S—— *post-mortem*. I can fill up that missing link now.

902. *The Chairman.*] You are now able, you say, to form an opinion as to the cause of death in Mrs. M—— case?—Yes.

903. *Mr. Solomon.*] You were never satisfied in your own mind about it before?—No. I had formed all sorts of theories, and written several theories about it. These latter I have in print.

904. The theory you now have is that the septic poisoning spread from the uterus along the tubes to the peritoneal cavity?—Yes, which is a very rare thing indeed in a case of ovariotomy.

905. Do you say that the same thing occurred in Mrs. S—— case?—Yes.

906. You say that you are supported in that contention by the results of your experience of the *post-mortem*?—Yes. I think that that is a very important matter indeed.

907. *The Chairman.*] You did not perform the *post-mortem* yourself?—I did not.

908. Can you undertake to say that the septic poisoning which Mrs. S—— was allowed to get after her operation was positively caused or introduced into her system in consequence of the insanitary condition of the Hospital?—I have formed a very strong opinion indeed about that.

909. Please give an answer to my question?—I would not like to swear to it.

910. Can any medical man swear positively, in your opinion, to such an opinion as that?—I do not think that he can, conscientiously, to one case.

911. Are the results that you found in Mrs. Snowden's case, and which you have already told us you have never seen before, such as any medical man might reasonably expect with healthy surroundings?—No; certainly not with healthy surroundings, and the precautions that would be taken.

912. And with the precautions which I suppose you did adopt?—I did.

913. But were the results at all surprising in the surroundings in which the patient was?—Not at all surprising.

914. You have already told us that, in your opinion, Listerism in the present day can entirely cope with the dangers of such an operation as this—dangers which would be likely to arise intrinsically. Am I right in assuming that proper antiseptic treatment almost entirely counteracts any symptoms of blood-poisoning?—I would not say that it does so absolutely, but it diminishes the risk enormously.

915. To such an extent that, though you have had thirty operations, you have never had a patient who died?—Quite so.

916. In such operations as these, given in the use of all known anti-septic treatment, can you counteract or contend against the possible dangers of an unhealthy atmosphere?—I do not think I could, even if I took such means. I will not enter into details, but had better say that I could not do so with safety to the patient.

917. You say that you could not counteract unhealthy influences?—Not with safety to the patient.

918. *Mr. Solomon.*] You could not, you say, get rid of all danger to the patient?—No.

919. *The Chairman.*] With the appliances, such as they were?—No. I could not absolutely get rid of the danger.

920. The instruments you used in this operation were whose?—My own.

921. The same set of instruments that were used by you in your operations outside?—I used some of the same instruments in all the other operations outside.

922. And which you carefully attend to?—I will not use the hospital instruments for any complicated case; I am afraid of them. I always take my own instruments down.

923. Does your experience in your private practice encourage any possibility that you could have carried germs about with you?—I think not.

924. Could you have had the results you had if you did?—I do not see how I could.

925. In your opinion, is Mrs. Snowden's death consistent or inconsistent with the fact that before and after this operation, she was lying in an improper atmosphere for some days?—It is consistent with the fact.

926. Do you require to go any further than that to seek the cause of death in her case?—No.

927. I ask you again, was the impure atmosphere in which she was lying both before and after the operation sufficient to account for her death?—I may speak positively about that.

928. But I am not asking you about the cause of her death. I am asking you if the condition of the atmosphere in which she was placed was sufficient to account for her death?—Did you say after the operation?

929. Before and after the operation: will the two do so?—Then I say "Yes."

930. *Mr. Solomon.*] Now, we will go to the next case—that of Mrs. T——. When was she operated on?—On Saturday morning, the 19th July.

931. For what?—A small labial cyst.

932. Inside or outside of the vagina?—Outside the vagina; just at the entrance. It is a very simple incision. It is the cutting off of a little skin lining the cyst.

933. Is it a difficult or a simple operation?—A very simple operation.

934. Did you perform that operation yourself?—Not entirely. Mr. Hogg, my surgical dresser, did the best part of it.

935. Is that an uncommon practice?—No. It is the practice we always adopt.

936. In simple operations?—Yes, we give our students all the assistance we can.

937. It was so simple an operation that you left it to a student?—Yes. But I supervised it very carefully.

938. What instruments were used in that operation?—The student got his own.

939. By that you mean, I suppose, that the hospital instruments were used on this occasion?—Yes.

940. Could one reasonably anticipate that, with ordinary surroundings, there should be any septic trouble there?—No, he could not.

941. Is the part on which that operation was performed a likely or unlikely place to attract unhealthy germs from the atmosphere into the tissues?—It is very easily affected.

942. That is on account of the part being warm and moist?—Yes.

943. *The Chairman.*] Though the place is favourable for the propogation of germs, you do not mean that it is specially attractive?—No.

944. *Mr. Solomon.*] You say that there was nothing out of the way in this operation. Was it successful, or did anything go wrong during the operation itself?—No; it was a very simple operation.

945. What was the next thing that you found?—I operated on the Saturday, and I went into the Hospital on Monday to see her. I took notice by the temperature chart on the day after her operation that her temperature in the morning was 101° and that in the evening it was 102°. On the Monday when I went in and saw her I found that the wound was suppurating throughout: that pus was coming out.

946. Was the woman in a safe or dangerous condition then?—In a dangerous condition.

947. Was there anything in the original wound that would give any operator the slightest fear that the woman was in danger of her life?—No. Of course, if septic mischief arises there is danger.

948. You do not follow my question. In your ordinary experience as a surgeon, using the antiseptic treatment that you would use in such a case, and with hygienic conditions such as you might reasonably anticipate, should any person who had to undergo an operation of this sort anticipate the slightest danger to her life?—No.

949. I suppose if I were to cut my finger, and the wound were to suppurate and discharge pus, I might find myself in some degree of danger?—I should think the amputation of your finger the severer operation of the two.

950. You do?—Certainly.

951. You say that under ordinary circumstances in an operation of the kind not the slightest danger to life could be reasonably anticipated?—It could not.

952. And the same remark applies to the present case?—Yes.

953. Now, you have told us that nothing out of the way occurred, and that the operation was successful?—It was perfectly successful.

954. Yet two days afterwards you found the woman in a dangerous condition?—Perhaps I spoke a little too hastily just now. It is a more severe operation than cutting off your finger, because there is a very free vascular supply. But no one would ever anticipate danger from such an operation.

955. What did you do on finding out this woman's condition?—I had the woman placed under chloroform, the wound opened up, and thoroughly swabbed out with a strong solution of

perchloride, a counter opening made on the outside, and the cavity stuffed with antiseptic dressing. By this means I arrested the mischief, otherwise she would have been in a very dangerous condition.

956. Were the results you have spoken to us about in this case due to septic poisoning?—It was a form of septic poisoning.

957. Were the conditions with which this woman was surrounded sufficient to account for that?—Yes. They were specially so. In consequence of the position of the incision the nurse had to draw the water off three times a day. The wound was consequently exposed necessarily to the air of the ward.

958. In this case, then, there was a direct connection between the air and the wound?—Yes.

959. Do you undertake to swear positively that in this case that that was the cause of the trouble?—No.

960. It seems that Mrs. T—— developed these septic symptoms on Sunday the 20th July, and Mrs. S—— died on the 22nd of July. Now we will go back to Mrs. P——, who was operated on on the 9th July, and who was gradually recovering her health. How did you find her on the 25th July?—On Friday, the 25th, she took ill. My notes on her case are these: "Temperature last night 102°, morning temperature 101°; had a little shivering about 12 o'clock last night; pulse 112°; headache; tenderness over the right iliac region. Examined her vagina. Tenderness in the left lateral fornic and induration; edges of wound separating; all stitches removed; washed out vagina with Jay's fluid; plug and ointment left against the os."

961. And her temperature?—Was 102°.

962. *The Chairman.*] You consider that these symptoms were symptoms of septic poisoning?—Undoubtedly.

963. *Mr. Solomon.*] Was the woman in a safe or a dangerous condition?—In a highly dangerous condition.

964. What did you do?—Carefully washed out the passage and removed the stitches—all the main stitches.

965. You were thus able to save her life?—What saved her life was that there had been some pre-existing inflammatory mischief about the ends of the fallopian tube and the adjoining peritoneum.

966. Any way she ran a risk to her life?—Yes, a great risk. She had very severe symptoms, as the after effects have shown, because she will go out of the Hospital very much worse than when she went in. She has not yet recovered.

967. Was there any danger from the original operation?—No.

968. Has she had any benefit from the original operation?—No; her condition is worse.

969. Do you mean that she is worse now than when she went into the Hospital?—Yes.

970. Under ordinary circumstances, in a healthy hospital, after the performance of an operation like this, how long ought the patient to have been in the hospital altogether?—Three or four weeks.

971. *The Chairman.*] Gone out cured?—She would have gone out cured as regards the healing of the tear. Secondary inflammatory mischief would have cured itself in time, when the exciting cause had been removed.

972. *Mr. Solomon.*] Shall we say improved, instead of cured?—Yes.

973. Assuming a proper hygienic condition in the Hospital, can you by any reasonable theory account for the woman's septic poisoning sixteen days after the operation?—No, it is impossible to account for it. I should say that it was due to the conditions in which she lay in the ward. Assuming that she had been in a healthy ward it was impossible.

974. Are the results at all surprising, considering the conditions by which she was surrounded?—I think they were very surprising. I was astonished by them.

975. You have not understood my question, which was, "Were the results at all surprising, considering her surroundings"?—Yes, given even the condition of the ward, they were surprising. It showed a condition even worse than I was aware of—very much worse than I thought possible to exist in the ward.

976. What was the name of the patient on the other side of Mrs. S——, in No. 7 ward?—Mrs. Archer.

977. How long had she been in that ward?—I know that she had been in the ward for six months. I am speaking from what I have heard.

978. At any rate you know that she had been there for a long time?—Yes, I know that.

979. What condition was she in at that time?—She was suffering from chronic septic poisoning, the result of an abscess connected with the vertebræ.

980. What does that chart indicate [hands Mrs. A——'s chart to witness]?—It indicates that condition. It was an irregular chart.

981. With No. 7 ward in the condition we now know it to be, was that case one of safety or a source of danger to a number of patients?—It was a source of danger to every patient in the ward.

982. Does her presence in the ward lend assistance to your view of the unhealthy surroundings, and do you attribute to it the mischief which you found?—Yes.

983. You say that it lent strength to your previous opinion?—It did enormously.

984. *The Chairman.*] What has become of Mrs. A—— now?—She has been put in a separate ward.

985. Quite alone?—I believe so.

986. *Mr. Solomon.*] Now, there is the case of Miss Kate W——, which you have referred to as being a supposed case of erysipelas, of spreading inflammation, or something of that sort?—Yes.

987. *The Chairman.*] Did you see it on the card?—I did not. It was not one of my cases.

988. Was she occupying this bed—did she actually sleep in it—during the time that bed was occupied by Mrs. S——?—Yes.

989. Was her case being treated for erysipelas?—Yes, I was taken to it and shown it as a case of erysipelas.

990. *Mr. Solomon.*] Speaking generally, taking that table, and taking the results of your practice during that week outside of the Hospital, taking also the result of your practice inside; taking, too, the presence of this known septic case in the ward, and the arising of Miss W——'s case in the ward at almost the same time, can you have any doubt as to whether the conditions of the Hospital and the conditions of the ward and the presence of that case had any effect on your different experiences inside and outside of the Hospital?—I have no doubt at all in my mind about it.

991. That the unhealthy condition of the Hospital made the results inside worse than those outside?—Yes.

992. Could the conditions of the ward at that time which you know existed—as imperfect ventilation and the presence of this case of Mrs. A—— in the ward—have failed to have had an injurious effect on these patients of yours?—No. It must have had some injurious effect on some of them.

993. Now, tell us something about Miss D——'s case?—She was admitted into the ward on the 12th June. When she came in she was supposed to be suffering from an ovarian tumour. Her abdomen was swollen, and there were other symptoms which looked rather like that. The girl was not very ill, but she was a nervous kind of girl. I set her to work about the ward and tried to impress her with the idea that there was nothing very much wrong with her. After she had been in for a very short time—I cannot say how long—I noticed that her temperature began to go up. That would be, I should say, nearly a month after she came in. She got worse from day to day, and developed symptoms of peritonitis, which I concluded from her history and from her symptoms was of a tubercular nature. My impression of her case is that she came in with latent tuberculosis, and that the unhealthy state of the ward in which she was placed caused the disease to become active. She is in the Hospital at the present time. [Table of cases handed in here: Ex. xx.]

994. *Cross-examined by Mr. Chapman.*] You have stated that you asked for this inquiry?—I have.

995. When was that?—On the evening I met the Trustees.

996. That is to say, on the day on which you wrote the letter which has been read to the Commissioners?—Yes.

997. You wrote that letter, did you not, with reference to Mrs. S——'s case on the 25th July?—Mrs. S—— died on Tuesday, the 22nd. I wrote that letter the same night, and took it to Mr. Miller, chairman of the Trustees, the following morning. I delivered it to him myself. I told him that I was determined to have this letter made public, to make myself right with the public, and I might send it to the papers for publication. I told Mr. Miller that if the Trustees took the initiative it would be a proper stand, but if I published it they (the Trustees) would be put in a false position. I said: "I am determined that it shall be made public." He said that there was some doubt whether an inquest would be called. I also said to him, "If you would like to have any modifications or alterations made in the letter, I shall be happy to do so, consistent with the truth." After conversing with him for a little time I left him, leaving the letter in his possession. I called on him again the same day—I do not think there was a long interval—when he told me that he did not want the letter altered in any way. I told Mr. Miller that I was coming to the meeting of the Trustees in the evening. I went to the meeting of the Trustees in the evening, and told them of the reasons of my determination to have the matter made public.

998. You went to the Trustees' meeting that same evening. Then a special meeting of the Trustees had been called to consider your letter?—You are wrong; it was an ordinary meeting of the Trustees. I certainly am under that impression.

999. Where did you deliver that letter?—At Mr. Miller's shop.

1000. Were you present at the meeting when your letter was considered?—I had told Mr. Miller that I should be in attendance. I attended the meeting, and waited outside, thinking that they would send for me.

1001. They read to you or communicated to you their minute on the subject, in which they announced that there must be a public inquiry?—I really cannot answer that. They knew perfectly well that I had demanded a public inquiry, and had determined on one being held.

1002. I want to know when you had communicated to you the result of the meeting of Trustees?—I will tell you exactly what occurred. Mr. Miller sent for me, and told me that a public inquiry would be held, but they (the Trustees) were not quite certain what form it would take. Then I left the room. But I was not satisfied, and thought that I might be put in a wrong position, so I went back to the meeting, and said, "You must distinctly understand that this inquiry must be founded on my letter." They said, "Yes, we understand that."

1003. You say distinctly that they communicated to you the result, which was that they called for a public inquiry founded on your letter?—They certainly did.

1004. Did they communicate to you the terms of their minute?—I do not think they did. At any rate, a doubt remained in my mind, because I went back to their meeting and said to them, "I must put myself right on this matter. I have called for this inquiry. My letter is to be the foundation of this inquiry.

1005. You went back to the meeting and said, "This letter is to be the foundation of the inquiry"?—I did. I do not know if there was a minute read, but there was certainly none while I was there. They told me distinctly that they had not made up their minds what the form of the inquiry should be.

1006. Did they communicate their minute or the substance of it to you?—I cannot say.

1007. Who was it who spoke to you?—That I cannot tell you.

1008. You say that you went to the meeting?—Yes; I had an uncomfortable sensation in my own mind.

1009. I want to know whether that effect was connected with the resolution to have a public inquiry?—I certainly had an impression that there was to be an inquiry, but I was equally impressed that the Trustees did not know what form it would be eventually.

1010. I will follow your evidence in the order in which it was taken. Now, you have spoken of your ideal hospitals, where do they exist?—St. Thomas's, in London, is one.

1011. That was completed and opened about twenty-two years ago, was it not?—I could not tell you exactly.

1012. Twenty years, at any rate?—Yes.

1013. Where else do such ideals exist?—I cannot tell you, but if you refer to some of these books you will find them.

1014. Have you had any personal experience of the pavilion system of hospital?—I think the Wellington Hospital is built on the pavilion system.

1015. Then that is your model for New Zealand?—No. I think it might be very much better even than the Wellington Hospital.

1016. So that there is no model hospital to be found in New Zealand?—No.

1017. Is there in New Zealand any reasonably-perfect hospital, according to your notion?—Yes. I should be perfectly well satisfied if we had a hospital like the Wellington one down here, or even one like the Christchurch Hospital. The Alfred Hospital, in Sydney, is also built on the pavilion system.

1018. Do you know it?—I do. I spent a good deal of time in it when I was over there.

1019. Is it a hospital in which the conditions are reasonably perfect?—I should say decidedly so. If, however, you mean that there are no defects, then I say no; but nothing human can be perfection.

1020. You consider it reasonably perfect?—Certainly.

1021. What other hospitals do you know?—When I went over to Australia I saw the old hospital in Sydney. They were crying out very much against it; but I thought it infinitely superior to ours in every respect. Even the Melbourne Hospital, which has been so much condemned lately, compared most favourably with ours.

1022. Do you join in the condemnation of the Melbourne Hospital?—I do not know sufficiently about it.

1023. What is the difference between the condition of these hospitals and ours?—They are infinitely superior to ours.

1024. Are they good?—I should say that they are very good. I know that, coming from New Zealand, they seemed to me to be very good.

1025. So far as structure of the hospital was concerned—distribution of space and convenience of arrangements?—They had much more conveniences than ours.

1026. Have you made a special study of this subject of hospital building?—No, I have not; but I have read a great many books on the subject since I began to take an interest in it.

1027. That is to say, during the last eighteen months?—Yes.

1028. Since you have taken an interest in it for the purposes of this case?—I have worked it up a good deal since I was over to Sydney.

1029. You visited England lately?—I did.

1030. You saw the hospitals there?—Yes; a great number of them.

1031. Did you see a great number of hospitals that were tolerably perfect hospitals?—Yes; but you see I am very moderate in my ideas of hospitals.

1032. But you must have seen a great many old hospitals?—Yes; but I never was inside a hospital that in any way approached the Dunedin Hospital.

1033. You never saw nothing like so bad a hospital as ours?—No; I never saw anything like so bad.

1034. On what did you form your conclusion that the Dunedin Hospital was so bad?—I have formed that conclusion from the first day that I was in it.

1035. Have you held since then the opinion that it was thoroughly bad?—Of course; I did not recognise until lately how bad it was. Possibly that has been growing on me. It was after making a round of the colonies and seeing what superior institutions there were there that I came back intensely disgusted with ours.

1036. Was it after you came back from England that you felt intensely disgusted with our Hospital?—Of course, when one is at Home he expects to find things much better than in the colonies. It was after visiting Melbourne and other colonial cities, and seeing how immensely superior to ours were the hospitals there that I was disgusted.

1037. Then it was on your return from your Melbourne trip that you felt so intensely disgusted?—After going to Australia I made a trip round the coast, and saw the Wellington and Christchurch Hospitals. I was not back very long before I took action—somewhere about the second week of February, 1889.

1038. You were in Melbourne during Exhibition year?—Yes; I went over there to attend the Medical Congress, and while there I saw everything that was to be seen in the way of hospitals. I also went to Sydney, and nearly all my time there was spent in the hospitals.

1039. Did you then come to the conclusion that this Hospital of ours ought to be condemned wholesale?—To do what?

1040. You have told us that the building was unsuitable, that everything about it was bad. Was that the substantial conclusion that you then came to?—That has been elaborated since.

1041. You now come to the conclusion that the institution is thoroughly bad, or, to use your own words, you are thoroughly disgusted with it?—I am indeed. I do not see how any man can do good professional work in it.

1042. Did you make any suggestions as to what should be done?—I did.

1043. What suggestions did you make?—I wrote a long letter—I took a great deal of trouble with it—addressed to the Trustees, in which I suggested various improvements.

1044. *The Chairman.*] When was that? how long after your return from Melbourne?—About the end of the month—about the 28th.

1045. In the same month that you returned?—I think so.

1046. I understand you to say that you immediately wrote to the Trustees making suggestions?—Yes. As soon as I got my ideas collected I set about to make suggestions to the Trustees for improvements. I think it was on the 27th February that I sent in my address to the Trustees on hospital reforms. I am prepared to substantiate every detail in my address.

1047. Did you express yourself in these terms: "As to the Hospital building, he had a strong opinion that by the expenditure of £8,000 they could get a perfectly good hospital—a sample hospital for the colony"?—I did, certainly.

1048. And, again, you say, "And the expenditure of twice that amount might not insure a better hospital than they had at present"?—I said that also; it is perfectly true.

1049. You say that with an expenditure of £8,000 the old Hospital could be patched up?—Yes, that we might patch it up.

1050. *Mr. Chapman.*] So as to make it a model hospital?—That was my idea at the time. Before I leave this question I should like to say a little more about it. These ideas were purely my own. I had no knowledge what the views of my colleagues on the subject were. Subsequently, when we drew out the report on the hygienic condition of the Hospital, I was so struck with the differences of opinion among my colleagues that I honestly doubted whether the thing could be patched up, and that doubt has been steadily growing on me.

1051. You have mentioned that a report was drawn up. By whom?—By Dr. Lindo Ferguson.

1052. Did he draft it?—Yes. But it was carefully discussed by the medical staff.

1053. But you approved of it yourself?—I had to be content with what I could get from the staff.

1054. You signified your approval of it all by signing it, did you not?—I did so, because I could not get them to give anything more. I wanted something stronger, but I could not get them to come up to my ideas on the subject. We had some members of the staff who were very ticklish men to deal with. We thought among ourselves that there was more likelihood of getting reforms if we came to a unanimous opinion.

1055. Now, coming to this £8,000, you had, I suppose, worked out the figures?—I had done so roughly.

1056. What is your proposed allocation of this £8,000?—It was only done in the rough, just to give an idea what it would cost.

1057. But you must have had some basis for your figures?—I had an idea of adding towers to each large ward, and of making provision in them for bath-rooms, lavatories, waterclosets, to be connected with the wards by cross-ventilation. I thought that the Hospital might in this way be made fairly sanitary, and then that it might do for some time. I had not then gone into the matter as deeply as I have done since. I now see that that would be a mistake: that it could not be worked economically, but that is a view which did not strike me at the time.

1058. What was the other purpose that these towers were to serve?—To give separate bath-rooms and closets.

1059. But not to have large partitions for the wards?—Oh dear no; just simply to build them out from the corners. Another advantage would be that they would give extra bed-space, and give a little extra room.

1060. Have you had any architect's estimate or anything of that kind?—No. I thought it better to give them something to start on.

1061. You have more than once expressed the opinion that by an expenditure of £8,000, the Dunedin Hospital might be made a perfectly good hospital?—That was my view then.

1062. And that view you formed after being connected with the institution for a dozen years or more?—Yes.

1063. Was there any member of the medical staff who went further than you, but in the same direction?—Yes. This is how the thing is minuted: "A discussion ensued, and then there was a suggestion brought up that any improvements should be made on the pavilion system."

1064. By whom was that suggestion made?—By Dr. Lindo Ferguson. There was a resolution to the effect I have just stated. I remember it distinctly. I wished to go into the matter more fully later on.

1065. This is what Dr. Ferguson's motion says, "That the medical staff strongly feel that any expenditure for new wards should be in the direction of having separate pavilions which may form part of a new hospital on more modern principles."—Will you please read a little further on?

1066. "Dr. Batchelor desired it to be recorded on the minutes that he did not vote, as he considered both the motion and amendment premature."—I am glad that you have called attention to that, because it shows that I had not made up my mind then. It was a big question, and I thought it should be thoroughly thrashed out. I did not want to agree to that right off.

1067. Why did you think it was premature?—Because the original address was given simply to kick up a row. I wanted to draw attention to the defects in our Hospital, and wished the people to know exactly what they were. I did not give particular attention to how these things were to be improved so much, as I wanted the whole thing to be thought out before determining on any course of action.

1068. Did you express yourself to that effect?—I think that that motion pretty well expresses that view.

1069. I want you to show the Commissioners where in that debate you expressed yourself to the effect that you now express yourself?—You will find during the debate in connection with the

patching-up that I said if we mooted the idea of a new hospital there would be so much outcry that we should never get anything done. Then, when this pavilion system was brought up by Dr. Ferguson, Drs. Brown and Stenhouse both expressed themselves in favour of a new hospital. I thought then something yet might come of it. At all events that was the thought which passed through my mind at the time.

1070. And the result was your protest?—It came immediately afterwards.

1071. At that date you had not suggested to any one about having a new hospital?—No I had not.

1072. You were perfectly satisfied with a patching-up, as it has been termed, of this Hospital, as answering all purposes?—I thought that I had better be satisfied with what I could get.

1073. And you had never expressed yourself in any other way than that you were satisfied?—No.

1074. You say deliberately that your object in that debate was—to use your own expression—"to kick up a row."—I did not say anything of the sort.

1075. Then what did you do?—In my address I tried to "kick up a row," but in the debate I tried to smooth matters over.

1076. Did you want to reassure people that the Hospital was not so bad as it had been made out to be?—I do not know that I did that quite.

1077. Then what was your object in trying to smooth things down?—I wanted to get something done. I knew that if the Trustees got their backs up nothing would be done. If you notice the tone of the debate, there was a general trying to smooth things down.

1078. You thought you had set the backs of the Trustees up with your original address?—Just so.

1079. And you were rather sorry for it?—No; I think it was the very best action of my life. I am very proud of that address.

1080. But you expressed regret for it, did you not?—I expressed regret for the tone of the address, but not for the address itself, of which I am very proud.

1081. Then the whole tone of that meeting was in the direction of negativing the asperities of your address—of reducing the effect that it had produced?—I found out that it had produced a certain amount of irritation, and therefore I wanted to smooth matters down.

1082. Can any one draw any other inference than that you had to a large extent retracted?—Most decidedly and emphatically no. I am afraid, Mr. Chapman, you have not been very well posted up in this matter. I would like you to look at a letter I wrote to the papers. (Page 57 of scrap-book.)

1083. You had an acrimonious discussion, did you not?—Well, I was somewhat annoyed because individual Trustees made speeches on my address, in which they made some very grave misstatements. In the letter I have called attention to, I wrote: "I will conclude by saying that every fact I have brought forward I am prepared to substantiate to the Trustees, and not a single argument I have used has, so far, been disproved."

1084. *The Chairman.*] What is the date of that?—That is a letter I wrote to the newspapers on the 4th April, 1889.

1085. You put that letter in to prove that you had not retracted anything?—Exactly; in reply to an article which appeared in the *Daily Times*, in which the writer said that "it must be admitted that Dr. Batchelor ought to have been more cautious in some of his statements, which in several instances appear to have been singularly careless and inaccurate." I said that I did not cavil with the official memorandum of the Trustees, which I considered moderate in its tone. It contained some inaccuracies, but none of great importance. The opinions of individual Trustees, as evinced by their speeches, were grossly inaccurate; and I said in my letter that it was a case of their individual words against mine. And I went on to say, in effect, that such important issues were involved that they should not be jeopardised by petty, personal quarrels, but I trusted to the Trustees' sense of fair-play and justice to set me right when they knew the facts. They have not yet done that, by the way, and I am glad of getting an opportunity now of setting myself right.

1086. Now, in one of the letters which you wrote to the papers you expressed yourself in these terms: "The Trustees naturally dwell upon the very many excellent improvements effected under their *régime*, at the commencement of which, according to Dr. Brown, the Hospital was in an 'appalling condition,' and which by the expenditure of a few thousand pounds has been converted into as 'admirable an institution.' I, on the other hand, draw attention to some serious radical defects which still exist; and, further, ask the Trustees if the expenditure already incurred has effected such reforms, may not a few thousand pounds more render our Hospital a model for the colony." There you say that the Dunedin Hospital is an "admirable institution"?—Those words were not used by me.

1087. I beg your pardon. But you say that the Hospital may be made a model for the colony?—Yes, but that is easily explained. I was exceedingly anxious to get something done, and had to be content with half a loaf.

1088. There was a rather acrimonious debate, was there not, when the Trustees discussed your original address?—Yes, they discussed it in my absence, and when I was unable to reply to them. They have never given me an opportunity of replying to them up to the present time. It shows how utterly wrong they were at that time.

1089. In what respect?—Many of them were strongly opposed then to reforms in our nursing system, yet in twelve months they entirely come to our views, and adopt the nursing system long ago recommended by the staff.

1090. I must ask you again how you proposed to allocate this £8,000, which was to put the Hospital in a perfectly good state. You have told us about the turrets: were they to have cost £8,000?—No. I only answered that question from memory, and I did not attach much importance

to it at the time. I thought that the turrets might cost £4,000—there would be four of them; the nurses' home would probably cost £2,000; and the special ward for special cases would cost another £2,000.

1091. What was the special ward to be for?—For the diseases of women.

1092. Is there any other class of disease which actually requires a special ward?—If the evidence which I have adduced——

1093. You must answer my question. Is there any other class of disease which actually requires a special ward?—I think not.

1094. Do you think that there are other gentlemen in your profession who differ from you on this point?—I have not the slightest doubt that there are gentlemen in the profession who will differ from everything I say.

1095. But there may be another specialist who takes an equally strong view of his own speciality?—Yes.

1096. That is simply your own individual opinion?—This is all.

1097. How many specialists, in the sense in which you use the term, are there connected with the Dunedin Hospital?—Two, Dr. Lindo Ferguson and myself.

1098. You are for womb cases and he for ophthalmic ones?—Yes.

1099. You proposed to allocate £2,000 for a special ward?—Yes.

1100. I see you hold pretty strong views about it?—Yes; but then I had collected the money for it.

1101. When did you collect the money?—At the time I delivered my address to the Trustees I had got about £500, from about twenty ladies. I felt convinced that we should be able to get a great deal more by a public appeal. I knew perfectly well that if the Trustees had backed me up we should have got all the money we wanted.

1102. That was the object of your "kicking up a row?"—It was one of the objects. I wanted to get the money.

1103. To get money for a special ward for your own cases?—That is a very narrow view; it must have emanated from some medical man in town. I thought that you would have given me more credit.

1104. Will you please answer my question?—I will answer your question by quoting from my address, which will give the best possible answer. I was asked that very question at the time of giving the address, by one of the Trustees:—"Mr. Solomon (senr.): If I understand the matter aright, what you want is a gynecological ward? Dr. Batchelor: Not at all. There would not be any trouble if I wanted that. All I would have to do would be to raise the money, come here and get the Government subsidy, and the thing would be done; but I thought that would be rather selfish. It would be selfish to go in for my own speciality alone, so I thought I would take a proper basis. It is on the opinion of the public that I am going in, and I am determined to fight the whole battle." I think that that is a very good answer to your question.

1105. Have you made any change in your recommendation for a special ward for special cases, or is it still a feature of your reforms?—It is. I had made the appeal for a special ward for diseases of women; and if I had asked for the money for any other purpose, it would have been dishonest on my part to have suggested its allocation to other purposes.

1106. Then you joined in the recommendation for special wards?—Undoubtedly; I think them absolutely necessary.

1107. How many?—I do not know.

1108. But I want your views on the subject?—I think there should be a special ward for eye cases, a special ward for children, and a special ward for gynecological cases. You might also require isolation wards for dangerous cases.

1109. With additions of that kind, do you think that the Hospital is sufficient for all purposes?—Do you ask me if I think so now.

1110. Yes?—No, I do not.

1111. Did you think so a few months ago?—What do you mean by a few months ago?

1112. I ask you again, did you not, until a few months ago, have the opinion that the Hospital was sufficient if these additions were made?—I must give you an answer in my own way. I want to tell you what I do think.

1113. Will you give me a direct answer. Am I correct in saying, or am I not, that up to a few months ago you were of opinion that with the additions of a special ward for eye cases, a special ward for gynecological cases, and a ward for children, this Hospital would be sufficient for all purposes?—Up to twelve months ago I thought that the Hospital might be sufficient with these additions; but since I have gone more carefully into the matter, I think that it would be a very expensive way of carrying out improvements. Further, I think that in view of having a medical school here, we are bound to have here as perfect a hospital as we can make it. That is why my views are possibly more expanded now in regard to having a better hospital.

1114. I do not quite understand your answer. Do you mean that the requirements of our Medical School have had the effect of enlarging your views?—As I said before, you are doing a very grave injustice, not only to everybody in the town, but to the colony, if you have your Medical School attached to a hospital that is not in a reasonably perfect condition. On this point, I have given you my reasons, and I think they are very good ones.

1115. In connection with your condemnation of this Hospital, you have referred to various subjects, as drainage, waterclosets, size of the wards, and so on?—You must exclude drainage, as I do not know anything about that.

1116. Well, we will deal with the size of the wards, the lighting of the wards, superficial area, ward-floors, bed-space, cubic space, ventilation and height of the wards? Have you studied any of these matters in any of the other hospitals that you have visited?—I cannot say that I have studied them. I took a glance and formed my impressions accordingly.

1117. Then you did not consider these subjects?—Oh yes, I did. But I did not make mathematical calculations.

1118. You did not take actual data?—No.

1119. Are you able then to make comparisons between the Dunedin Hospital and any of the other hospitals that you have visited: I mean on the points on which you complain?—Unless I am a fool, I think I can.

1120. Where did you find them so satisfactory?—Well, I do not know any place where I found them so unsatisfactory as in the Dunedin Hospital.

1121. Did you find them unsatisfactory here in all these respects?—One thing I never saw was the beds stuck together like they are here. It is simply an abomination.

1122. Did you find in all the other hospitals you visited more bed-space than there is here?—Undoubtedly, there was more bed-space.

1123. That is to say, the total size of the ward in reference to the number of beds. Was there more cubic space in those hospitals than we have here?—Even in regard to that, I should say decidedly there was.

1124. In all the hospitals that you have visited?—I will not swear to that, but I should think so. The cubic space in this Hospital is not enough.

1125. You express that as your opinion?—Yes; but not as an expert.

1126. Whence do you derive that opinion?—Ashhurst says that above 12ft. the air is not to be calculated in the cubic space.

1127. I want you to give me some authority for that statement?—I think you will find it in Wilson's book, page 13. You will also find it in Holmes'. At any rate, that view is held by all the authorities I have consulted.

1128. It is from those sources that you derived your information?—Yes; and it is very good information.

1129. Are you aware that in modern hospitals they continue to build over 12ft. high?—I have not the slightest doubt that they do, but there must be some reason for it.

1130. But this is not a matter in which you have any original observations to make?—Erichsen (vol. i., page 12) says: "The effective height of the ward for the purpose of ventilation does not exceed 12ft." If that applies to a well-ventilated ward, I should say that it applies very much stronger to a badly-ventilated one. Ashurst says, quoting from experiments of Du Chaumont, that they "show that above 12ft. there is little or no movement in the air, except towards the outlet ventilators. The space above is therefore of little value as ventilation space."

1131. Then you have taken that statement as unqualified, and that it does not depend on the size of the ventilators in such matters?—I think it applies with more strength to our wards than to others.

1132. You have taken it as an unqualified statement that a height above 12ft. is not calculable?—I have accepted it as good authority.

1133. Can you speak as to the dimensions of wards, bed-space, floor-space, cubic-space, or any such data, in connection with the other hospitals in New Zealand?—No, I cannot say; but I have no doubt that you can get them by applying for the information. I have never measured these things. But if you take the trouble to inquire, I am quite sure that it will be found that our Hospital is very deficient in all respects, in comparison with other large hospitals in New Zealand.

1134. And that it will still maintain the character you have given it, of being the worst hospital in New Zealand, the worst hospital you have ever seen; a "hotbed of septic disease," as your counsel terms it?—Yes; and if our climate were at all bad—like that of Melbourne, for example—you would have a very heavy mortality; in fact, I do not know what it would be.

1135. You have told us that you have sometimes been in doubt whether you would operate, on account of the poisonous condition of the Hospital?—I said on account of the generally unhygienic condition of the Hospital.

1136. Since when did you make up your mind that it was dangerous to operate on that account?—It is a thing that has gradually grown on me. In some cases it is a very fine point, to decide whether an operation should be performed or not, and it will just turn the scale if you feel that the Hospital is in an unhealthy condition.

1137. You have performed a large number, and in point of character, the most serious operations on women in that Hospital?—I have.

1138. When did the condition of the Hospital and of the atmosphere determine you not to perform operations?—I do not understand you.

1139. You have told us already—I have taken a note of your actual words—that you have sometimes been in doubt whether you should operate or not. Did you determine all these cases of doubt all in the one way?—Why, it is absurd to talk like that.

1140. You have stated to us that you were sometimes in doubt whether you should operate. You were speaking in reference to the condition of the Hospital, and you led us to understand that that doubt was on account of the condition of the Hospital?—Quite so.

1141. Then, I ask you, when did you begin to determine not to operate?—I should say for several years.

1142. I want you to come a little nearer to it than that. How many years is it since you began to determine that you would abstain from performing operations?—Well, since the case of the old soldier.

1143. That was in 1883, was it not?—I might say almost since my connection with the Hospital. It must weigh in anybody's mind to avoid operating if he thinks the Hospital will not stand it.

1144. Do you think that you have avoided operating in cases where it was possible to avoid

operating?—Where it has been a fine question whether I should operate or not, the feeling as to the state of the Hospital would weigh with me, and that feeling has been growing on me, until Mrs. Snowden's case, which decided me never to perform another Emmet's operation in the Hospital until its hygienic conditions were made good.

1145. *The Chairman.*] You say that that feeling has been growing on you?—Yes, for years.

1146. *Mr. Chapman.*] When did you decide against performing the more serious operations on account of the unhealthy state of the Hospital?—I never so decided. I have never decided against serious operations—that is, in cases of urgency. Operations are of two classes—necessity or urgency and expediency. The first-mentioned you are bound to do. You are bound to operate under certain conditions; but there are many cases of expediency in which it is a question whether you should operate. I do not think it is worth while asking me any more questions on this subject. It is perfect nonsense to do so.

1147. I want to know definitely when it was that you pronounced that the Hospital was so unsatisfactory that you would not operate in it?—I never said anything of the kind.

1148. When did you come to that conclusion in your own mind?—Almost from my first connection with the Hospital I thought its condition was unsatisfactory.

1149. In 1883 would you apply the term "very unsatisfactory" to it?—I would not like to give an answer.

1150. That seems to have been the turning-point?—I do not think so. The thing has been gradually growing on me.

1151. You have already given us the case of the old soldier?—I did not give you any date.

1152. Were these cases of knee-joint, which you have mentioned, among the cases that weighed with you in determining that the Hospital was unsatisfactory?—I think that they must certainly have done so.

1153. Used you ever to complain that the Hospital was insanitary?—Yes. And I heard Dr. Coughtrey say after he had left the Hospital—he was there about eight months—that it was a beastly place. Why, he abused the place up hill and down dale.

1154. When was that?—Soon after he was appointed.

1155. Can you give us the date of that?—No. But I never heard anybody abuse the place like Dr. Coughtrey did.

1156. When are you speaking of?—When Dr. Coughtrey left the medical staff before. I spoke to him several times about rejoining the staff, and he said that he would have nothing to do with the Hospital, that it was a beastly place. I never heard a man abuse the place like Dr. Coughtrey did then.

1157. Of course, you used not to call the Hospital a beastly place?—Oh yes, I did.

1158. Just before we adjourned for lunch I was asking what the date was when Dr. Coughtrey ceased to be a member of the Hospital staff?—He was there only one year, only in 1878, and the last meeting he attended was in August, 1878. Dr. Coughtrey moved a resolution then, and about that time he left the Hospital, and, as far as I know, never came back till quite recently. When I spoke to him on the subject of rejoining once or twice he said he was so disgusted with the Hospital that he would not go on with it, and would have nothing more to do with it.

1159. You have referred to cases in 1883?—Special cases, are they?

1160. There were two or three special cases in 1883—those knee cases?—I have forgotten the exact dates, but if you will refer to the cases you will find them out. William M—— is one in 1883.

1161. And there is another?—Yes, Charles G—— in 1882.

1162. Now, you were convinced at that date that the Hospital was in an insanitary condition, and not a fit place to perform serious operations in?—I cannot say I could have gone that length. I knew the Hospital was in an insanitary condition, and it always weighed with me in my operations. Serious operations we were bound to perform whether the Hospital was in a sanitary state or not.

1163. But you have not answered my question—I prefer my former expression, it is a better way to put it?—Well, I may say that operations are divided into two classes. Those of necessity we are bound to perform, but those of expediency we can think over. Various factors weigh. Cases of necessity we always do.

1164. And when did you come to think it was improper to perform operations of expediency?—My final conclusion has been formed on the last case—that of Mrs. S——, last month—and I have never performed any since then. That case made up my mind not to perform any operation for expediency there again.

1165. It was from her case you concluded that. But when, then, did you consider the Hospital an unfit place for operations of that kind?—How is it possible for a man to answer a question like that? Every case must be taken on its merits. Medicine, as my counsel told you on the first day, is not an exact science, and you have to act on each individual case as it occurs.

1166. You have said it was unfit for performing operations of expediency?—I say that every case you must weigh on its merits; you cannot go on any individual case.

1167. But Mrs. S——'s was a case of expediency?—Yes, decidedly it was.

1168. And a case that did not call for operation that day, that week, or that month?—Certainly; I agree with you.

1169. And, even supposing an operation was required, could you have deferred it for three or even six months?—Yes, I might.

1170. Do you consider that a woman suffering as she was would some day require an operation?—Well, this disease is apt to lead to secondary trouble. If there is disease of the cervix it will lead to all sorts of complications.

1171. And are these cases curable without operation?—Certainly not curable.

1172. Are they capable of being relieved or improved without operation?—They may be improved very much without operation.

1173. Now, have you operated in many cases like hers in the Hospital?—Yes, a great number.

1174. Were they cases of the same character?—Yes, a good number.

1175. And those would be cases which resembled hers in this respect: that they were essentially operations of expediency?—Yes, they were so.

1176. And there was no immediate hurry?—No; there was no immediate hurry.

1177. Then, it is only since her death you have come to the conclusion not to perform these operations?—This has confirmed the opinion I all along held, and it makes that opinion stronger. I have been chary about operations of expediency for some time past, and this one will absolutely stop me performing one in the Hospital while it is in its present condition.

1178. About how many such operations have you performed within the last three years?—I should have to look at my books to answer that.

1179. Have you any idea?—Well, I suppose there were about eight or ten.

1180. Of this class?—Yes; it is hard to recollect, but I think that is about the number. You might look at the books, and you would find the correct number.

1181. Let us take the last four years. Am I right in my recollection that you said, in answer to Mr. Solomon, that since 1883 there had been, so far as you knew, no substantial amendment in the condition of the Hospital?—Since 1883?

1182. Yes.—Well, I will go further than that, and say I do not think there has been any sufficient change made in the Dunedin Hospital since I first joined it. There have been improvements, certainly.

1183. There have been improvements?—Yes, but not sufficient; certainly not.

1184. Am I right in my recollection, then, that, substantially, there has been no improvement in the Dunedin Hospital since your experience of it in 1883?—I cannot tell you what has been done underground. Mr. Burns has been devoting his attention to the foundations, I believe, and I think that is quite right. I can only tell you what has been happening aboveground.

1185. Have you made inquiries about drainage, or ventilation, or the ventilation of drainage?—No, I have not. As I said at first, I know very little about drainage.

1186. Have you, then, treated that as a secondary matter?—No; I have had enough to do to treat patients without treating drains.

1187. But you have gone into many other matters here, other than the treating of patients?—Yes.

1188. Then when you say that the condition of affairs in the Hospital has not improved since 1883 you do not take into consideration such matters as alterations in drainage?—No; I have not considered that.

1189. Now, your own view and that of the staff, I understand, as to the relative urgency of the demands for improvement——. But, by the way, it was in the very outset of your evidence, if I am not mistaken, that you urged the importance of some improvements in a certain order, starting with the new operating-room as being the most urgent?—I do not think I did.

The Chairman: He was never asked about the operating-room.

Mr. Chapman: No; he has not touched that. I believe the staff is agreed that that room shall not be assailed.

Mr. Solomon: Quite so.

1190. *Mr. Chapman.*] That is an undoubted improvement that Dr. Batchelor approves?—Yes.

1191. In my notes of Dr. Batchelor's evidence I have taken this note: "Met and most urged the operating-room." That was in 1883?—I do not think I urged in that direction, but the staff might have.

1192. But you took part in it?—I will tell you what I did. I thought the most urgent thing, and the most necessary, was the nurses' home.

1193. That is the next important, as I have them in my notes, and next comes the special wards. So these three matters, as the most urgent, were the questions discussed at the meeting of the staff?—Yes.

1194. Did you at that meeting of the staff assail the Hospital in general terms on the subjects of ventilation, of wards, of improper floors, of improper walls, waterclosets, and all these subjects?—No, I did not.

Mr. Solomon: When was that?

Mr. Chapman: It was in May, 1887.

1195. *Mr. Chapman.*] It was immediately after you came back from the "promised land" that you made the complaint?—This is the "promised land," as far as I understood it. It has been all promises here, so far.

1196. Now, I want to call your attention to this: that in those recommendations there is nothing implying discontent with the sanitary conditions of the Hospital?—No; you are quite correct. We thought we had taken quite enough in hand with these three subjects.

1197. Who are the "we"?—The medical staff.

1198. Was the subject of the insanitary condition of the Hospital discussed at all?—It has been discussed in a formal manner. For years past it has been recognised among the medical staff.

1199. Can you give me any of the expressions in which it was recognised?—No; I cannot.

1200. Can you give me one reference in which the Hospital was spoken of as a "hot-bed of septic poisoning," as your counsel has termed it?—Well, every now and again a man would complain of a case going wrong.

1201. Tell me who the man was?—Dr. Coughtrey. Whenever I spoke to him, as I did several times, about his leaving the Hospital, and asked him to rejoin the staff again, saying, "Coughtrey,

it's a pity you are away." He replied: "I am not going back again; it's a beastly, unhealthy hole, or in words to that effect.

1202. But that does not pointedly refer to this Hospital being a hot-bed of septic poisoning?—I never expressed myself in such elegant language.

1203. Has no one ever used it, then?—No; but we implied very much the same thing.

1204. That was not your language: tell me, then, who it was that characterised the Hospital as a "hot-bed of septic disease"?—That was not our language—no.

1205. Did Dr. Coughtrey characterize it in that way?—I do not think he used that language.

1206. Was it your opinion it was a hot-bed of septic disease?—I would not have spoken so warmly about it as I do now.

1207. Do you acknowledge that any one ever used the term?—Nobody ever expressed it in such nice language.

1208. Then, that is not your language?—No, it is not.

1209. Now, you say you would not have spoken so warmly about the Hospital some time ago as you do now. What is it that has changed your opinions?—Experience of the Hospital.

1210. Since when, pray?—It has been growing gradually on me year by year.

1211. Then you abandon the term about the Hospital being a hot-bed of disease?—I never used such an expression; Mr. Solomon used it.

1212. Have you ever, from first to last, reported the Hospital to the Trustees as being in an insanitary condition?—I do not think any formal report has been made to the Trustees on the matter. We have mentioned it many times.

1213. I would rather you spoke of yourself, and not of "we."—Well, I should have taken very much stronger action than the rest of the staff.

1214. But, any way, you never did so?—Unfortunately I was tied down.

1215. You never did, from first to last, report the Hospital to the Trustees as being in an insanitary condition?—No, I never did.

1216. Under this growing terror, did you gradually reduce the number of operations you performed in the Hospital?—Well, I should say no. I think my cases have increased, and in that way I did not reduce the number of my operations. I should certainly say no to your question.

1217. You did not reduce the number of operations you performed on women in the Hospital?—I should think that by my cases increasing my operations increased in like manner.

1218. Now, do you know when these statistics in the Hospital Report for the year 1889–90 end?—I know nothing about them. They were only sent to me once.

1219. Will you look at this report and examine that table at page 15?—Yes, I am looking at it carefully.

1220. Can you tell how many operations you performed on women in the Hospital during the year 1889—

The Chairman: I have not had a copy of the report.

Mr. Chapman: A file of the Hospital reports from 1886 will be supplied.

1221. *Mr. Chapman.*] I want to know if Dr. Batchelor can see how many of his gynecological operations are mentioned in the report?—I cannot tell by it, because other men performed gynecological operations. I see one death there that was not my case. There are two deaths in this table, and one of them is certainly not mine. I do not know how many operations were performed by other men, and I do not know how many operations there were.

1222. There were twenty-nine?—I know that the death at the top of the column is not mine. I cannot answer for the other cases.

1223. There are twenty-nine cases in the list. Can you, looking at the description of the cases, tell how many operations you performed in the year 1889–90?—It would be rash to give an opinion on the point when I find that other men are performing operations. I do not want to take the credit of their work.

1224. Do you suppose most of them are yours?—I do.

1225. Do you know how many gynecological cases there were generally in the Hospital?—I do not.

1226. Should you expect it to be something like sixty-two out of the one thousand and odd cases?—Yes; I think it would be about that.

1227. Do you know whether the number is a high number for a general hospital or a low one?—I should think it is very high, because I know that this form of disease is exceedingly common in Dunedin.

1228. Any particular form?—All forms of uterine trouble. I think it has something to do with the hills about the town.

1229. And you have a private practice, I suppose?—Yes, and from my private practice I am pretty convinced of that.

1230. You cannot say that, on account of the unsatisfactory conditions that prevailed in the Dunedin Hospital, you have from year to year reduced the number of your operations?—No. More people came in, and I had more operations to do.

1231. And the condition of the Hospital did not stand in your way of performing operations?—It certainly has done so. My operations would have been doubled if they had been turned out in half the time they should have been.

1232. What do you mean by that?—If I could have got a proper ward and healthy, hygienic conditions; and in addition to them being doubled, they would not have cost the Trustees one half-penny more, and I should have had better results.

1233. When did you come to the conclusion that the cases were not being turned out of the Hospital with as much despatch as they should be?—I cannot tell that exactly; I do not jump at conclusions, but form them by very slow process.

1234. And when by this very slow process did you come to the conclusion that the cases were going out unduly slowly?—I cannot say.

1235. Did you ever, before this inquiry, arrive at the conclusion that your cases were being unduly retarded?—Yes, certainly, and I reported cases of unnecessary delay. I think I can show you that in print; then probably you will believe it more readily than if I simply made the statement. I refer you to the cases of Alexander's operation. They occurred some time ago. They were on two women, and the operations were followed by suppuration, which went on for a long time.

1236. Have you referred to these cases before?—Yes. I sent this paper to the Trustees the day before their meeting at which they passed a series of resolutions condemning me hotly. They had that paper in their hands when they made their speeches. I suppose they had their speeches all prepared—they had them in their brains, in fact—and could not stop the delivery of them very well. It seems to me they had prepared their speeches, and you may judge of it from the speeches that were delivered on that occasion. Of course, these are only their opinions.

1237. Who were the Trustees that you complain of in this way?—I will give you their names if you wish. I should like to say, Mr. Chapman, that you have drawn this out of me. I wished to avoid it, and I do not think the Trustees will be much obliged to you for your action.

1238. I do not care whether the Trustees agree with it or not. You complain of some unpleasant treatment by the Trustees?—I do, undoubtedly.

1239. When?—I forwarded to them a printed document, and, although they had it in their hands at the time and knew they should inquire into it, they never even referred to it, but had their discussion printed fully in the newspapers.

1240. You say they had the discussion printed in the newspapers?—Yes; their meetings are generally held quietly, but this meeting was fully reported. The report showed to the general public that I was condemned for my injudicious utterances, when I was not heard in my own defence, and when they had the whole of my statement in their pockets.

1241. Did you intend this address of yours for private or public discussion?—I was perfectly willing to discuss it with the Trustees any way they liked; and I did not think they would condemn me behind my back.

1242. And you complain of the Trustees acting unfairly to you?—I do indeed.

1243. Were you acting fairly to them, having this knowledge of the insanitary condition of the Hospital in your mind, and never having made one word of complaint to them on the subject?—We did make complaints.

1244. Who are "we"?—The medical staff.

1245. Did you complain to the Trustees?—Certainly.

1246. Can you show me a scrap of paper in proof of that?—I have told you before that there were so many things that we complained about that we actually did not know where to begin.

1247. Can you point to any record in your minute-book of the medical staff, or any other book, in condemnation of the Hospital on account of its sanitary condition?—No, I cannot, but I can point out many other things that we considered more important. I am exceedingly sorry to have to go into this, but you have forced it on me.

1248. Did you consider the question of nursing was the most important?—I thought the nursing was very bad; and that it was a more important question than that of the septic condition of the Hospital. Bad nursing is apt to spread septic troubles.

1249. Yes, the nursing was the most important?—Yes, and it was the most radical change that was wanted.

1250. The necessity for a separate female ward—was that important?—Yes, from my point of view it was.

1251. The circumstance that the Hospital was a hot-bed of septic disease was more important than the insanitary condition of the Hospital?—I never said anything of the sort. But if you like to put it that way you can.

1252. I have taken down that expression—that the Hospital was a hot-bed of septic disease—from the lips of your own counsel. Not only did that expression fall from him, but has he not, on two subsequent occasions, asked you if it were not a fact that certain cases were of doubtful result, and would have been so had they remained in the Hospital; and that that doubt would have been determined only by death.

Mr. Solomon: I do not think my learned friend will say I put it seriously in that way. It is utterly unfounded on fact.

Mr. Chapman: I certainly thought you meant it.

Mr. Solomon: I did not think you thought I meant it for a moment. What I asked witness—and I repeated it about a dozen times and always got the same answer—was that no medical man could speak positively as to certain results arising from one case.

1253. *Mr. Chapman.*] Now, Dr. Batchelor, you have given a very qualified opinion as to the cause of death of Mrs. S——, and several others in the books?—I think I have given a decided opinion. I am not going to swear to it, if you mean that.

1254. Do you suggest you could not?—I said I would not. Perhaps some men would.

1255. But you say you consider Mrs. S——'s death due to entirely unhealthy influence?—Yes.

1256. And had she been operated on in a healthy ward with healthy surroundings you say that she would now be alive and well?—Yes, I indorse every word of that.

1257. And when did you come to know that the ward and its unhealthy surroundings was the cause of death?—I think I have had pretty good experience during that week, but I had had my suspicions a long time before that.

1258. Have you had anything more than suspicions?—I have had growing suspicions.

1259. You had growing suspicions beforehand, but yet you operated. Had you such suspicions in Sophia M——'s case?—Yes; I did not like the Hospital then any more than I do now.

1260. Will you give us the date?—I have told you I had suspicions from the first day I went to the Hospital, and they have been growing ever since.

1261. Can you point to any minute or to any complaint confirming these suspicions?—I can point to a lot of complaints.

1262. Can you point to any note or communication to the Trustees. Did you even hint it to them?—We thought it to be of the utmost importance. You do not seem to grasp the point, Mr. Chapman.

1263. Was the nursing more important then than subsequently, more important than the condition of the Hospital?—You do not understand it: it is even a difficult point for medical men to decide on.

1264. I ask you again, can you point to any complaint to the Trustees on this subject?—No.

1265. Of course you know what are the precautions recommended by Lawson Tait in these cases (I refer you to page 128)?—Yes.

1266. Now, in all these cases, did you suspect beforehand that you were going to have trouble?—What cases are you speaking of.

1267. Your own cases: the operations you had in the Hospital during the last four years, we will say?—I go to every operation with fear and trembling, because I do not know what the result will be.

1268. You assert you went to every operation with fear and trembling, not knowing what the results might be?—Yes.

1269. Did you communicate these fears to your patients?—We do not, as a rule; we are very careful what we say to our patients in the Hospital.

1270. You give them some idea of the dangers they have to undergo?—We do.

1271. Take the case of an emergency operation. Would you give the patient a pretty good idea of what risks he or she had to run?—Of course, we do not try to frighten our patients.

1272. You let their relatives and friends know of these risks, and let them have some voice in the matter?—We do.

1273. Did you ever communicate the fact to any of your patients that there was danger of blood-poisoning occurring in the Hospital?—I have told my patients so. And I have told some of them that they should not go into the Hospital, because they were better in their own homes. But, as a rule, they have not the conveniences in their homes, and are unable to pay for nurses. A great many factors come in.

1274. Do you say distinctly that you have told patients in the Hospital that they run a risk there from blood-poisoning?—I did not say that they would absolutely get blood-poisoning, but I told them that it would be better to have the operations done in their own homes. I have said that several times.

1275. We may expect to find presently, I suppose, that in surgical cases the results in the Dunedin Hospital will compare very badly with those of other hospitals in the colony?—I do not know I am sure. You may have very good and some bad surgeons on a staff.

1276. But I mean apart altogether from the abilities of the surgeons. I suppose that there are able surgeons in other parts of the colony?—I believe so.

1277. May we expect to find that generally the results of surgical cases in the Dunedin Hospital will compare unfavourably with those of the other large hospitals in the colony?—I should certainly expect so.

1278. *The Chairman.*] Then you would expect them to be less favourable here?—Yes.

1279. *Mr. Chapman.*] The Wellington Hospital is the model hospital of the colony, is it not?—Yes, I should say so.

1280. We may expect to find, I suppose, that in the Wellington Hospital the surgical cases have very much better results than can be obtained in Dunedin Hospital?—I should certainly think so.

1281. Are they not very much better?—I will not go too far, but I should certainly expect them to be better.

1282. The Dunedin Hospital has been a subject of condemnation for years, has it not?—And rightly so.

1283. In your own mind you say it has been, but you have not so expressed it?—I have expressed myself very strongly on the subject before now.

1284. Have you investigated the subject with reference to other hospitals?—No, I have not.

1285. The question is one of degree—whether results are good or bad?—No. I have investigated it by my own results. When I know that people have died who ought not to have died, and taking that in connection with the known bad hygienic condition of the Hospital, I say that they stand in the relation of cause and effect.

1286. Now, as to the matter of statistics: Do you admit that these you have produced have no real value?—No. A certain number go in, a certain number come out, and a certain number go out dead. These are facts. But when you come to take statistics to pieces you can make them prove almost anything you like.

1287. There may be some reason for that. Of itself the mere fact that a large proportion go out of a hospital dead is of no value, without an examination of the cases?—No. I say that the condition of the Auckland Hospital should be inquired into. It has a death rate which ought not to exist. The attention of the Inspector-General should have been drawn to it before.

1288. The death-rate in Wellington would be increased if the Wellington Hospital were allowed to be used as a poorhouse?—I do not know anything about that.

1289. Do you not know about its death-rate?—I never knew any reason why it should be used as a poorhouse. If you tell me that it is used as a poorhouse I will accept your statement, but that

would not absolve our Hospital for having a death-rate which is far too high. We have a frightful mortality here, I think. That fifty people should die here unnecessarily is something terrible to contemplate.

1290. The death-rate should be something like 5 per cent. you say?—I think it should be something like that.

1291. Is it the same at Seacliff?—I do not know anything about that, but it is nonsense to compare our death-rate with Seacliff's.

1292. Is the death-rate of a lunatic asylum higher than that of a hospital?—I think it is very much heavier. I do not care about lunatic asylums, which have nothing to do with this matter.

1293. You have, I suppose, some standard of comparison when you tell me that the death-rate of the Dunedin Hospital is too high?—Yes.

1294. Will you give us one?—That book of Lawson Tait's will show you.

1295. That is the average rate in the county hospitals that you spoke of the other day?—Yes, they are very much in the same position as far as I can judge with the Hospital here.

1296. And you have made your comparison with that?—Yes, but it is a rather unfair comparison.

1297. Unfair to what?—It is too favourable to Dunedin. Our death-rate being so high is less excusable. The Hospital death-rate should bear a ratio to the district death-rate. Our district death-rate is very low, and I should say that our Hospital death-rate should be proportionately low.

1298. Then we may take it that you have chosen the English county hospitals as your standard of comparison?—Yes, but I think we ought to have a better death-rate than they have.

1299. You think we ought to have better results?—Certainly.

1300. In England the average I find is a little above 5 per cent. In Wellington I see they had 6 per cent. for some years and 8 per cent. in other years; that would be very bad according to your standard?—Yes, 8 per cent. is very bad, but I should think that the 8 per cent. was before the new hospital was built at Wellington. I have not the slightest objection to state here that from my reading such a death-rate is far too high, and that it ought to have been seen into.

1301. If Wellington three years ago had a death-rate of 9 per cent., what would you say?—That it was theoretically bad.

1302. Whereas Dunedin was at 8·45. It follows of course that Wellington was worse than ours?—Quite so.

1303. And Auckland's stood at 10·99; that I suppose you would attribute to a bad hospital influence?—Undoubtedly. It should be inquired into. All our hospitals want very much closer attention than they are receiving at present.

1304. Then, practically, you condemn a hospital like Wellington if it has a death-rate of 9 per cent.?—Yes; and I can refer you to very good authority, which says that any hospital that has a death-rate of over 7 per cent. requires very careful looking into. Both in Holmes' and Tait's works the authors make some remarks as to what a hospital should be in this respect.

1305. You condemn a hospital like Wellington, because its mortality is over 8 per cent?—Yes.

1306. Would you ever condemn it if the percentage is over 6?—That is high. But you must make some allowance. There might be some epidemic disease which would, of course, run up the death-rate. I think you will admit that they had a large proportion of typhoid there last year.

1307. There was nothing in the way of epidemic there?—I believe there was.

1308. How many people died in Wellington from typhoid? Were there three?—I think there were more than that.

1309. How many died in the Hospital?—In what year do you want to know?

1310. When the typhoid epidemic you spoke about occurred in Wellington. If it occurred, you would expect the death-rate to be greatly enhanced, would you not?—I do not know. There are a great many circumstances that come into the question, and therefore I would not like to give you an answer.

1311. But it would be a material circumstance to remember if a typhoid epidemic did occur in Wellington?—One cannot carry in his head the number of deaths from different causes in different hospitals in the colony.

1312. Then why did you offer the typhoid epidemic as a solution of the death-rate?—I am willing to admit that I made a mistake.

1313. Are the classes of cases taken into the hospitals of this colony the same as are admitted into the county hospitals at Home?—I should think that they are almost exactly the same class of cases. I have been in several of the county hospitals at Home.

1314. Name one or two of them that you have been in?—Colchester, and Ipswich. I have been inside of them and remember them pretty well.

1315. Can you name any more?—No.

1316. Do you know any of the other hospitals in New Zealand as well as you know this one?—No; I know this one best.

1317. Do you know what is the healthiest part of New Zealand?—I do not.

1318. How does the West Coast stand for healthiness?—I do not know I am sure.

1319. Is not Hokitika about the healthiest part of New Zealand?—I do not know.

1320. Would you be surprised to hear that the death-rate of the hospital there is about 12 per cent.?—What is the size of the hospital?

1321. It is a small-sized hospital—about one-third of the number of patients ours has?—You must tell me the number of the beds.

1322. What would be the number of cases in Colchester Infirmary in the course of a year? Would it be a thousand?—I do not know, but you will find it in that book of Tait's. I mentioned it because I happened to know that hospital. Colchester has ninety-four beds.

1323. That is very nearly the same as in Dunedin?—The mortality is given at 5·2 per cent., and the district rate at 23.

1324. What is the average number of patients?—The average number of in-patients is 301. It gives the average duration as thirty-six days. It must be remembered that these statistics are drawn for five years.

1325. Colchester turns about three hundred patients a year against our 1,000?—Yes. I simply mentioned that hospital because I knew it.

1326. Another county hospital that you mentioned was Ipswich?—It has ninety beds. That is the only information I can find about it. I lived within six miles of these two towns, and that is how I happened to mention them.

1327. Do you give any London statistics?—I do not.

1328. Have you looked into them?—I have looked into the matter very carefully, and probably know more about it than you are aware of.

1329. Take St. Thomas's, London, for instance. Have you noticed the mortality there?—Yes. It has a very high mortality, and its condition has been brought forward very prominently. In one respect the hospital is conducted on similar lines to Dunedin Hospital. One or more wards are left "fallow," the result being that the other wards are always full, and consequently overcrowded. And this is one of the reasons to which their heavy mortality is attributed.

1330. Yet, of all the great cities, London we are told is almost the healthiest in the world, with the exception of Stockholm?—Stockholm I know nothing about: about London you are probably correct.

1331. The mortality of St. Thomas's is over 12 per cent.?—It is very bad indeed, and attention has been drawn to the fact.

1332. It is a modern hospital?—So far as the building is concerned it is a very fine one indeed.

1333. Let us take another London hospital—the Middlesex. I find that its death-rate is 12·92 per cent.?—You will find an explanation of that. The whole thing is referred to in Tait's book. One explanation of the heavy mortality in London—and it is a very reasonable one—is that they pick out the worst cases for these hospitals for the instruction of medical students.

1334. Is not that applicable to Dunedin to some extent?—I am afraid not.

1335. Are no bad cases sent here?—I do not know that it would affect our mortality in the slightest degree.

1336. Do not cases come from various parts of the colony here?—Very few do; and I am afraid very few will, until we get a better hospital.

1337. I find that in the London Hospital the percentage in one year was 11·8. Is there anything special about that?—Probably there was some reason for it. Holmes gives reasons, which I have already referred to.

1338. Speaking of cancer cases: do they tend to increase or decrease the mortality?—I suppose there is a heavy mortality in cancer; at least, I should think so.

1339. I will ask you to look at the figures for Dunedin last year. There were twenty-seven cancer cases, of which eleven died?—You are picking things to pieces, and I will do so too.

1340. But you have relied on these statistics?—I have relied on facts.

1341. May we take it then that the statistics which have been quoted are of no value?—No; their value depends on facts, and facts alone. It is only facts that I am going to deal with—facts as to the number who go into the Hospital, the number who go out, and the number who die.

1342. Are these the only facts?—These are the only ones that I am going to deal with.

1343. Then it is not worth while considering Tait's special explanation of London's mortality?—I do not think that that will help it much.

1344. Do you say that it is not worth while to look into Tait's explanation?—I have looked into it, and cannot find much help from it.

1345. Have you ever, in a case in which you felt you were proceeding to an operation in fear and trembling for the result, asked for a special ward to treat your patient in?—We always do in bad cases; and we get them, in fact.

1346. *The Chairman.*] Do you always get them?—Yes.

1347. *Mr. Chapman.*] Then you have never found any difficulty in getting a special ward?—I will not say never.

1348. You have made a special comparison between your cases in the Hospital and those outside?—I have.

1349. Have you had any deaths in your gynecological cases outside the Hospital?—I have.

1350. Many deaths?—No.

1351. Will you give us an idea of how many deaths you have had?—I will not give you the number of operations, but will give you them in detail.

1352. I do not want that?—You cannot have it in any other way.

1353. Can you not give us the number of your cases?—I will not do so. I will give you each individual case if you like, and everything about it; otherwise, a wrong impression would be created. All I wish to have is the truth.

1354. I ask you again: will you give the number of cases in which you have had deaths in your operations outside the Hospital?—No; because it will simply mislead you.

1355. *The Chairman.*] Why do you decline?—Because, to go into the results, without also giving the details of my cases, would not, I think, be fair to myself.

1356. Do you mean that the cases cannot be classified?—Not unless I give them individually. That is the only way you can get the true results. I have not the slightest objection to give full details of individual cases, but otherwise I shall not touch them.

1357. *Mr. Carew.*] You are destroying the value of your evidence if you refuse to answer

questions put to you. You should answer the question, and allow your counsel to elicit any information you want brought out by way of cross-examination?—Well, I refuse to give the bare number of my cases.

1358. *The Chairman.*] At the same time, you say that you are prepared to give details?—Yes, I am prepared to go fully into every abdominal case of which I have a record.

1359. Give details of every case you have had?—Yes.

1360. *Mr. Chapman.*] You have complained, amongst other things, of the system of managing the Hospital: of keeping one of the wards empty—one male and one female ward?—Yes.

1361. What is your complaint about that?—My complaint is that, though it may be a good thing in one way, inasmuch as you can air the wards, it is a bad thing in another way. It means that, the accommodation being scanty, the beds in the other wards are always full, or nearly so; and this increases the trouble we have with over-crowding.

1362. What is the usual number of patients in the ward which you attend?—I am sure I do not know.

1363. Can you tell us how many beds there are?—There are sixteen.

1364. I ask you again, What is the usual number of patients?—I cannot tell, but I dare say it is about twelve or thirteen. That is about the average.

1365. Do you think that that is too many?—Do you mean for the beds in their present position?

1366. Yes?—Undoubtedly it is.

1367. Are there too many patients, or too many beds?—Both. That is my main contention: that the Hospital is over-crowded.

1368. Do you say that that is your main contention?—Well, it is one of my contentions.

1369. Was that a matter which you complained of to the Trustees at any time?—Yes; I certainly complained of it to the staff.

1370. When did you do so?—At the meeting when we drew attention to the defective hygienic condition of the Hospital. You will find it referred to then.

1371. Then it was in the month of May, last year, that you complained of it?—I think it was in May.

1372. Up to that time had you ever formulated a complaint on the subject?—No.

1373. Had you yourself complained of it to your colleagues?—I do not know I am sure. We had all done it in a way, because for years we had recognised that the beds were too close together.

1374. When was that?—Ever since I have been connected with the Hospital.

1375. What effect do you attribute to it?—The over-crowding is one of the greatest dangers to a hospital.

1376. And you say that it has been spoken about amongst the staff for years?—Yes; that the beds were too close together.

1377. And that you spoke of as amounting to over-crowding?—Yes. I recognised it as soon as I went to the Hospital.

1378. When was the alteration made of allowing two wards to remain empty?—I do not know.

1379. Is it long back?—I do not know. Mr. Burns knows all about that.

1380. Has it not been a particularly recent thing?—I really do not know.

1381. Surely you have been familiar with the working of the Hospital?—I really do not know. It would only be guesswork were I to attempt to tell you.

1382. Did it ever receive the condemnation or approval of the medical staff?—I do not know that it was ever brought before them. If it were it must have been approved, from the fact that the advantages of having a ward empty have been recognised by the staff.

1383. If it had ever been brought up, you think that it received the approval of the staff. At any rate it had not met with their disapproval?—I never heard that it was brought before the staff. Attention has been drawn to it by Professor MacGregor, but I do not look on him as any authority on hospital matters.

1384. You say that he is not an authority at all?—He is not.

1385. I should like you to tell us what are his shortcomings. At any rate this was a matter that Dr. MacGregor has approved?—Yes; I should not have referred to the matter had it not been drawn from me in cross-examination.

1386. Was Dr. Grabham an authority on hospitals?—No. I do not think that he knew much about hospitals.

1387. When did you come to the conclusion that neither of these gentlemen was an authority on hospital matters?—When I came to read up authorities on the subject I found out that they did not know very much about the thing, and I came to the conclusion that if these gentlemen had understood hospital matters thoroughly they must have drawn attention long before to the condition of the Hospital.

1388. But to which you had never drawn attention yourself?—No.

1389. We may take it, I suppose, that you have learnt something about hospital matters. Do the other medical gentlemen in Dunedin know anything about them?—I do not think that they know too much.

1390. Did the members of the medical staff during the past five years call attention to any of these matters?—I think that we all recognised that the wards were overcrowded and badly ventilated. But as for working out the thing methodically or on scientific principles, no one attempted to do so until Dr. Lindo Ferguson did last May twelvemonths. We also objected to the state of the waterclosets and of the baths. These—what I may call permanent defects—we all recognised.

1391. You were all agreed about these things, you say, though you gave no expression to your opinions?—I am sure of that.

1392. Can you put your fingers on any expression of your agreement on these subjects?—I do not know that I can bring any evidence of these matters having been brought before the medical men themselves, but they will all tell you that they recognised these and other defects.

1393. Such defects as you have described here?—Yes; all of them must have been recognised.

1394. I find that Dr. Grabham, reporting on the 14th May on a visit he paid to the Dunedin Hospital in January, 1886, says: "One of the wards, as usual, I found empty and in process of being cleaned. The others were in their usual good order." You know of the practice of having one ward empty in a sort of rotation, one on the male and one on the female side?—Yes.

1395. I suppose you read the Inspector-General's reports from time to time?—I have read the last two closely.

1396. The Inspector-General is responsible for these matters, is he not?—I suppose he is. At all events, I should think so.

1397. If he found anything grossly wrong he ought to call attention to it?—I should think so.

1398. Have you ever found in his report anything seriously condemnatory of the Dunedin Hospital?—He makes a sort of general tour of the Hospital, but he does not appear to deal with any defects, unless it be structural ones. As to questions like there being a sufficient number of beds in a ward, these ought, I think, to be brought out more prominently. I do not think that his attention could have been directed to the hygienic state of the Hospital, or I am sure he would have spoken more strongly about it.

1399. Do you know whether this practice of emptying wards has been approved by the Trustees?—I suppose it has. It stands to reason that if you have plenty of room it is an excellent thing; but if unfortunately you have not plenty of room, as in the Dunedin Hospital, then it leads to over-crowding, which is an evil.

1400. Professor Macgregor was at one time a member of the medical staff of the Dunedin Hospital, was he not?—I do not remember it. I do not think he had anything to do with the Hospital.

1401. I certainly was under that impression?—I think you are wrong.

1402. It was before you came to this colony?—He never was; Mr. Burns says so.

1403. I want to call your attention to a few passages in the report of Dr. Grabham for 1886. He says, "I have visited this Hospital three times during 1886. My last inspection was made on the 27th January, 1886, when I examined every part of the institution, including the outbuildings and the grounds. Though not originally intended for a hospital, this large and handsome building has, with great skill, been so converted that it serves its purpose reasonably well." That was your opinion at one time, was it not?—No.

1404. But with a little of the taxpayers' money you think it might be improved?—It might be.

1405. "The site is in the centre of the most populous part of the city, and, though it is exceedingly convenient from its accessibility, it is not such a situation as would commend itself for a hospital, being very low-lying and having a swampy subsoil. Everything possible, however, has been done to obviate these disadvantages." Do you agree with that?—What about?

1406. The condemnation of the site?—I would not give an opinion about that.

1407. "The basement has been ventilated and properly floored, so that, instead of being found damp, it is utilised for kitchen and store-accommodation, and contains the boiler- and furnace-room besides. This arrangement, though convenient in some respects, is evidently a great drawback so far as the wards above are concerned. The great and saving feature of the building is the great hall, around which on the ground-floor and first floor the wards and accessory offices are arranged, those on the first floor opening off a projecting corridor." That is one of the features which you condemn the most, is it not?—I do not condemn it. I do not think it is a good feature, because it prevents cross-ventilation. As a matter of fact, there is no cross-ventilation in our Hospital.

1408. "This central space extends from the floor to the roof, and has an area of 120ft. by 51ft. It is suitably furnished with linoleum and matting, which covers the right- and left-hand staircases, and is carried all round the corridor on the first floor. On the ground-floor the right-hand side of the hall is occupied by the secretary's room and the staff room, which is mostly used by the students. On the left-hand side are the operating-room, the staff dining-room, and one room off the dining-room for Mrs. Burton, the matron. The remaining two sides of the central hall are occupied by four large male wards, two on each side, all arranged and furnished in the same way. Ward No. 1 is 54ft. by 24ft. 6in., and 16ft. high. It has two large windows in the end-wall and five windows on the north-west side. In each window there is a movable division, regulated by a supporting arm resting on a nail, besides a flap ventilator at the foot, with perforated-iron sides. . . . . The beds are seventeen in number, all occupied. One of these is a patent folding-bed, with elaborate fittings, patented by Mr. Jowsey, of Timaru; six are ordinary wooden beds, nine are common iron beds, and there is one chair bed used for accident cases. Seven beds have chaff mattrasses, the rest are all hair. There is a neat locker, with tray top, for each bed. The head-cards give particulars about the patient and his diet: and a thermic chart shows the changes of the pulse, respiration, skin, tongue, bowels, and urine; also the patient's weight, and the duration of the disease. There is also a card showing the treatment, and the doctor's notes." And it goes on to say: "The whole appearance of the ward is comfortable, and everything is scrupulously clean and neat." Are the wards clean and neat?—They are clean in the ordinary acceptation of the word, but not in a surgical sense.

1409. Do you agree with what Dr. MacGregor says there?—I do not. I will answer you in this way: I think that Dr. MacGregor, in that report, has done the same thing that he has done in other reports: he draws attention to minor defects, but misses the essential ones, such as over-crowding, cubic space, square space, bed-space, &c.

1410. It is an extraordinary thing, is it not, that none of the medical staff ever called attention to these horrors?—I do not blame the staff, they were trying to get reforms effected.

1411. But the staff were people who were always on the spot, while Dr. MacGregor was only here about twice a year?—Well, I blame myself as one of the staff, and I have done so from the first.

1412. I suppose you were afraid about "kicking up a row," as you have termed it?—I blame myself in common with the staff for not having called attention to these defects with sufficient prominence. That was the gist of my remarks in one of my earliest speeches. I blamed the staff and myself, as a member of it, for not having pressed home the necessity for these reforms, and I say so still. I think that we should have brought them prominently before Dr. MacGregor.

1413. The Inspector further says: "Flowers are plentifully supplied to all the wards. Ventilation is secured by openings in the walls a little below the ceiling—one opens into the chimney-shaft, covered with a perforated-iron plate, and two open into the large central hall. One of the large wards is always kept vacant for purification, and I hope that this will be continued. The bath-room, lavatory, and closet are separated from the ward simply by a painted and grained partition. This is perhaps the greatest blemish in the Hospital, and unfortunately it is incurable." By the by, speaking about baths, have you made any complaints about the baths—that they may have had a tendency to carry septic disease from one patient to another?—No.

1414. What was your objection to the baths?—I objected to the steam getting into the general ward.

1415. But you did not object to the baths as being a medium of transferring the germs of disease?—I think that was an original theory of Mr. Solomon's.

1416. Now I wish to call your attention to Rule 78 of the Hospital By-laws, which says: "The honorary staff shall, immediately after their election, form a medical committee, and elect one of their number chairman, and one secretary. They shall consider the medical, surgical, and hygienic subjects connected with the Hospital, and forward their recommendations to the Trustees in writing through their secretary." You say that they have not performed their duty?—I say that we have tried to effect reforms gradually. We commenced with the resolutions about the nursing, this matter having been brought forward several years ago by Dr. Colquhoun; but the Trustees took in hand the operating-room first.

1417. Then the nursing was a secondary matter; until then it was not even thought worth mentioning?—I beg to differ from you entirely. We felt that it would be no good to attempt to do too much at once. At all events, that was the view I took of it.

THURSDAY, 28th August, 1890.

Dr. BATCHELOR'S cross-examination continued.

Witness: The Chairman asked me to prepare a copy of my records of abdominal operations and results, and I have done so. [Document handed in: Ex. xxiv.]

Mr. Chapman: It would perhaps be convenient to put in the copy of the by-laws. [Copy of by-laws put in: Ex. xxv.]

Witness: With regard to the by-laws, I may say that to the best of my belief I have never had a copy of them in my possession. I do not think I need to trouble my head about them. I try to do my duty by my patients, and I do not care a scrap about the by-laws, which I have not read.

1418. *Mr. Chapman.*] Was not a copy of the by-laws sent to you when you were appointed?—Not so far as I am aware, though I may be mistaken. I do not think they were in existence when I was appointed.

1419. Here is a description of the building, in Dr. MacGregor's first report on the Hospital: "I gave every patient an opportunity of making any complaint to me privately, and, instead of complaining, all were unanimous in praising the treatment they received."—Is that for the medical treatment, or what?

1420. I am just reading from the report?—I certainly think they should be very grateful for the medical treatment they received, and that they are attended to very carefully now.

1421. But not for the other treatment?—Certainly not; they know nothing about it.

1422. Then, if the patients have made no complaints about their treatment, does not that show their appreciation of it?—They do not know anything better. They do not understand hygiene or the many points of hospital management. If they had ever been in a better hospital they would have made many complaints.

1423. I will read you another passage from Dr. MacGregor's report: "This Hospital stands pre-eminent in the colony for the admirable completeness of its arrangements for the medical and surgical treatment of the patients."—I quite agree with Dr. MacGregor in what he says there. He wishes to bring out the advantages of the Medical School—that is evidently what he is trying to do there.

1424. Does he make any reference to the Medical School?—At any rate, that is how I read it.

1425. He goes on to say, "Although the building is inferior to several of the other hospitals, from the fact that it was not designed originally for its present purpose, yet the advantage it possesses, from its connection with the thriving and vigorous Medical School of Dunedin, gives it all the essentials of hospital treatment and management and unmistakeable superiority"?—Quite so. Undoubtedly it is the Medical School that gives it that superiority it does, in spite of terrible defects of hygiene and other conditions.

1426. But I call your attention to the fact that Dr. MacGregor says, "There is simply no comparison between it and any other hospital in the colony in that respect"?—That is in regard to medical attendance—at all events that is how I read it.

1427. He goes on to say, "I hope that the Hospital Committee will not forget what this superiority depends on"?—He evidently thought that the Hospital Committee did not recognise it, and I agree with him that they did not.

1428. "I am glad to hear that there is a movement afoot to remove the lying-in ward from the Hospital, and I hope that it will be speedily merged in what may ultimately become a maternity hospital for the city." Do you agree with that?—It has been removed from this place.

1429. *The Chairman.*] The lying-in ward has been removed from the Hospital?—Yes, from the place where it was to the Benevolent Institution.

1430. *Mr. Chapman.*] "The removal of the old chronic cases who used to incumber the institution is a great gain, and I hope the staff will steadily resist all temptations to allow the accumulations to begin again." I suppose that is common ground, is it not?—I quite agree with Dr. MacGregor there.

1431. "I made a careful inspection of all the parts of the annexe behind the Hospital, as well as of the garden and grounds, and I content myself with saying that I found everything in admirable order." You will notice that he speaks of the Hospital as being in very good order?—Does he?

1432. Apparently he does?—I rather think that he refers to the annexes. But he speaks somewhat indefinitely all through the report.

1433. Is there as much as a word of condemnation throughout that report?—Which report do you mean? I have only seen the last two reports.

1434. You will note that he refers to the closets in the wards as being the greatest blemish?—But he says distinctly that the building is inferior to other large hospitals—at least that is my recollection of the report.

1435. *The Chairman.*] Dr. MacGregor points out that it was not built for a hospital?—Yes; in his report he speaks of structural defects, but he does not draw particular attention to them.

1436. *Mr. Chapman.*] Now I wish to call your attention to some expressions of Dr. Grabham's. In his report for 1885 he says, "The sanitary state of the building is good, but the drainage system is radically bad, the earthenware pipes running through the basement frequently becoming choked, and giving much trouble and offensive odour when being cleaned." Now, that part—the whole of the drainage system passing under the building—has been entirely altered?—I am very glad to hear it.

1437. Were you not aware of it?—No.

1438. Have you not been paying any attention to what has been going on?—I must say that I have not, to what was going on underground.

1439. But you were a member of the staff?—I suppose that I was.

1440. Did not this subject of drainage have any interest for you?—I confess that I have not given any attention to it.

1441. Was that because you regarded it as unimportant?—No; but because I had had my attention drawn more particularly to other things, more interesting, possibly.

1442. Did the drainage ever strike you as being bad?—I never inquired into it.

1443. You never troubled to inquire into it?—No.

1444. Did you never trace any evil to it?—No, I did not.

1445. Was not the matter of the drainage discussed amongst the members of the medical staff?—I do not remember it being discussed.

1446. Do you mean to say that you do not remember the medical staff discussing the drainage system before it was altered?—It may have been, but I do not remember anything about it.

1447. In the same report of Dr. Grabham's which I have just quoted from are these expressions: "Since my last visit I notice that many improvements have been carried out. The basement has been much improved by better lighting and ventilation; the central part has been cleared and levelled; two new staircases from the central hall above are now available for the male and female servants, who take their meals below. A very suitable room has also been fitted up in the basement for the separate treatment of excited or violent patients"?—A very suitable room, do you say? Does he refer to the "dungeon"?

1448. Yes?—I think it a highly unsuitable and dangerous room. I would like to hear what people have died there.

1449. Died of what?—I do not know. I should say that a good number have died from pneumonia, after drunkenness, through being put in there. It is just a place to kill them.

1450. But Dr. Grabham speaks of it as being a very suitable place?—That only confirms the opinion I have expressed previously about his knowledge of hospitals.

1451. Dr. Grabham does not know anything about hospitals, and you say that Dr. MacGregor knows very little about them?—No, I do not say that he knows nothing; I do not think he knows much. I think they can know very little about hospitals, or else they must have drawn attention in their reports to the effects of over-crowding, bad ventilation, and the deficient square- and bed-spaces in our Hospital. I think with a very elementary knowledge of hospitals one must be struck with these defects, because I think that is the first thing that anybody who knows anything about hospitals would inquire into.

1452. They are the people who should know about hospitals. If they do not, who does?—I do not think anybody here knows very much about it.

1453. Perhaps you do not know anything about it yourself?—I have, through my reading, gained a little information about it. I think I understand about the square- and bed-space, the number of square feet that a patient should have, and such matters of detail.

1454. When did these deficiencies in connection with our Hospital strike you?—They have always struck me as being deficient.

1455. Struck you from the first?—Yes.

1456. Struck you that it was overcrowded, and smelt very badly?—Undoubtedly.
1457. And these things have then been going on for fourteen years?—I think it is about twelve years since I became connected with the Hospital.
1458. Well then, twelve years?—Yes, undoubtedly.
1459. May we take it that these things were known to your colleagues of the medical staff? I do not know.
1460. Had they any more than the very slight knowledge possessed by Dr. MacGregor?—I do not suppose that they had very much more knowledge than he.
1461. Did your colleagues on the staff complain of the Hospital being overcrowded and smelling very badly?—Yes, they have been constantly complaining.
1462. All these twelve years, you say?—Yes, off and on. I have heard them complain constantly.
1463. May we take it that the medical staff were wholly discontented with the state of the Hospital?—You see a great many of us got accustomed at last to the state of affairs. I know I did myself to some extent. But it was after I had seen other hospitals that I was struck with our Hospital being such a terribly bad place. One grows accustomed to one's home, so to speak.
1464. After seeing other hospitals where?—In the Australian Colonies, and seeing the Wellington and Christchurch Hospitals. It was then that I arrived at the conclusion that some action —pretty strong action—should be taken, and I took it.
1465. At what date are you speaking of in regard to Wellington Hospital?—I think I was there either at the end of January or early in February, 1889.
1466. Who was in charge there then?—Dr. Truby King.
1467. Do you know how long he had been in charge there?—Not very long, I fancy.
1468. Are these hospitals that you visited model ones?—I did not say that they are model ones. They have been up for some years.
1469. I think you used the word yourself?—Compared with Dunedin Hospital they are certainly.
1470. Did you find any overcrowding or any smells in the Wellington Hospital?—Certainly not. There was nothing of either kind when I visited it.
1471. How long were you there?—About one and a half hours.
1472. And a visit of one and a half hours to that Hospital disgusted you intensely with our Hospital?—Yes. I was struck very much by the contrast.
1473. I will now read you an extract from Dr. Grabham's report for 1886:—"A most important improvement has been carried out in diverting the whole of the drains from the basement, and running them outside the buildings direct into the city sewers."—Direct into the city sewers! That is a rather funny thing.
1474. That is to say, it was not run into a cesspit. That was a matter which struck you so little that it apparently did not rest in your memory?—Yes. But I quite admit that it is an improvement.
1475. Dr. Grabham goes on to say: "Nothing has yet been done to provide a special ward for children, which is much needed." Did the staff agree with that?—Yes, they do.
1476. Did the staff concur?—I do not think they were very strong about the children's ward.
1477. Did you concur?—I did not oppose it particularly.
1478. Was it agreed to, after discussion among the staff?—I have already told you that I do not think we were very strong on it.
1479. You thought other things were more necessary?—I did.
1480. Did you specify to the staff what you considered to be more necessary at that time?
1481. *The Chairman.*] What time was that?—Four or five years ago. I think there is a minute of the staff about that children's ward.
The Chairman: I wish to point out that what we have to do is to inquire into the present state of the Hospital. I do not think it is necessary to go into the past state of the Hospital, which is a little outside the scope of our inquiry.
Mr. Chapman: I desire to test the value of Dr. Batchelor's opinions.
1482. *Mr. Chapman.*] What was the state of the Hospital in 1883?—It was very bad.
1483. And it "has been getting steadily worse ever since"?—I should like to be quite sure about that. I am rather doubtful about that statement. I do not think I ever made such a statement.
1484. I see your words were: "There certainly has been no improvement worth mentioning"?—I certainly did say that.
1485. When the medical staff were recommending a ward for children, what matters had you insisted on as being more important?—I really do not know. It is a long time to think back. But the recommendation which I proposed as being more important than any other was an improvement in the nursing. I felt very strongly on that matter. I never saw wardsmen before I came here.
1486. *Mr. Solomon.*] You succeeded in carrying that out?—It has not been done yet, but the Trustees have agreed to do it.
Mr. White: Why, it was agreed to four years ago, but we could not do it for want of funds.
1487. *Mr. Chapman.*] Dr. Grabham goes on to say: "The diseases of women can be treated in the ordinary wards, while the experience in midwifery required of medical students should be gained (as in London and elsewhere) at the homes of the poor."—How long ago was that?
1488. In 1886.—I should say that Dr. Grabham knew nothing about gynecology.
1489. Do you read these reports as they come out?—I have read them for the last two years, but I do not remember having them before that.
1490. Did you read the particular report in which that expression occurs?—No, I did not. I never heard it before.

1491. In one of his reports Dr. MacGregor says: "A most important feature of the management of this Hospital is the invaluable practice that prevails of always keeping one of the wards empty for the purpose of thorough disinfection and cleansing. A very great improvement has been effected in removing the lying-in ward, and devoting the space to a children's ward, which contains twelve beds"—that corroborates what Dr. Grabham said in an earlier report—"as I pointed out last year, the existence of a flourishing Medical School in connection with this Hospital gives a completeness and thoroughness to its medical and surgical arrangements that we look for in vain anywhere else in New Zealand"?—That corroborates what I said before, that in his previous report Dr. MacGregor was specially alluding to the Medical School and not to the Hospital.

1492. In his last report but one—that for 1889—Dr. MacGregor says: "I inspected the Hospital on the 30th January, 1889. I was particularly careful to inquire of the patients in all the wards, without any official being present, as to how they were treated by the nurses. Although the fullest opportunity was afforded, I heard not a single complaint." Observe that he was very particular to inquire as to complaints, but "not a single complaint was made."—You will find, I believe, in all cases like this, that people are frightened to complain. Someone hears of such a complaint, and it gets to the authorities, and those who complain suffer for it in some way; that is my opinion, at any rate. They might complain when they go out, but they will not do so while they are in. That is my experience.

1493. Dr. MacGregor further says: "No one doubts the superiority of trained female nurses over the class of male nurses that have hitherto of necessity been employed in the Dunedin Hospital. Especially of late years, it has become possible to get for this work well educated ladies, who are very different from the old-fashioned type of hospital nurse; and no doubt it was somewhat trying that the Hospital, which in all the essentials of medical and surgical treatment of disease was ahead of all the other hospitals of the colony, should, nevertheless, be the only one of our large hospitals where the best system of nursing was unattainable"?—As to the nursing, that has been changed, and I am quite satisfied with the proposed alteration.

1494. Dr. MacGregor further says: "This is the explanation of the agitation that has taken place over the condition of this Hospital; and the rapidity with which the agitation answered its purpose—of hastening the building of a nurses' home and certain special wards—while it is a subject of congratulation to all, yet seems to me to have been dearly bought by the unjustifiably evil reputation which has been fixed on the Hospital all over these colonies. The evils complained of had all been previously pointed out so far as they were real, and steps were being taken to remedy them." Do you agree with that?—Yes, but I should like to make a remark about that: that I consider when those in authority fail to point out defects that they should point out that these defects are likely to go on. After my experience, I do not think that many medical men will in future point out defects which an Inspector has overlooked.

1495. Is it not the duty of someone to point out these things to the Inspector-General? Ought not the medical staff to point out these defects?—The medical staff have pointed them out, and I contend that they ought to have been emphasized by the Inspector-General. If the truth were to be told, the trouble arises out of the administration of the Charitable Aid Act. That is where all the serious trouble comes in in my opinion.

1496. Another passage in Dr. MacGregor's report says: "Except in these evils, which the structural deficiences of the building caused, I affirm that this Hospital was well managed and the patients well treated."—Possibly that refers to medical treatment.

1497. Well treated medically? Is that all? He commends the nursing also. I understand him to mean that the patients are "well treated" generally?—Well, I will not go that length. It all depends on what the word "treatment" is intended to imply. If you mean general treatment, *i.e.*, nursing, dietetic, and hygienic, then I think they are not well treated; but if you mean medical treatment, then I think that they are well treated.

1498. But you recognize that a few reforms have taken place in the building?—Yes, there have been a few reforms.

1499. During the past twelve years?—I recognise, in fact, that there have been a good many minor improvements, but not what there should have been. The most important defects have not been remedied.

1500. What do you say they are?—Well, we will begin with the nurses. That reform has been promised during the last three months; it is going to be reformed. We are to have female nurses. That, in my opinion, is the great reform of all. Then there is over-crowding, and the unhealthy state of the wards: that is another great reform which requires to be done. Doing away with the waterclosets and baths in the wards is another reform that is needed. Another needed reform is special wards for special cases.

1501. Practically, all these things would necessitate a new building?—That is an opinion I have formed only lately.

1502. *The Chairman.*] About the nursing. Is it imperfect or insufficient? Have you not had enough nurses, or are they not sufficiently trained, or what?—We have had female nurses only for the female wards, and wardsmen for the men's wards. A certain section of the staff were opposed to this alteration. Female nursing has been accepted in all the large hospitals at Home and elsewhere. Money was collected by private gentlemen with the distinct object of enabling the Trustees to effect this reform in our nursing system. The Trustees, however, refused to accept the money until three months ago. The only reason that I could see why they would not alter the system was that they were afraid that it might involve additional expenditure. They made the alteration after inquiring all over the Australian Colonies.

1503. When was that decided?—Three months ago; but the change has not been carried out yet. I do not think that any steps have been taken in the matter up to the present.

1504. *Mr. Chapman.*] Do you say that the Trustees refused the money for that?—I do most distinctly. It was offered to them several times and refused.

1505. Do you say that they refused the money for the nurses' home?—Yes; they refused it on the conditions on which it was offered. The money had been collected for the specific object of providing accommodation for female nurses. The Trustees agreed to erect a nurses' home, but would not bind themselves to make any radical change in the nursing system; and immediately they did agree to this change the money was handed over.

1506. Do you know the number of female nurses there are in the Hospital now?—I think there are about ten.

Mr. Chapman: I believe there are twelve.

The Chairman: I took down nine when I was there the other day. They said they had ten, but there is one short just now.

1507. *Mr. Chapman.*] Do you know how many there were formerly?—I know that the nursing system was very bad before.

1508. But it has been improved?—Yes.

1509. Since when?—During the last two or three years some improvement has been effected.

1510. But I am referring only to the female nurses just now?—That matter is settled, I think, so it is only wasting time to discuss it now.

1511. You think it is settled?—I hope so, and believe it is.

1512. You said the other day that there had been very little improvements made in the Hospital—that they were scarcely worth while speaking about. I want you to read over this list [handed to witness]?—My impression is that I said that there had not been any radical changes in the conditions of the Hospital.

1513. I understood you to say that there had not been any material improvements since you had been connected with the Hospital. I am now going to call your attention to certain things that have been done. [The following list read to witness]: (1.) Drains have been removed from under the building, connected with the sewers, trapped and ventilated, and the large dangerous cesspit which formerly received all the drainage has been filled up. (See Dr. Grabham's Report.) (2.) The basement under the main hall has been opened up, lighted, doors and other openings made, the floor levelled and asphalted. (3.) The lying-in ward, which was very strongly condemned by Drs. Grabham and MacGregor, has been abolished. It was described as a source of great danger to the Hospital. (4.) As recommended by the Inspector-General the rooms formerly used as lying-in wards were converted into children's wards, ventilated, windows altered, closet, bath-room, and scullery added, and made as perfect as possible under the circumstances. (5.) The waterclosets in all the wards have been altered, the old pan-closets were removed, and the most modern approved sanitary closets substituted. The closets were ventilated, and those in the surgical wards cemented. (6.) The old operating-room (now the students- and casualty-room) was described as a source of great danger to the patients, being much too small, and having no proper seats or appliances. Students stood close round the operating-table, used the basins, sponges, &c. The light was very bad, so much so, that the operating-table had at times to be moved (sometimes five or six times during an operation. The patient was carried into the room, and chloroformed there, the whole surroundings being very objectionable. (7.) The new operating-theatre was erected and completed with all the latest and best appliances obtainable, Dr. Maunsell describing it as the finest theatre in the southern hemisphere. (8.) The room for violent and *delirium tremens* patients was padded and very greatly improved, and made safe. (9.) All the mattresses have been renewed except those in the lock-ward. New bedsteads ordered. (10.) The surgical wards have been cemented with impervious cement, painted, varnished, &c. (11.) Greater number of nurses and junior nurses, formerly four, now twelve. (12.) Ambulance wagon, litter, American chairs, air-beds, movable baths, &c., obtained. (13.) Fencing and buildings at back on both sides removed, letting in much more air and light. (14.) New instruments obtained, microscope and other appliances for pathologist. (15.) Special ward for female ophthalmic cases prepared in front tower; ventilated, improved, and waterclosets removed therefrom. (16.) Reading-room set apart for patients, and furnished with books, periodicals, piano, and organ. (17.) Grounds greatly improved, levelled, paths, flower-beds, borders, &c., prepared and laid out. The ground drained where required, and otherwise improved. (18.) New *post-mortem* room provided, and separated from the dead-house. The *post-mortem* room is not very good, even now, but is very much better than formerly. (19.) The wards have been ventilated. (20.) Chronic cases were removed to the Benevolent Institution.

Mr. Solomon thought that time was being wasted by going into these matters. Because certain improvements had been made was no answer to others, which should have been done, not being attempted. Dr. Batchelor was in no way attacking the Trustees. Yet here was a vigorous defence of the Trustees, against whom there was no charge at all.

Mr. Chapman submitted that he was quite justified in pursuing this line of examination.

1514. *The Chairman.*] I understand you to say that the only defect which has been remedied, in addition to what is mentioned in that memorandum, is the operating-theatre?—Yes, that is the only important reform. There are a good many doubtful points about these other things. As regards instruments, we have a great difficulty in getting what we require, and often have to take our own. I remember on one occasion meeting the Chairman of the Trustees when I was returning from an operation. Noticing that I was carrying a bag, he made some remark about it, and I then complained about being obliged to carry my own instruments to and from a hospital operation. He seemed surprised at my complaining, and asked what I expected, evidently thinking that it was quite right I should supply my own instruments. It shows pretty well the knowledge these gentlemen have of hospital matters and of hospital management.

1515. Do you mean to say that you cannot get suitable instruments?—Not suitable for my work, certainly. I answer for myself, at any rate.

1576. When the matters of which you have complained came to be discussed by the medical

staff, you referred, did you not, to the subject of a female ward as being a subject of your own?—I do not understand your question.

1577. There was a meeting of the staff on the 6th March, 1889, was there not?—Yes; there was a discussion on my address.

1578. You say: "Then I brought forward the necessity for a distinct ward for diseases of women. - That is the only new proposal I laid before the Trustees. I look upon this distinct ward for the treatment of diseases of women as a pet scheme of my own, and it is the only thing I claim to have brought forward in my address that has not received the attention of the staff"?—Yes, that is quite right, and I am glad that you give me an opportunity of referring to it. There has been a good deal of misunderstanding about it. What I have all along contended for is this: That the Trustees were in duty bound to make the general wards of the Hospital fairly healthy. This matter of a separate ward for the diseases of women to some might appear a matter of sentiment, and for that reason I made an effort to collect money from those most interested, and who would most probably sympathize, viz., the women.

1519. That was apparently the first time that you had urged on the Trustees that the wards were unsatisfactory?—Nothing of the kind. I have answered that question twenty times already.

1520. Can you refer me to any earlier official document?—No, I cannot.

1521. This expression also occurs in your address: "So long as we stick to our facts and agree together upon them, I am certain that we shall succeed in bringing about those reforms that have been so long advocated by members of this staff"?—Yes, that has been the trouble in the past, because we have not stuck together.

1522. Who have not stuck together?—The medical men.

1523. Do you mean that the medical staff have not been unanimous?—No; they have not been. Well, I think I should modify that, to some extent. The staff have been pretty unanimous on the whole, but there have been influences outside the medical staff at work.

1524. *Mr. Chapman.*] Did you not all agree as to your facts?—No. Unfortunately, some gentlemen do not work very cordially, and do not assist very much in these matters.

1525. Do you mean in seeking for reforms?—Yes. I think the best way to explain is that there are many different elements in the staff. Some are enthusiastic, and have been very willing to assist in every way, while others have been indifferent, and even careless; others, again, are not sure of their position on the staff, and do not care to jeopardise it by falling foul of the Trustees. These are some of the reasons which induced me to deliver that address independently of the staff. I felt certain that I could not depend on receiving from them such strong support as I wanted, and I thought it would carry more weight if delivered by myself, than if it were cut down and modified at a staff meeting.

1526. *The Chairman.*] Do you mean that the medical staff have not given you a cordial support in urging these reforms?—It has not been a unanimously cordial support.

1527. *Mr. Chapman,*] You sent in your address as emanating from yourself, and not from the staff?—Yes.

1528. And that address or speech was sent afterwards to the medical staff, who took it up?—Yes.

1529. You did not find them unanimous as to the facts?—I think they were pretty unanimous in regard to the facts.

1530. *The Chairman.*] You are speaking of the report of the 29th May?—No; I am speaking of my own address.

1531. *Mr. Chapman.*] And that was referred by the Trustees to the medical staff?—Yes. I had, prior to sending it in to the Trustees, told the staff that I was preparing it, and they allowed me to send it in, and postponed their annual motion in regard to proposed nursing reform.

1532. In addressing your colleagues you say: "At that time you will find in the report that several of the cases which I had already noted were brought before the Trustees of the Hospital, and these cases were used as strong arguments for the necessity of reforms." Did the Trustees meet you fairly then?—Yes.

1533. Then you go on to say: "What did the Trustees do? They then said to us, 'We admit that reforms are necessary; point out what you consider the most essential and important reform;' and we did what I now think showed great want of tact—we suggested the operating-room."—Yes; I think we did show want of tact. We suggested the operating-theatre as the most important and urgent reform; but I do not know that it was more necessary than some of the other reforms. The public took up the idea of a theatre as a place where we were wont to amuse ourselves.

1534. Then you went on to say: "That may have been, from our point of view, perfectly correct; but it was not from the point of view of the public. The operating-room was a thing that the public take no interest in. They hardly think it is required, and I think that we did wrong in making this our first move. . . . My action, therefore, has been simply and solely an attempt to educate the public, and support the Trustees in carrying out radical and much-needed reforms"?—This reply has just as much force with regard to the present agitation.

1535. You think that any increased expenditure will be met by public opposition?—I am sure that the Trustees will be. Immediately any increased expenditure on their part was proposed a number of letters would appear in the papers, accusing the doctors of having fads, and of leading the Trustees into unnecessary expenditure, and everything would be again stopped. I do not think that the public had any idea how bad things really were, and unless the Trustees had the public with them it was quite hopeless to expect to carry any reforms.

1536. Do you think that either the Trustees or the staff had any idea how bad things really were?—I do not think the Trustees knew, and I do not think that the staff had any clear idea. I do not think that the public will know until after this inquiry. I did not know myself fully until I

had thoroughly worked the subject out. If you want an example of it look at this list of deaths with septic symptoms after abdominal operations in the Hospital. This is a terrible state of affairs, and I am bound to say that I did not recognize it myself before making out the table I hold in my hand, which I did at Sir James Hector's request.

1537. Then you are educating the public up to it?—I hope so.

1538. And educating the medical staff?—I am helping the medical staff a little, and educating myself too.

1539. And possibly the education may benefit other localities?—I dare say so: I think it will eventually educate the whole colony, for it is a most important matter indeed.

1540. *Mr. Chapman.*] One of the gentlemen now a member of the medical staff was a Trustee at that time, was he not?—Do you refer to Dr. Maunsell?

1541. Yes.—He was.

1542. For how long was he a Trustee?—Twelve months.

1543. To what extent did he discover these enormous evils do you think?—I think that he recognised them fairly well.

1544. That he recognised the insanitary state of the Hospital?—I think he did.

1545. At the time he was a Trustee?—Yes.

1546. Do you take any interest in the proceedings of the Trustees?—I have taken a great deal of interest lately.

1547. But I mean as early as the time that Dr. Maunsell was a Trustee?—Yes. There was not very much in them as a rule to interest, but they have been very much more interesting of late.

1548. You said something just now about the nursing: that the staff had brought the matter repeatedly before the Trustees; that they had done so almost yearly for a long time back. Is that the fact?—Dr. Colquhoun made a point every year of proposing that we should urge its importance on the Trustees. We had all recognised its urgency for a long time before that, but Dr. Colquhoun formally brought it before the Trustees as an annual recommendation from the staff, his idea being that if we stuck to it long enough there was a chance of it being carried out.

1549. But you had on the Board of Trustees Dr. Maunsell, who thoroughly appreciated the reforms you wished to have carried out?—Yes, I think he did, but I think he felt in a rather awkward position there.

1550. But he was one of the Trustees, and had an opportunity of pushing matters very vigorously?—But he was on the Board of Trustees under very peculiar circumstances. I am rather sorry that these things should be brought out; it will be a pity if they are, as it may lead to unpleasantness.

1551. Why should it make unpleasantness?—I will let you know all about it, but I think it will be far better if it is not gone into.

1552. It may be my obtuseness, but I do not see how it can lead to unpleasantness?—I think you will find that it will. You have asked me two or three things that had better been left alone. I would like to make a statement. Dr. Maunsell was a member of the surgical staff for many years; he was our leading surgeon, and we all recognised him as our best surgeon. One year, without any rhyme or reason so far as we could make out, he was dropped out of his position on the staff; the Medical School lost the advantage of his teaching; his patients in the Hospital lost his services; and his exclusion was felt to be a great loss to every professional man in the Hospital. We knew not why he had lost his position and we felt very sore about it. As a protest against it, when there was an election of a Trustee—I know I worked very hard for him myself—we returned Dr. Maunsell as a Trustee. He was elected as a kind of protest against the action of the Trustees, but I fancy he felt himself to be in an awkward position on the Board, and therefore did not push on reforms as he otherwise might have done. I believe, however, that he did his utmost to push on the erection of the operating-theatre.

1553. You do not suppose for a moment that he failed in his duty, do you?—Certainly not.

1554. Do you know this to be Dr. Maunsell's opinion: "I say that the Hospital, with the expenditure of a little money, can be made into a most excellent hospital"?—Yes; by that he meant to spend £8,000 on it.

1555. He is of opinion that by the expenditure of a little money it can be made a perfectly good hospital?—I had the same view myself at that time, but I have changed it since.

1556. Do you expect everybody to follow your changes with equal rapidity?—Oh no; but if I can give good reasons, and I think I have done so already, people will follow my changes.

1557. More than once you have heard Dr. Maunsell express the opinion that with the expenditure of a little money this Hospital might be made an excellent institution?—Yes. I was rather inclined to that view myself until I had gone into the question more minutely.

1558. There was some little dispute among the medical staff at this meeting at which Dr. Maunsell spoke, as to the course you had taken?—Yes, there was.

1559. We will leave out personal differences. There was a great difference of opinion, was there not, as to the justifiability of what you had done in sending in that report?—Differences of opinion undoubtedly existed at that meeting. At a meeting of the staff before I gave my address they gave me permission to forward that address to the Trustees independently, but when they saw it in print, and found out the row there was likely to be, they then objected on the ground that they had not known its contents. They were going to send in their annual motion on the nursing, but postponed it to allow me to send in my paper.

1560. They ultimately passed some resolutions, did they not?—Yes.

1561. Were you present?—At part of the meeting.

1562. Why did you leave the meeting?—Because they were going to discuss the tone of my address, and I did not care to be present.

1563. Did you join in their resolutions?—What resolutions?

1564. Any that they passed?—The only resolution I did not join in was the one in which they criticized my conduct. Of course I did not join in that, because I took a different view from the staff, and was not present, having retired prior to the discussion on that part of the subject being taken.

1565. Ultimately, these matters came before the Trustees?—Yes.

1566. Did you take any interest in their proceedings then?—Yes, I watched their proceedings very carefully.

1567. When you found that the medical staff did not agree with you, were you surprised that your report was not much better received by the Trustees?—You are wrong there. The staff considered my paper very fairly on the whole. Although they had some little scruples about various points that I had raised, my main points were carried by them, and resolutions to that effect were sent by them to the Trustees. I certainly thought at the time that it was a pity they did not make their expressions of opinion stronger. Though some of them did not go by any means as far as I did, others, on the other hand, went further—some gentlemen even suggesting that the hospital should be burnt down.

1568. In their view the hospital was in such an insanitary state?—Yes. I thought that the force of our criticism of the proposed reforms was very much lessened by the fact that we had been squabbling among ourselves.

1569. *The Chairman.*] And so would defeat the object you had in taking them into your confidence?—Quite so.

1570. *Mr. Chapman.*] Does it not amount to this: it is all a matter of opinion after all. Now we have heard a great many opinions from you during the course of your examination, and I want to see how far your opinions will compare with experience of medical men who may be regarded as experts?—Yes; it is a matter of opinion, but you see our opinions on the main contentions were unanimous.

1571. *The Chairman.*] As far as I understand it, the point is this: there was no difference as to the main contentions of your report, but only as to your mode of expressing them?—Quite so.

1572. *Mr. Chapman.*] Are you quite sure of that?—Yes, with the exception of the nursing; and I think there was very little difference of opinion about that.

1573. Were the staff in agreement with you on the subject of the insanitary condition of the Hospital?—I think so. If you refer to the report you will see who spoke and voted in favour of the motion.

1574. May we then expect to find them in agreement with you in the expression of opinion that you gave in the course of your evidence the other day?—What expression?

1575. The strong expression you gave as to the thoroughly bad condition of the hospital?—I do not know how far they will go. It depends very much on how far they will trouble themselves to go into the matter; and I do not think they will take that trouble.

1576. Were no opinions formed by you before you took all this trouble on your shoulders?—Opinions were formed by me; but they have become very much stronger since, because I have now gone thoroughly into the matter, and thoroughly worked out the statistics.

1577. You rely, do you not, largely on these statistics showing the relative number of deaths?—I said at the outset, if you will remember, and I still maintain that these statistics are very important, and of themselves indicate something wrong with the Hospital. They may be explained to some extent, and I hope that some explanation may be forthcoming. I have been searching very carefully for it, but have not been able to find it.

1578. Those statistics were not discussed at that meeting?—No.

1579. What I want to arrive at is this: you say that you think the staff were pretty unanimous that the Hospital is in an insanitary state?—Yes.

1580. Well, it is very difficult for me to express an opinion to that effect?—I refer you to that report which they sent in to the Trustees as their unanimous report, and I refer you to the speeches given by the members of the staff when the matter was discussed by them.

1581. You think that the staff go with you the length, as, for instance, that the Hospital is an unfit place to perform surgical operations in?—I think that they will go with me that length, at any rate, when they have seen the statistics which I have prepared (for Sir James Hector) of the results of my abdominal operations. If they know what the effect of the Hospital has been in these cases they will undoubtedly support me.

1582. But there is an "if" to that. Do you think that the staff will go that length, seeing that they were approaching each operation in fear and trembling?—I cannot answer for them; I think that they should answer for themselves. I have given you my own opinion.

1583. Then you have not exchanged ideas with them to that effect?—I have not.

1584. You have not told the members of the staff that you approached operations in fear and trembling?—I did not tell them in those very words; still, they knew it perfectly well—that for days, even after the simplest operations, I never felt sure but that something would go amiss.

1585. But they have performed operations freely, have they not?—I would rather not answer for the staff.

1586. Do you not know that the various members of the staff were operating constantly?—They were. But I do not know with how much or how little confidence they operate; you had better ask them individually.

1587. I understand you to say that you have not exchanged ideas with the staff as to how far they share with you the feeling that operations are approached with fear and trembling—either that they had such fears, or that you had?—I have a very strong impression that the surgical staff have felt that there is a risk—a considerable risk—in operating in the Hospital. I will tell you one incident, which is a very good test of this: there is an immense amount of antiseptics used in the

dressings. Now, that is a very fair test of the amount of risk in a Hospital, because if a Hospital is in a fair state sanitarily, the amount of antiseptics used is comparatively insignificant.

1588. *The Chairman.*] They use them freely here?—You will find in this Hospital that there is a heavy bill yearly for antiseptics. I would like to make a statement here, and it is very important. Experience shows that the medical profession are divided into two schools: those who base their practice upon very careful attention to hygienic conditions, as represented by Lawson Tait and his followers, and those who put their faith in antiseptics—the disciples of Sir Joseph Lister. Previous to the adoption of Listerism, it was almost impossible to obtain anything approaching satisfactory surgical results with insanitary conditions. By the careful and thorough adoption of antiseptic measures, fairly passable results are obtained in surgery, even in the absence of good hygienic surroundings; but, of course, that means a very considerable addition to the drug bill, in the shape of antiseptic remedies. In the Dunedin Hospital, in one year, the drug bill was £1,000—out of all proportion to the general hospital expenditure—and of this total over £300 was for antiseptic remedies alone.

1581. Is that an annual bill?—It is of annual recurrence; and it is, I think, very strong proof indeed that the staff do recognise that there is a risk in the Hospital.

1590. *Mr. Chapman.*] I do not know anything about these things; will you please point them out to me?—Here is one item alone, "Iodoform, £43 10s."

1591. How long did they take to use it?—I cannot tell you how long it was being used. Every year for aught I know.

1592. The drugs are supplied by annual contract?—I think they have a tender for them.

1593. You say that very strong evidence of the want of confidence by medical men is expressed in that drug bill?—Yes.

1594. In that item of iodoform?—No. Some of them are to keep the dressings on.

1595. Does it not strike you as very singular that, if there is evidence in that fact, that it should not have found expression among the medical men as want of confidence in the Hospital?—I do not know. I, however, remember that when this question was referred to the medical staff I very strongly expressed the opinion that the attention of the Trustees should be drawn to the fact that a considerable portion of this heavy drug bill was due to the fact that the Hospital was in such an unsatisfactory hygienic condition.

1596. *The Chairman.*] You pointed these things out to the other members of the staff?—I did.

1597. *Mr. Chapman.*] When the bill came in?—The bill was referred to the medical staff, who were asked to reduce it in some way. We framed some resolutions on the subject, but I forget what their effect was. But attention was not drawn to the point that I wished.

1598. What resolution did you pass with regard to this particular discussion?—These are the resolutions that were passed: "That the causes of the excessive expendititure were (1) want of efficient management in the dispensary department; (2) to the large use of expensive surgical dressings; (3) that surgical instruments are purchased in the colony; (4) to the large attendance in the out-patient department." We discussed the matter of dispensary expenditure, as we all recognised that it was enormous.

1599. You have often told us that you recognised the fact. I want the expressions that you used?—I may say generally that Dr. John Macdonald was appointed to investigate the matter and report, which he did with certain recommendations.

1600. That was to prevent waste, and to effect reduction in the expenditure?—The only item of the drugs to which I drew particular attention was the charge for surgical dressings, showing that we recognised the fact that there was a necessity for the very free use of antiseptics. And that is my answer: the staff recognised that they were necessary; otherwise they would not have used them so freely. You could not have much stronger proof than this fact: that the surgical dressings for one year (1889) cost £369, which is tremendously heavy for a small Hospital like ours—that the surgical staff, at any rate, did recognise the insanitary state of the wards.

1601. I want to know when you gave expression to this opinion, which you say was unanimous among the staff?—What expression of opinion?

1602. For instance, I find it stated in one of these discussions: "Dr. Hislop quoted from the returns of deaths in the Hospital to show that there had been no mortality under the heading of diseases of the reproductive organs during a certain year," and you replied that, "I had never had a death among my own cases, but I had had two shaves"?—I am glad of the opportunity of referring to this subject, because I have been accused of claiming that I have never had a death following operations for these diseases. This would be manifestly absurd. Dr. Hislop, who drew my attention to the fact, referred to one year only, and he held at that time a hospital report in his hand, which I took to be correct. Some medical men, from seeing the reports in the papers, jumped to the conclusion that I was claiming to have extraordinary results.

Dr. William S. Roberts sworn and examined.

[The following evidence, numbered with italic figures, was received too late for consecutive numbering.]

1. *Mr. Solomon.*] What is your name?—William Stewart Roberts.

2. You are a member of the staff of the Dunedin Hospital?—No, I am not at present.

3. By the way, what are your medical titles?—I am a member of the Royal College of Surgeons, England.

4. And entered on the roll of practitioners for New Zealand?—Yes, I am registered.

5. For some time you were House Surgeon of the Dunedin Hospital, were you not?—Yes.

6. During what period?—I entered on my duties as house surgeon in August, 1878, and held that appointment, with the exception of an interval of a year when I was absent, until December, 1887.

7. I think you also occupy a position in connection with the University of Otago?—Yes; I am Lecturer on Pathology in the Otago University.

8. The Chairman.] I understood you to say that you are not on the staff this year?—I act as pathologist, but am not recognised as a member of the staff.

9. Mr. Solomon.] In your opinion, is the hygienic condition of the Dunedin Hospital satisfactory at the present time?—No, I do not think it is.

10. Have you come to that conclusion hurriedly or suddenly, or is it a conclusion that you have arrived at as the experience of some years?—It has been a gradually-acquired experience.

11. We have heard during the course of this inquiry a good deal about ventilation of the Dunedin Hospital: in your opinion, is the ventilation of the Hospital satisfactory?—No; it is not in accordance with what is set down as required by the authorities. I submit to authorities in this respect, because I have had no experience of the matter.

12. You are not a specialist on hygiene?—I am not.

13. It is not necessary for medical men to read up this subject?—I think they should, strictly speaking.

14. For instance, we have heard that the proper and generally approved plan of ventilating a hospital is by means of what is known as a system of cross-ventilation: do you agree with that?—I certainly agree with that.

15. I suppose you know that in this Hospital—it is a matter of common report and knowledge—the only system of ventilation of any magnitude is by means of the windows and open fireplaces?—Those are the principal sources of ventilation.

16. There are small ventilators, are there not?—Yes, there are ventilators let in in various parts of the walls and into the chimneys. In some of the wards there has been a shaft put in and connected with an archimedean screw. That has been done in the upper wards.

17. Is this system of ventilating hospital wards by means of holes in the walls, chimneys, and by open windows satisfactory to you?—It is not satisfactory.

18. Does that method of ventilation secure a constant current of air throughout the wards?—If the windows are open there is a constant current certainly, but you cannot rely on an equable current and a general diffusion of the air equally throughout the wards under the present system. If the wind blows from certain quarters certain windows on either side give more air into one part of the ward than into another, which gives rise to a draught.

19. Am I right in saying that in one part of the room there would be too much current and in another not enough current?—That is quite possible.

20. Under these circumstances, do the patients, in your opinion, get a fair chance of recovery?—Not so fair a chance as if the ventilation were as orthodox as it should be. I may explain, it has been my experience in the Hospital—that the patients have made complaints to me with regard to the condition of the atmosphere in the wards.

21. What has been your own opinion?—I have had to complain on going into the wards of an evening sometimes and to have a window open here and there, owing to the unpleasant odour and the stuffy nature of the air in the ward.

22. The Chairman.] Are you speaking of the time when you were house surgeon, prior to 1887?—Somewhere about that time. From time to time I had occasion to complain. It is not self-regulating.

23. Mr. Solomon.] Was the atmosphere, when you complained of it in that way, in such condition as ought to be found in a well-regulated hospital?—No, I should say decidedly not. On the other hand, while I have had patients complain to me of draughts, the wardsmen have explained that they could not keep this or that window open because so-and-so complained.

24. Is that reasonable?—It is reasonable to expect, under certain circumstances of wind and atmosphere, that there should be these complaints.

25. So that your objections to the ventilators are of a twofold character; in the first place, the air that goes in is not sufficient, and on the other a draught arises?—Yes.

26. Are these draughts, which necessarily arise from the windows having to be kept open, a source of danger to the patients?—To a certain extent they are.

27. In that the patients are liable to catch cold, I suppose?—Yes; they are liable to catch cold.

28. Do you know of any cases of that happening?—I cannot speak confidently about any case, though I dare say cases have occurred. But I can speak more emphatically about the complaints having been made.

29. Was it a matter of frequent occurrence?—The patients very often—indeed, it was a common occurrence—complained of catching cold, and they attributed the cause to the fact of the windows having been kept open.

30. You say that that was a common occurrence. In your opinion, was it surprising that such complaints should be made?—No, I do not think that it was surprising. The windows open, most of them, on the hinge, but the fittings are in many instances imperfect. On a cold day the wind comes in, and was a common source of complaint. I frequently saw the windows stuffed with blankets and towels.

31. Do you think that, with the most efficient arrangement for opening the windows and closing them as tightly as possible, ventilation by the means that are now in use can be made satisfactory?—It would be satisfactory in calm or mild weather.

32. But in the middle of winter?—With a cold wind it would be unsatisfactory.

33. Now, recognising that the existing system of ventilation is unsatisfactory, in what portion

of the year would you expect the greatest evils to arise from it—spring, summer, autumn, or winter? —Most likely in the winter.

34. Evils would arise from two causes, would they not? If the windows are closed there would be a want of ventilation; if they are opened the patients catch cold?—Certainly.

35. Do you think that the evils to be anticipated from this insanitary condition of affairs, along with this faulty system of ventilation which everybody is agreed about, are of a trifling character, or of such a serious character as to call for amendment?—I think that they are sufficiently important to call for amendment.

36. Without going into the question of a perfect hospital, for I understand that it would be very difficult indeed to obtain a perfect hospital, I would ask you, is such a state of affairs as we have been told exists in the Hospital at all consistent with a fair sanitary condition?—They are not consistent with a fair sanitary condition.

37. It has been shown to us by authorities that the beds in the Dunedin Hospital are altogether too close. Has that ever occurred to you?—Yes.

38. Do you agree that they are too close?—I think they are.

39. Is there a danger in that?—Yes.

40. An appreciable danger?—Yes.

41. Do you think that these defects in our Hospital are defects which should be remedied at once?—Yes; I think that they ought to be remedied. I will qualify that answer a little. This overcrowding struck me when first I saw the Hospital, but matters are a little better now. I rather think, but I am not certain, that there are not so many beds in the wards as there used to be.

42. The Chairman.] Are you still speaking of the time prior to 1887?—Yes, when I noticed it most.

43. I understand from that answer that it is the present state of things that you are speaking of?—The beds are still too close together. Of course, I am speaking of when I last saw the Hospital. I have not been through it since I left the Hospital, or was on the staff.

44. But you believe that the crowding still exists?—Yes, I believe that it does still exist.

45. Mr. Solomon.] I suppose we may take it that you agree with the figures on the subject of bed-space that have been quoted as from Wilson, Erichsen, and such men?—Decidedly.

46. The Chairman.] You have no reason to differ from those recognised authorities?—No. I may mention that when I have shown medical men from other parts of the colony over the Hospital it was a very common thing for them to say, "Dear me, how close your beds are together," or words to that effect. I always met that with the argument that we had a ward empty into which we moved patients.

47. Mr. Solomon.] Two wards are now kept empty, are they not?—Yes.

48. Where you have a limited amount of space, keeping wards empty necessarily means, does it not, keeping other wards fuller than they otherwise would be?—On occasions. I used to meet their remarks with that argument.

49. The beds in the ward have a fixed position, have they not?—Yes.

50. Suppose there are sixteen beds in a ward, and that fifteen of the beds are occupied, the patients would be no closer together, would they, than if only twelve beds were occupied?

51. I want to put a general question to you. We have heard from the authorities who have been quoted to us that certain bed-space is sufficient: is any material reduction of that bed-space, as allowed by Wilson, Horsley, and other authorities, a source of danger to the patients? You will observe that I say "material reduction"?—Yes; I should say so.

52. I suppose you agree with these authorities that in surgical wards greater bed-space is required than in medical wards?—I should agree with it if the authorities say so.

53. Assuming that the authorities on the subject say that 9ft. is the minimum bed-space that should be allowed for surgical cases, and that 13ft. 6in. is what is given in the Dunedin Hospital, would that, in your opinion, be a safe state of affairs?—Not if it is below the minimum allowed by authorities.

54. The minimum allowed by the authorities is 7ft. 6in. to 7ft. 8in. for all classes of cases, and 9ft. is the minimum allowed by them for surgical cases. In the Dunedin Hospital, we have been told, the bed-space is 5ft. 6in. Would that, in your opinion, be a safe state of affairs?—It would not.

55. To secure bed-space is important, is it not?—Yes.

56. Suppose that we find, according to the authorities, that 105ft. to 120ft. is the minimum floor-space in ordinary cases, and from 130ft. to 140ft. in surgical cases, while the amount available in the Dunedin Hospital is only 78ft., would you say that that was a safe state of affairs?—I should say that it was not.

57. Does your previous remark also apply to the question of cubic space?—It does.

58. I find that Ashurst, for ordinary medical cases, allows a cubic space of 1,500ft., and for surgical cases 2,000ft.; that Erichsen allows 1,500ft. for medical cases, and 2,000ft. for surgical cases; and that Wilson allows 1,200ft. for medical and 2,000ft. for surgical cases. As against that, the Dunedin Hospital, for surgical cases, has, according to the authorities, only 937 cubic feet. Is that a safe state of affairs?—No.

59. Confine your attention for a moment, please, to the question of overcrowding. Is such a considerable diminution of space as I have quoted to you calculated, do you think, to materially decrease a patient's chance of recovery?—I think it would decrease it to some extent. Of course, some would feel it more than others.

60. Would the evils of overcrowding be felt most in a hospital where the ventilation was satisfactory or in a hospital where it was unsatisfactory?—It would be felt most where the ventilation was unsatisfactory.

61. So that we may say that in the Dunedin Hospital the evils of overcrowding are aggravated by insufficient ventilation?—Yes.

62. Let us now take these things all together—the overcrowding of the wards; the insufficiency of the ventilation; the position of the waterclosets, baths, &c.; and the condition of the floors, walls, &c.: do you think that these things can be safely allowed to remain as they are?—What do you mean by "safely allowed"?

63. Put it in your own words, if you like?—Well, I think it is highly desirable to have the present state of things remedied. That is how I should like to put it.

64. The Chairman.] You mean, I suppose, that on account of the safety of the patients the present condition should not be allowed to remain?—For their welfare it should not.

65. Mr. Solomon.] Do you approve of the waterclosets, lavatories, and bath-rooms being directly in a hospital ward?—I do not.

66. Do you think that a trifling or a serious matter?—I think it is a serious matter.

67. I suppose it all tends to disturb the quality of the atmosphere?—It tends to render the atmosphere impure, provided, of course, that other bad conditions also exist.

68. Are the conditions to which you have just referred in detail—namely, the overcrowding, the want of sufficient ventilation, the position of the waterclosets, &c.—sufficient, in your opinion, to account for the stuffy condition of the wards which you found yourself to exist?—Decidedly.

69. So that I may say that one would expect to arise those various defects which within your own experience you actually found did arise?—I found that they actually arose.

70. You have told us that when you went into the wards you experienced a vitiated atmosphere. Did that happen in the surgical as well as in the medical wards?—Yes, in both wards.

71. In the surgical ward there were various kinds of cases, were there not?—Yes.

72. Do you think that patients—we will speak of those who have been operated on, or who have open wounds and are about to be operated on—can be allowed to remain in such an atmosphere with comparative safety to themselves?—I think it increases the risks of bad results occurring from operations.

73. The Chairman.] As a house surgeon you can speak with some degree of certainty?—I say that I think it would increase the risk of bad results.

74. Mr. Solomon.] Do you agree or not with Dr. Batchelor when he says that it is impossible for any medical man in any particular case to point to the actual cause of trouble arising after operation?—It is sometimes very difficult.

75. May I say that you can only come to a conclusion from your general experience of the results of your cases?—Yes.

76. We will now turn to your pet subject. I suppose you know something about pathogenic germs?—I have talked about them sometimes.

77. These pathogenic germs are generally in the atmosphere, are they not, and are a source of danger?—They are.

78. It is owing to their presence in the atmosphere, we have been told—and I suppose there is no doubt about it—that septic poisoning arises in an open wound?—Yes, undoubtedly.

79. And in a bad atmosphere, as, for example, in this room, these pathogenic germs are generally present?—Yes, and are freely distributed.

80. It is their concentration or diffusion which increases to an appreciable extent the risk, or the reverse, of danger of infection?—The greater the number in which the germs are present the greater is the chance or risk of septic infection.

81. In a badly-ventilated atmosphere, would the germs be present in greater or lesser concentration?—They would be, presumably, present in greater concentration.

82. In a general surgical ward, such as we have in the Dunedin Hospital, where there are suppurating wounds, are these germs given off into the atmosphere?—Yes. In what is given off from the dry discharges the pathological atoms exist, though they are not capable of actual determination. I think the germs come more from the dry discharges than from the discharge itself, although they exist in large quantities in the matter which comes from a suppurating wound.

83. So that patients lying in a general surgical ward in which there are cases of suppurating wounds run a distinct risk of infection from these septic germs?—Yes; they run a greater risk where the germs are present in greater quantities.

84. Some diseases are more favourable for the multiplication of germs than others, are they not?—Yes.

85. Which should you say would be the most favourable?—As a general rule, open wounds; I should think wounds which are difficult to keep dry, such as operations performed within the vagina.

86. Are they moist or dry?—Moist. All wounds are moist when first made, but are kept dry by reason of absorbent dressings.

87. Do you consider that patients undergoing gynecological operations are more or less likely to incur the danger of septic poisoning?—Speaking generally, I should consider gynecological cases more liable to septic poisoning than other cases. There are certain operations which are possibly not more serious than ordinary operations; but in gynecological cases, where we operate through the passages or the abdominal cavity, the risk is certainly greater.

88. There is no doubt that these germs can be taken from these wounds into the blood system?—No. A healthy body contains no pathogenic germs.

89. Now, we know, as a matter of fact, that in the general surgical ward of this Hospital, where all sorts of cases occur, it is the custom to keep patients for a few days prior to being operated on for gynecological cases, and to remove them back to that ward after having been operated for vaginal or uterine complaints. Under these circumstances, should you say that greater or lesser precautions are necessary in regard to the hygienic condition of the ward?—Greater precautions are necessary, and risks should be diminished as much as possible.

90. With your actual experience of the Hospital, and taking all these circumstances into con-

sideration—the defective system of ventilation, the crowded wards, and the fact that gynecological cases are placed both before and after operation in No. 7 ward, which is a general surgical one—should you say that that is a proper state of affairs to exist?—Are you speaking now of gynecological cases?

91. Yes?—Then I should say it is not.

92. The Chairman.] You mean that gynecological cases should not be treated in a general surgical ward?—I do.

93. Mr. Solomon.] You say that the risk which the patients run is materially increased in these instances?—I should say so.

94. I suppose the same deduction would follow, though perhaps not with equal force, in any case of abdominal wound?—The greater the risk the greater the chance, but not with equal force.

95. Abdominal section is a major operation is it not?— Yes.

96. These are cases which run a grave risk in an atmosphere containing a concentration of these germs?—They do.

97. Do such operations as these, speaking generally—never mind whether they are gynecological operations or otherwise—get a fair chance, in your opinion, if they are placed in the same wards where there are cases of suppurating burns, as in the Dunedin Hospital, taking into consideration the fact of overcrowding, insufficient ventilation, and so forth?—No; I do not think that they get such a fair chance as they might have.

98. Do you think they get as fair a chance as they ought to have?—In these particular cases they do not get as fair a chance as they ought to have.

99. We will now go to another question. Do you agree with the opinion that erysipelas is a septic disease?—Yes, undoubtedly it is.

100. Are you of opinion that in a properly regulated hospital erysipelas should arise?—Theoretically, no.

101. Do you agree with Erichsen, that the frequency of erysipelas, if it should arise, may be taken as an indication of the insanitary condition of the Hospital?—I should agree with him in saying so.

102. The Dunedin Hospital has, on the average, about a hundred patients?—That is about the number.

103. Do you think that erysipelas having broken out—we have the fact of four cases having occurred in the Hospital within, say, a fortnight—each case in a different part of the Hospital, and there being in another part of the Hospital a case which was supposed to have been erysipelas, is consistent with the fact of the Hospital being in a good hygienic condition?—I should say it is not.

104. At all events, in a hospital of our size, is it quite consistent with satisfactory hygienic conditions that such a state of things should occur?—No, I will not say that. Do you mean in the absence of any assignable cause?

105. I mean without any explanation. If the Hospital authorities have any explanation we certainly have not heard it yet. I will put it as you wish. In the absence of any assignable cause, you do not think such a state of affairs is consistent with a proper sanitary condition?—I should say not.

106. It is quite consistent, is it not, with an insanitary condition?—Decidedly.

107. It is one of the evils, I suppose, that are to be anticipated from an insanitary condition?—Decidedly.

108. Does your experience lead you to believe that typhoid fever should be contracted by nurses in a properly conducted hospital?—No; it should not be contracted in a hospital.

109. We have the assurance—you may take my word that it is—of Dr. Wilks, of Guy's Hospital, that he never heard of such a thing in all his experience at Guy's. Now, suppose you heard of cases of typhoid fever arising among the nurses in a small hospital like ours—of nurses contracting it within the Hospital without any assignable reason—would you not consider that a suspicious circumstance in connection with the Hospital?—I should not blame the Hospital under those circumstances, unless I could eliminate all chance of the nurses having contracted the fever outside, which they might do. One case of typhoid occurred while I was in the Hospital.

110. That was the case of a patient who got typhoid?—Yes.

111. And you reported that case to the Trustees?—Yes. Presumably, she got it from a patient in the same ward.

112. The Chairman.] In what ward did that happen?—In No. 8, which was a medical ward. I think it occurred in 1882, or somewhere about that year. There is a report of mine to the Trustees on that subject.

113. Did the present system of waterclosets exist at that time?— No, it was prior to the closets being changed.

114. Mr. Solomon.] Do you remember any cases of erysipelas?—I cannot specify any particular cases, but I vaguely remember some cases in the various wards.

115. Now, I want you to look at this diagram of No. 7 ward, and notice the beds that were occupied by Mrs. S—— and Mrs. T——. On the 9th July, 1890. Mrs. P—— was operated on by Dr. Batchelor for an Emmet, and on the 13th of the same month Dr. Batchelor, in his private practice, operated on a case of abdominal section—cancer in the abdomen; that, though the latter patient had a high temperature when operated on, she got perfectly well, without septic symptoms of any sort; that on the 15th of the same month Mrs. S—— was operated on, also for an Emmet; that on the 16th Dr. Batchelor operated on another private patient of his for the removal of stone, and that there were no septic symptoms whatever in this last-mentioned case?—I may mention that I was present at this operation.

116. At about this period Dr. Batchelor also attended a confinement case. In the Hospital he

operated on Mrs. T—— for reduction of a labial cyst, and the next day, in his outside practice, he operated on a double ovariotomy case. These cases represent a week's operations by him. In none of his cases outside the Hospital did he have the slightest symptom of septic trouble. Is it consistent with the facts I have just told you that he could have carried about with him from any of his outside cases any germs of septic poisoning?—I should say not.

117. Now, I want you to consider that in this ward in the Hospital, although the fact was unknown to Dr. Batchelor at the time, there was a patient named Mrs. A——, who for a considerable time had been suffering from a wound of some sort, which was discharging pus, and that she had a decidedly septic temperature. On the other hand, Dr. Batchelor, in his private practice throughout that week, had been absolutely successful, and had had no septic poisoning of any sort. Now, Mrs. P——, who was operated on on the 9th July, and had gradually recovered, on the 25th, sixteen days after operation, developed septic symptoms of an alarming character. Mrs. S——, who was operated on on the 15th, died from septic peritonitis on the 22nd, while Mrs. T——, who had been operated on for a simple reduction of a labial cyst, developed septic symptoms on the 21st. Now, I ask you, in view of what I have told you, and taking into consideration the want of ventilation in the ward, the fact that it is a surgical ward, and that in that ward there were known septic cases, are those results of Dr. Batchelor's practice within the Hospital at all surprising, in your opinion?—But there is one element which you have not mentioned. Have you eliminated the instruments? If he used the Hospital instruments it might not be surprising.

118. The Chairman.] You include the fact of there being septic cases in the ward?—I do.

119. Mr. Solomon.] Do you say it is surprising, or that it is not surprising?—It is not surprising.

120. I do not understand you?—Presumably, and as far as I know at present, the operations were performed with Hospital instruments.

121. But that is not so. Assume for the moment that there was no danger from the instruments that were used. Under these circumstances—known septic cases being in the ward, and the defective hygienic condition of the ward—was it at all surprising that Dr. Batchelor's gynecological cases in the Hospital should have developed septic symptoms?—No, it was not.

122. The Chairman.] Without considering the matter of instruments, you say that the condition of the ward was sufficient?—I say that the condition of the ward may account for the septic poisoning in these cases.

123. Mr. Solomon.] You know Dr. Batchelor as an operator?—Yes.

124. Is he careful?—He is an extremely careful surgeon.

125. Is he abreast of the times so far as Listerism is concerned?—Decidedly.

126. From the care which you know Dr. Batchelor to exercise in the performance of operations such as I have mentioned, should you think that, under ordinarily healthy conditions, there was any danger of septic poisoning arising?—No. The operations should have done well.

127. And you say that if the operations had been performed by Dr. Batchelor under healthy conditions there should have been no danger of septic poisoning?—I do.

128. But with the surroundings which you know to exist there it was not surprising?—It was not surprising.

129. You have told us that you were present at one of Dr. Batchelor's outside operations for the removal of stone from the gall-bladder. Is that a more or less serious operation than any of these we have been speaking about that took place in the Hospital at about the same time?—It is a most serious operation.

130. Is there greater or lesser risk of infection from septic poisoning in such a case?—The risk is very great indeed.

131. In cases of abdominal sections of an exploratory character, to ascertain whether the growth in the abdomen is tumerous or cancerous, are they as serious?—They are not so serious as the gall-bladder case.

132. Is it a serious operation?—Yes, simply from the risk of septic infection.

133. You say that the risk is serious from that point of view. Is the risk increased, or otherwise, under unhygienic conditions?—It is decidedly increased.

134. Remembering that Dr. Batchelor performed the operations I have mentioned to you, and also had a delicate case of child-birth during that week, all of which he performed with perfect success, does that add to or detract from your opinion that the contrary results which he obtained in the Hospital during that same week are directly attributable to the defects contained in the Hospital?—We should have to look to the cases within the Hospital; we are bound to do so under the circumstances.

135. Taking the circumstances altogether, taking also his experiences within and without the Hospital, taking what you know yourself about No. 7 ward—do not exaggerate anything—do they, in your opinion as a professional man, point to the causes of the results that are obtained in the Hospital?—Before I could answer that question I should have to go into the whole question of possible causes of infection. Of course, I should consider the state of the ward as a possible means of infection; but there may be others.

136. If you found that the same practitioner operated outside as inside; that he used the same instruments inside and outside; that in his more difficult operations outside his results were perfectly satisfactory, while inside his results were most surprising, coupled with the knowledge that the ward in the Hospital in which he operated was in an unsatisfactory state—what conclusion would you come to?—So far as that goes, I should first eliminate the instruments.

137. What about the operator?—I should eliminate him also.

138. Is it reasonable or unreasonable to suppose that the septic condition of the ward exercised great influence on the results?—It is still a possible source of infection.

139. Answer my question if you can. Is it reasonable or unreasonable, under the circum-

stances I have mentioned to you, that the condition of the ward exercised an influence which made the results inside so different to those obtained outside?—It is possible that it did.

140. Is it reasonable to suppose that it did?—It is not reasonable to suppose so until you have sifted all the chances of infection. I have eliminated the instruments and the operator; but you have not yet asked me if there were other possible chances.

141. What other chances are there?—What was the condition of the woman herself?

142. You performed the *post-mortem* on Mrs. S—— did you not?—I did.

143. Did you find anything in her condition to lead you to suppose that there was a pre-existing source of danger from septic poisoning?—If it pre-existed it must have been very recently before operation. It was not of long standing, certainly. At all events, there was no evidence to show that there was. If there was any pre-existing cause it was quite masked by the inflammation which caused death.

144. There was nothing of a chronic character?—No.

145. The Chairman.] There were no symptoms of there having been chronic trouble?—There was no evidence of it.

146. If there had been, would you have seen it?—Yes, because the examination was very carefully conducted.

147. You do not say that there was chronic disease of the womb?—No.

148. Mr. Solomon.] If there had been there would have been thickening of the walls of the uterus, would there not?—If there had been thickening the evidence would have existed.

149. Was there any such evidence?—No; there was only evidence of recent acute inflammation.

150. Was there any evidence exhibited by the *post-mortem* to show that the woman had in herself before the operation any danger of contracting septic poisoning?—Do you mean from the operation itself?

151. Yes?—There was none.

152. Now, we have eliminated the operator, the instruments, and the woman herself: what else do you want?—I want to eliminate also the condition of the atmosphere.

153. The Chairman.] Do you mean to eliminate the state of the atmosphere?—I want to eliminate the chance of infection, subsequent to the operation. [Chart handed to witness.] Was there any subsequent examination by anybody? Who changed the dressings?

Mr. Solomon: Dr. Batchelor dressed the wound himself from beginning to end.

Witness: Then, I can eliminate the chance of subsequent infection, and, having excluded these various sources, it only remains to consider the conditions of the atmosphere in the wards previous to operation. From the evidence which has been given, I should say that that was in a septic condition. Were any examinations made in the ward prior to operation?

Mr. Solomon: Dr. Batchelor has already told us that he made very careful examinations.

154. The Chairman.] You suppose septic influences to have existed in the ward?—The patient was operated on at 4 o'clock, and it seems that she had septic symptoms at 4 o'clock next day. I should like to know the history of the case.

155. Mr. Solomon.] She was operated on on the 15th, and her temperature was up to 101° on the 16th?—That would be a sufficient indication of itself of septic trouble. Subsequent to that had any interference with the woman taken place?

Mr. Solomon: No.

Witness: I gather that the temperature was 101° when the first examination was made. The septic symptoms do not seem to have occurred till a few days—about four—after operation; and then began the condition of affairs which caused death, which was peritonitis. The *post-mortem* in this case revealed the fact that the infection had travelled up the uterus along the fallopian tubes and then into the peritoneum. Of course, it may have taken a long time to do that. We found some pus in the tubes.

156. Mr. Solomon.] Did the *post-mortem* reveal to you that the fallopian tubes had been previously diseased?—It did not. They had a normal appearance, with the exception that they contained some pus.

157. Now we have got all that you asked for—the operator operating with perfect success on patients outside, using the same instruments as he used inside; that the condition of the ward in the Hospital was unsatisfactory; and that the woman herself had no predisposition to septic poisoning: what conclusions do you come to?—That she had subsequent infection of the wound.

158. Arising from what?—Having eliminated the operator and the instruments, and if there was no pre-existing diseased condition of the part, it must have been from some local germs existing in the neighbourhood of the parts operated on.

159. If she had been lying in No. 7 ward for some days, and had been examined during that time, was there anything surprising in germs being found in her?—Under healthy circumstances a vagina contains no pathogenic germs unless air has been introduced—that is to say, that no septic trouble can occur unless a wound exists. In a case like this, we can eliminate almost every source of infection except the condition of the vagina at the time, apart from disease, and we must come to the conclusion that there were pathogenic germs in the vagina at the time, introduced, presumably, when examination was made in the wards prior to operation, and that these obtained access to the wound during operation.

160. Suppose that the patient had been lying for some days in No. 7 ward under the circumstances that I have already mentioned, is it at all surprising that there should be germs in the air of the ward?—Theoretically it is not at all surprising.

161. Would it be surprising if they were not there?—Yes, it would be surprising if they were not there.

162. If the condition of the ward were so reasonably sanitary as one might wish for, would it then be surprising to find such a state of affairs?—You might get such a state of affairs theoretically in an ordinary atmosphere. Of course, the worse the atmosphere the greater the risk.

163. Could the condition in which the ward was at that time fail to exercise an influence?—I should say from the evidence before me of the condition of the ward that the chances were considerably in favour of such a condition of affairs taking place.

164. I suppose no man can speak positively on the point?—Of course not.

165. Could any of those three women who underwent an operation for Emmet, who had been in that ward, been examined there, and remained there for a week or ten days, have had the same chance of recovery as if they had been in healthy surroundings?—They could not have had such a good chance.

166. Would the risk to them be seriously increased?—I should say so.

167. The Chairman.] I understand you to mean that the risk to the patients being operated on, after having been in the ward for some time, would be greater?—Yes.

168. What would be the process in the vagina? Would they then begin to create septic poisoning in the patient?—Theoretically, it is possible.

169. Mr. Solomon.] Under any circumstances, or in any view of the case, I understand you to say that the patient runs a serious increase of risk in that ward?—Yes; in any case.

170. Do you think it wise or unwise that gynecological cases should be treated in ordinary surgical wards?—I think it unwise, for the reason that the chances of their infection are greater than they are in ordinary surgical cases, and from the fact that from the nature of the localities operated on the results of septic infection are much more serious.

171. What conditions render operations on the vagina more dangerous from the view of septic contagion?—Any practitioner knows that he has only to introduce a septic plug into the vagina and it will become septic within twenty-four hours, whereas a similar dressing laid on an ordinary septic surgical wound will remain a septic for weeks under favourable conditions. The local conditions of the vagina are such as to make it particularly favourable for the reception of germs, and it is impossible to make the vagina absolutely dry after operation.

172. Dr. Batchelor has told us that on one occasion he was about to perform a gynecological operation on a woman, and on the morning of the operation he accidentally discovered that in the bed next to this woman there had been lying for a week another woman who was suffering from purulent bed-sores. I wish to ask you if there is in the present condition of the Hospital anything to prevent such a state of affairs recurring, or is such a condition of affairs at all safe for the patient about to be operated on?—Decidedly not.

173. Is it not an argument in favour of a separate ward for gynecological cases that he should have ready means of isolating cases that required isolation?—Certainly.

FRIDAY, 29TH AUGUST, 1891.

DR. BATCHELOR re-examined.

1603. *Mr. Solomon.*] Can you tell me whether there are special wards for the diseases of women in any other hospital in New Zealand?—I do not think that there are special wards, but I know that there are special arrangements made for a certain class of cases—ovarian cases, for instance.

1604. Special arrangements in cases of such operations?—Yes.

1605. Do you mean that there are special arrangements for isolating such cases?—Yes; I am almost certain that in Christchurch, off their operating-room, they have one or two small rooms, which I was told when I was there were kept for the purpose of operations, so that the person operated on might be moved easily thence from the operating-room.

1606. Then it is not advisable, in certain cases, that a patient should be moved far from an operating-room?—Yes; the special ward would obviate that objection and insure isolation. It is generally recognised that all hospitals should have a special ward for the isolation of cases.

1607. How many patients can be accommodated in a room like that at Christchurch?—One, I think.

1608. Then, there would be one patient for each room?—I think so. I have a strong impression that there were two rooms in the Christchurch Hospital when I visited it last year, after returning from Melbourne.

1609. Is that the only case in the hospitals of New Zealand that you know of where special arrangements have been made?—I do not know of any more, but it is probable that there are.

1610. Are there similar rooms in the Dunedin Hospital which are specially set apart for cases of the kind you have alluded to?—No. I have been carefully over the Hospital and tried to obtain a room, but could not get a suitable one. There was one room, but it was very unsuitable, and I came to the conclusion that the large ward, bad though it was, was the better. All our rooms are very full; in fact there is not proper accommodation for the nurses. At the back part of the Hospital there are miserably small rooms, but no one would think of operating in them.

1611. Is there no place in the Hospital which can be used for the reception of one or two patients after operation?—There are no rooms that I know of which can be used in such a way. I went carefully into that question when it came up before, but was unable to find a suitable room.

1612. There is always a vacant ward in the Hospital, is there not?—Yes; there are two now.

1613. Is not one of these available for cases that require isolation?—I invariably use them in abdominal cases.

1614. For how long?—I have done so for some years past.

1615. You misunderstand my question. For how long do you use the ward in such instances?—For about ten days. I get them out again as soon as I can. There is an objection to the use of

the ward in this way, inasmuch as it involves the Trustees in extra expense, and they object to being put to extra expense. I have also had to keep my patients requiring operation longer than I should have done, because the Trustees had to meet and decide whether or not the use of the ward should be given for the purpose.

1616. Have the Trustees ever refused you the use of the ward?—I cannot say that they have ever refused it, but there has been considerable delay in granting the use of it; and so undesirable has been the delay in some instances that I had to put off my cases.

1617. Have you ever had occasion to make use of the ward without asking permission?—Yes; I have had to do so in some cases where it was a matter of vital importance to do so.

1618. Can you tell us any cases in which you experienced difficulty in getting the use of the ward for operations?—I cannot refer you to any particular case, but I am sure that Dr. Copeland will be able to tell you, if he is asked, of cases where I had to put off operations.

1619. You assert that you were obliged to give up operating, in cases, because you could not get the use of the ward?—I do. And if necessary, I can find cases where this happened, and mention them to the Commissioners before this inquiry is ended.

1620. Cases in which you have not applied to the Chairman of the Trustees for permission to use the ward?—I do not apply to the Chairman. I think there is quite enough nuisance already without that.

1621. You complain, I understand, that you did not know of what risk of infection your patients might run from other patients who might be in the same ward?—Yes. I have only found out such things by accident.

1622. You have only found out occasionally or by accident of there being dangerous patients near your own?—I have made inquiry about other men's work, but I did not always get reliable information.

1623. But would it not be a simple matter to inquire from the House Surgeon?—It might be, but he does not always know.

1624. In cases in which you have made inquiry, have you either been misled or had difficulty in obtaining reliable information?—Yes. I will tell you one case in which I was misled. It was in regard to Miss Kate W——, the patient who was supposed to have had erysipelas. I am obliged to bring this matter forward, because a very important point is involved. Hers I consider was a septic case, and is an important example of the difficulty I have experienced. She was admitted into the Hospital presumably as a medical case, and was subsequently transferred by the physician to the surgeon, who made a free incision down the outside of the thigh, from which he expected to find matter. He, however, did not find matter, and the wound I believe healed kindly. At this time she had a very irregular temperature, so much so that I was struck by it, and I made inquiries of the nurse and house surgeon, and was informed by both that it was a medical case—pericarditis. This case ran on with an irregular temperature for days, and no one knew whether it was septic or not. I am quite convinced from the course that it took subsequently that it was a septic case. Subsequently erysipelatoid symptoms developed, necessitating her isolation. That seemed to be a very striking case.

1625. You regard that as a striking case?—I do.

1626. You found erysipelatoid symptoms supervening, according to your opinion?—Yes.

1627. But, on that point, I understand that the other medical men who were in attendance may differ from you?—That is very likely. At any rate, she had a septic temperature.

1628. Now, I want to ask you a few questions about Mrs. A——'s case?—I do not know much about it.

1629. Please look at this little plan [produced] and say whether the position of her bed is correctly indicated on it?—Yes; that is quite right.

1630. What were the names of the patients on each side of her: you might give them in succession?—On the one side, Mrs. S——, Mrs. B——, and Mrs. A——; and on the other side, Mrs. V——, Miss M——, and Mary J——.

1631. You have just said that you do not know much about Mrs. A——'s case?—All I can say about it is this: that when I got bad results I looked around for the cause. I was at first inclined to ascribe them to Kate W——; but when I found that Mrs. A—— had a septic temperature, and was discharging large quantities of pus from an open wound, which was being dressed daily by a nurse, I did not need to look any further for a cause of the trouble.

1632. Why had you felt disposed to ascribe the mischief to Kate W——?—Because she happened to be between the two beds in which the septic mischief had arisen.

1633. Had you before this known anything about Mrs. A——. No; I do not think I ever knew of her existence in the ward.

1634. You had not been consulted in reference to her case?—I cannot remember. If I had been, it must have been some time previously.

1635. It would have been a considerable time previously?—Very likely I may have been, but I have lost the run of the case altogether.

1636. Then you did not sign the consultation-book?—I possibly may have done so; if so, it was some time ago, but I did not recognise the woman again.

1637. Just look at this [book handed to witness]?—Quite so; I see it is more than six months ago.

1638. You now see by that book that you were consulted?—Yes, I remember the case now. There was a mistaken diagnosis. The gentleman who attended considered it a pelvic abscess, while I held the opinion that it was a spinal abscess, as it turned out to be.

1639. Did you attend the operation?—I did not. I see that I signed my name to it in the book.

1640. *The Chairman.*] Who else were at the consultation?—Dr. Gordon Macdonald and Dr. Maunsell.

1641. The object of a consultation is to obtain different opinions, is it not?—Quite so.

1642. And a man may look at a thing from a different point of view from his colleagues?—Yes.

1643. Occasionally, I suppose, you have made wrong diagnosis?—Yes. There are very few men who have not.

1644. You had cases on each side of Mrs. A——?—Yes.

1645. Were you present at the operation?—I had forgotten all about her. I do not think I was present.

1646. Look at that book again; perhaps it will remind you?—I do not think I was present. I would not have been present at an operation of that kind. There is not much in it.

1647. You have just told us that you had cases on each side of her; you certainly had these other cases—six in all?—Are you sure that they are my cases.

1648. They are marked here as Dr. Batchelor's cases?—Well, ulcer of the leg would certainly not be one of my cases.

1649. I am told that those were Dr. Batchelor's cases alongside of her?—Are you sure of that. I do not admit it. [Here the witness described the position of the beds on the plan.]

1650. I will give you some of the names: Mrs. V——, from the 28th May to the 19th June?—I have it from the 17th January to the 17th February.

1651. But she came in again, was operated on on the 28th May, and discharged on the 19th June?—I think you have the wrong date. It was from the 17th January to the 17th February.

1652. It is the fact that she came in again, and was operated on on the 28th May, but we do not know the date of her admission?—It is very improbable that she was in the same bed on two occasions. I cannot find anything about her the second time in this book.

1653. We shall try and give the proper dates presently. What I want to get from the witness is the fact that these two cases were one on each side of Mrs. S——. Do you remember what bed the woman was put in?—The case is mentioned here, but it does not say what bed she was put in.

1654. *The Chairman.*] What was the matter with her?—Cancer.

1655. *Mr. Chapman.*] Do you remember Miss M——?—Yes.

1656. *The Chairman.*] What was her case?—A small fibroid polypus of the uterus.

1657. *Mr. Chapman.*] In the same part of the womb as in Mrs. S——'s case, was it not?—Yes, in the mouth of the womb.

1658. She was nineteen days in the hospital: admitted the 20th June; discharged the 9th July?—Yes.

1659. Mrs. S——, admitted the 10th June, was a case of placenta retained, was it not?—Yes. I remember that woman, and saw her in her bed.

1660. She was over on the side where Mrs. S—— afterwards was?—I think so.

1661. Alongside of Kate W——?—Very likely. I was under the impression that she was on the other side, but Dr. Copland says not.

1662. Do you remember the case of Mrs. B——, an Emmet's operation?—What was the date of that?

1663. From the 12th June to the 9th July?—I remember that.

1664. Do you remember where she was?—I do not.

1665. Was she not in the bed opposite Mrs. A——, and at another time opposite Kate W——?—I do not know.

1666. Was she not moved from one side to another?—I am not going to say anything about that, because I do not know anything about it.

1667. She was in for twenty-seven days and made a good recovery, did she not?—Yes.

1668. The next case is Mrs. A——, the 30th May?—This was a case of ovariotomy. She was brought back and put alongside of Kate W——, and I kicked up a row about it.

1669. To whom did you speak about that case?—To Dr. Copland and the nurse. I am perfectly prepared to swear that I spoke to the nurse first, and afterwards to the house surgeon, about this woman having a septic temperature.

1670. She was at one time in the same bed which was subsequently occupied by Mrs. S——, and was afterwards changed?

1671. She was in twenty-nine days, and made a good recovery?—Very likely.

1672. She was there, was she not, at the time that Kate W——'s temperature was high?—She was alongside of Kate W—— at the time she went into the ward, after removal from the special ward, following the operation.

1673. As to Mary J——, admitted the 8th May, discharged the 28th May. Do you remember her case?—It was a case of displacement of the uterus, but I do not know anything about her position in the ward.

1674. I see that you have got Mrs. V—— entered?—It is not put in its order. She evidently was operated on the first time she was in, but I do not know what was done to her the second time.

1675. Then, you have not entered her a second time?—Perhaps nothing was done the second time; very likely not.

1676. These were cases many of which you say were liable to septic poisoning?—Yes.

1677. You had no trouble with them up to the time of Mrs. S——'s case?—I had not.

1678. Do you know if any other medical men had surgical cases in that ward at the same time?—There was one that I saw, but there was nothing very remarkable about it.

1679. What case was that?—A case of the removal of the breast.

1680. There were two cases of breast?—Yes, but I only saw one of them after operation.

1681. Would that be the case of Mrs. Mary M——, operated on on the 14th July, discharged the 30th July?—Yes; Dr. Gordon Macdonald operated.

1682. *The Chairman.*] Was that in the same ward?—Yes. In consequence of my cases going wrong I particularly wanted to see this case dressed. Dr. Gordon Macdonald, when I was present, kindly dressed it before me. I think he seemed satisfied with it, although I must say that I did not consider it by any means a nice-looking wound. It had not healed by the first intention, and there was some discharge about the dressings, but afterwards it did well, I believe.

1683. *Mr. Solomon.*] Did you see another breast case, that of Amy S——?—I saw her before she was operated on, but I do not remember seeing her afterwards.

1684. She was in from the 30th May to the 19th June. Do you call that a good or a bad recovery, as regards time?—Time is only one element in the matter.

1685. Would you put that case of cancer, after operation, alongside of a septic case?—No, I should not. But you have not proved that it was put alongside a septic case.

1686. When you have operated for cancer you have got rid of the disease?—We try to get rid of it.

1687. You would not deliberately put a case of cancer alongside of a septic case?—No.

1688. Did you know anything about Kate W——'s case?—No; except from the inquiries made afterwards.

1689. Did you not make any inquiries of the house surgeon about her?—Immediately I saw that one of my cases had been moved alongside of her, I noticed the chart, and called the house surgeon's and nurse's attention to it. I was informed by them that it was not a septic case, but I now hold a different opinion.

1690. What was the date that you looked at her chart?—I do not remember just now.

1691. When you looked at her chart did you remember what her temperature was?—No.

1692. Would you be surprised to hear that her temperature was perfectly normal from the 5th June?—I should not be surprised. I was struck at the time I saw it with it being an irregular temperature. When Mrs. A—— was removed back to the ward, to the bed alongside of Kate W——, I noticed that the latter's temperature was high and irregular, as marked on the chart, though I may not have noticed the date.

1693. I now want to ask you a few questions about Mrs. T——'s case. That operation was performed—was it not—by one of your students under your superintendence?—The best part of the operation was done by one of my students.

1694. Do you remember with what instruments he operated?—With the Hospital instruments.

1695. At all events, he was not afraid to use the Hospital instruments?—I do not know I am sure. I thought it was a very trivial case, and certainly did not expect mischief to arise. The instruments required in a case like that are very simple ones, and all you have to do is to see that they are properly cleaned.

1696. Then, you do not complain of our Hospital instruments?—I can tell you that I do not like the Hospital instruments. I, however, use those that can be easily cleaned.

1697. What do you do in the matter of horsehair sutures?—Before I go to my operations I soak them in perchloride, in which they stand until they are required.

1698. Do you use the Hospital sponges?—I always insist on having new sponges.

1699. But in the Hospital?—I will not use an old sponge in the Hospital.

1700. There is a pretty severe drain—is there not?—on sponges?—Yes; but I think I supply the staff with sponges.

1701. At the time of the operation on the 19th Mrs. S—— was very ill, was she not?—No.

1702. She was ill that same day?—She took ill in the evening. I operated on Mrs. T—— at 9 o'clock in the morning, and Mrs. S—— took ill at 6 o'clock at night.

1703. That night her temperature was 102°, was it not?—I think it was 105° that night.

1704. *The Chairman.*] When you operated was Mrs. S—— in good health?—She was fairly well.

1705. *Mr. Chapman.*] Have you Mrs. S——'s chart?—I have a copy of it. [Produced.]

1706. *The Chairman.*] It shows the temperature at 9 in the morning and 9 at night of each day?—Yes.

1707. *Mr. Chapman.*] The temperature seems to have been a little up the day before the operation—in fact, it was irregular for a couple of days?—There was nothing abnormal the day before the operation. She was taking medicine.

1708. *The Chairman.*] When was she operated on?—On the 16th.

1709. *Mr. Chapman.*] You have described Mrs. T——'s case in a letter to the Trustees. Do you remember writing this letter [produced] on the 22nd?—Yes.

1710. Did you see Mrs. T—— at about that date?—In all probability I should have seen her that morning. Of course, I knew that she was ill, and I was anxious about her.

1711. At the date that you wrote that letter she was ill, because you say in it, "I was anxious about her"?—Yes.

1712. How was she the next day?—I think that she had got better.

1713. Do you know that the next day she was sitting on the side of the bed, and dangling her legs?—If she was, it reflects discredit on the nurses in the establishment, because she had no business to be doing so.

1714. But she was getting well?—How could she be well? That remark shows me that you are being misled, and also shows how incapable our Chairman of Trustees—to whom I give every credit for good intentions—is of understanding the bearings of a medical case. If Sir James will recollect, when we were paying our visit to the wards the other day, there was a little argument about this case. Mr. Miller apparently had visited the wards the day after I had written my letter,

and had apparently caught Mrs. T—— stiting up over the edge of the bed, and at once concluded that I had been exaggerating the severity of the case. As a matter of fact, this woman ran a very extreme risk. The walls from which the cyst had been removed contained a large number of veins, separated from the cavity by the thinnest of walls. On the Monday, two days after the operation, when I visited her, I found this cavity filled with matter, and the veins were consequently soaking in it. It is purely a matter of chance that this patient did not die from blood-poisoning.

1715. You say that it points to something improper in the nursing arrangements?—Yes, if she was dangling her legs over the side of the bed, as you say.

1716. If she were sitting at the side of the bed?—Yes; she had no business to be there. I should have kicked up a good row if I had seen it. I was very anxious about her then, and will be for some days yet.

1717. *The Chairman.*] Is she in the Hospital yet?—Yes.

1718. *Mr. Chapman.*] This seems to be her chart [produced]? I should like to look at the notes on her case. Here are the full particulars of the operation: "19/7/90. The cyst on the labium was removed. An incision was made on vaginal surface of the labium, and one large cyst containing a clear glutinous fluid was evacuated, besides several smaller ones. The cyst walls were then dissected away; a horsehair drain was put in the wound, and the edges were brought together by a continuous horsehair suture. Previous to operation, the vagina was washed out with Jay's fluid. The wound was dressed with iodoform and carbolic acid. 20/7/90. Wound dressed three times since operation; very little discharge. Evening temperature, 102°; morning temperature, 101°; no rigours; slight headache. 21/7/90. Some discharge from wound. Temperature 99°. Patient given chloroform, and wound opened up, and counter opening made in front of labium for drainage. Vagina washed out. Wound washed with bichloride and dressed with it. 22/7/90. Evening temperature, 101°; morning, 99½°. Wound looking better than before. Washed out and stuffed with lint, soaked in carbolic oil. Vagina washed out. 23/7/90. Temperature 99°. Some slight discharge. Vagina washed out. Wound dressed as before. 24/7/90. Temperature, 99°; less discharge. Wound dressed. 25/7/90. Temperature, 99°. Dressing changed to carbolized tow. Wound looking better. 27/7/90. Temperature normal. Wound looking well; little discharge. 13/8/90. Wound slowly granulating up."—If I had been asked when this case came into the Hospital how long the woman was likely to remain in the Hospital, I should have said about eight or ten days.

1719. But you are not always right in your prognostications?—Evidently not. But I manage to get nearer the mark outside than in my hospital practice.

1720. Are you always right in your private practice?—No. None is infallible.

1721. You have mentioned Mrs. P——'s case. She was admitted on the 10th May, and operated on on the 8th July?—I think the operation was performed on the 9th July.

1722. On the 25th, her temperature ran up to 102°, did it not?—Yes.

1723. It ran up pretty suddenly, did it not?—Yes.

1724. On the 19th, it was 101°?—Yes. She had a rise then—I was not paying attention to it—which Dr. Copeland accounted for by her having had a bilious attack.

1725. On the 26th it was 101°. Now, all this time she was in the same ward with Mrs. S—— and Mrs. T——?—Yes.

1726. And both of these women had, you say, septic cases?—Yes. But you must remember that these two septic cases were of an entirely different class to Mrs. A——'s.

1727. But I am not asking you about Mrs. A——'s case?—But I think it only right to point out that there was a difference between them.

1728. Was there any danger to the others on account of Mrs. P——'s case?—I do not think there was much, though of course there was some.

1729. Would you put her alongside of a patient just operated on?—Not if I had a ward to myself.

1730. But you did so, in fact?—Very likely I did. But in this Hospital you have to put up with what you can get.

1731. Do you remember Mrs. M——'s case. She was placed in No. 8 ward preparatory to operation, but has not yet been operated on?—She is there still, I believe.

1732. I see you have made up your mind to do no more operations in that ward?—I have told you about that already, so there is no use your repeating your questions about it.

1733. She is in the same ward as the other cases?—I was bound to put her in the same ward.

1734. Did you not place Mrs. P—— next to a Mrs. P——, who is discharging pus from the vagina and the bowel?—I did not place her there. I sometimes object to the placing of patients.

1735. Do you not control the placing of the patients?—Sometimes. If I mention that I wish to have a case removed, I have no doubt that Dr. Copland will move it.

1736. *The Chairman.*] What is Mrs. P——'s complaint?—She had an abscess, and now suffers from chronic Bright.

1737. *Mr. Chapman.*—Now come to the case of Mrs. B——. She came in with a septic temperature, did she not?—She may have done, but I cannot remember.

1738. Were you not responsible for the placing of that patient?—No. But if I had seen any reason for objecting to her being placed where she was I should have objected.

1739. You say that you would object to the placing of patients if you saw reason to do so. What are your objections to the attendants doing so?—I have no doubt that Dr. Copland makes alterations in these cases whenever he thinks it is necessary, and therefore I do not think there is any necessity to make any further alteration without good cause. [Mrs. P——'s chart here handed in.]

1740. *The Chairman.*] You have told us that she is still in the Hospital?—Yes.

1741. What state is she in now?—I have not examined her for a week past, or even longer. I am doubtful whether I am justified in making any vaginal examination whatever in these wards. I think it is probable that her tubes are diseased, as the result of the recent attack; they will be probably blocked, and will subsequently require severe operation.

1742. *Mr. Solomon.*] When the woman was admitted was there not evidence of old peritonitis?—Yes; and in consequence of that I delayed operating for two months, and adopted other remedial measures. I was doubtful for a time as to what operation would be required—an Emmet or the more severe one of Tait. I always try and give my patients a chance of getting better with the least risk.

1743. Tait rather ridicules Emmet's, does he not?—No; he does not.

1744. Does he not speak of it as a useless operation?—He does, but that is a subject on which Tait has something to learn.

1745. Then you strongly approve of Emmet's operation?—Yes. I have seen splendid results in suitable cases, and am proud of these results. It is a great satisfaction to me to know that upon this one subject, at any rate, I am sounder than even so eminent an authority as Tait. Tait is undoubtedly a genius and has wonderful results, and has had results that I can never hope to approach in his abdominal work. But the knowledge that, even in this out of the way corner of the world, a man can by careful observation more than hold his own on some points of our work, even with such an eminent authority as Tait, makes one hopeful of being ultimately able to take up a good position in his profession. This operation of Emmet's was introduced by the Americans, was then adopted in Germany; England and France are now gradually becoming imbued with its importance, and it is now one of the recognised operations of importance of gynecology.

1746. As to Mrs. S——'s case: what was her temperature prior to operation?—Do you mean the whole length of time prior to operation?

1747. Just take a few days prior to operation?—I would like to explain this matter. I visited this ward every day, and it was my practice to glance at the temperature charts. I looked at it once a day, but saw nothing in it to excite any suspicion. I visited the ward the day before the operation, but saw nothing abnormal about her temperature then. I did not go into the ward on the day of the operation. Mrs. S—— walked down to the operating-room, and to all appearances she was perfectly well. Whether her temperature was up or not, I contend that it was the duty of the nurse, if it were up to have told me of the fact. As a rule, I do not go into the wards immediately before operation. On the day following the operation I went into the ward, and, looking at Mrs. S——'s chart, saw that a temperature of 101° was registered on it. I am perfectly prepared to swear that, on that day, that was the only rise of temperature marked on that chart at that time. If her temperature was up the day before the operation, all I can say is that I know nothing about it. The only temperature I saw was 101°, and that was on the morning following operation. I have a note in my hospital note-book of the first rise that was marked there, and that was 101°, the day before the operation.

1748. At what time do you go into the wards?—Usually about nine, or ten minutes past.

1749. *The Chairman.*] What was the chart when you saw it on the morning of the 14th?—Normal; 99°.

1750. In the evening it is marked 101°?—I did not go into the ward the day of the operation, but when I went the next day I saw the air rise marked in the temperature.

1751. Have you any reason to doubt that this chart is correct?—I have.

1752. Then you do not consider the chart to be correct?—I will not say that. All that I say is that I am doubtful about it.

1753. *Mr. Carew.*] When did you next go into the ward?—On the morning of the 16th.

1754. You did not notice the date of the temperature on the morning of the 16th?—I did not notice the date.

1755. *Mr. Chapman.*] You never saw the chart again that morning?—It was on the morning of the 16th that I noticed a sudden rise to 101°.

1756. *The Chairman.*] It is given here as a rise of 101½°?—All that I can say is that my clerk put it down in the book.

1757. *Mr. Chapman.*] Do you say that the book was wrong at the time?—You must ask my clerk. I do not know anything about it.

1758. You say that you next saw the chart on the morning of the 16th, when it was 101°?—Yes. There was only that one entry. What struck me was the suddenness of the rise, and I drew my clerk's attention to it. I said: "Halloo, here's a rise! There's something wrong." I was very much surprised to be told subsequently that there had been a rise of temperature before that.

1759. Told by whom?—By medical men outside. It was from them I heard that the patient had had a rise of temperature the day before I operated on her. I then went to look at the chart, and was greatly astonished. I cannot account for it.

1760. *The Chairman.*] When you saw the chart on the morning of the 16th, and saw it was up to 101°, you could hardly have failed to have noticed a previous rise if it had been recorded?—If it had been marked I certainly should have noticed it. The rise may have occurred, but I am certain it was not entered on the chart. I am quite prepared to swear that.

1761. Then you do not believe that there was any marked rise in temperature from normal previous to operation?—I do not.

1762. *Mr. Chapman.*] I understand you to say that you last saw the chart, prior to operation, marked on the 14th?—Yes.

1763. And the temperature was then normal?—Yes.

1764. Have you made any inquiries since as to the changes in her temperature?—No.

1765. Did you make any inquiries of the nurse as to the changes in her temperature?—No.

1766. Did you think, then, that the fact of the patient having walked down from the ward to the operating-room was sufficient evidence that her temperature was normal?—I do not. But I think if her temperature had been up she would have shown some signs of it. If her temperature really had been up the day prior to operation, it would have been very strong evidence in favour of the trouble having arisen in the ward, and localise it there; but I do not believe it was up. I think it was a mistake, and do not wish to take advantage of it.

1767. If you had known of the rise in temperature, would you have operated?—Knowing what I do now I should not have operated.

1768. Does it not induce you to defer operating when you see a rise in temperature?—Yes, in some instances.

1769. You have told us that an operation of this sort may have to wait for weeks or even months, while, according to Lawson Tait, it may wait much longer?—Yes; you may wait until you take her tubes out.

1770. But in a case of this kind, which is an operation of expediency, would you not be chary about operating if you knew that there had been a rise in temperature?—I tell you that I honestly think that if I had known of this rise in temperature I should not have operated.

1771. Did you make any remarks on the case before operating?—Yes. I made the remark to my clerk: "This case is one in which I am justified in operating at once."

1772. Do you know whether she had had her courses since admission?—Yes. I made inquiries about that. The notes are here: "Courses have been pretty regular up to date; rather too profuse."

1773. Had she menstruated since her admission?—I really cannot tell you.

1774. Did you ascertain that fact?—She had not been in very long.

1775. She was in from the 9th to the 16th; rather less than a week?—Yes. I really cannot say anything about it, but I think that she had menstruated just before she came in.

1776. Did you inquire whether she had or not?—I am certain to have made some inquiries, but I cannot tell you now. I do not like to perform an Emmet operation when the menstruation period is due.

1777. Did you know about her having another discharge?—She seems to have told my clerk that she had a discharge. Most women say they have.

1778. A discharge which has been described as "yellowish and sticky"?—If you ask women about discharges, you will always find them.

1779. To what do you attribute the discharge she spoke of?—There is always a vaginal discharge of some sort. The vagina is a moist passage.

1780. But you diagnosed dragging of the ovary towards the womb?—Yes; the left ovary felt somewhat dragged to the cervex.

1781. Did that indicate old peritonitis?—Not necessarily.

1782. *The Chairman.*] Does it mean displacement of the cervex?—No. The position of the ovary is noted more as a matter of routine practice than anything else. I was very careful in this examination, and I try in every case to find the exact position of the ovaries. The remark in this case means nothing of itself.

1783. *Mr. Chapman.*] Did you ascertain anything about her history: whether, for instance, she had had rigours?—I suppose all these things were gone into. I do not put everything down in my case-book, but if there had been anything of that sort it would have been put down.

1784. Did you have a consultation before operating in this case?—I did not.

1785. Do you describe it as a serious operation?—Certainly not.

1786. Not serious within the meaning of the by-law?—Certainly not.

1787. Do you know the provisions of the by-law on the subject?—In regard to operations?

1788. I mean the by-law which requires "consultation" in serious or important cases?—Yes.

1789. Then you do not consider these cases sufficiently important to require consultation?—I never do. I do without consultations in them.

1790. Did you ever tell Mrs. S—— that this was an operation from which she might die?—I did not. I do not try and frighten my patients unnecessarily.

1791. Do you know whether she wrote to her father or her friends telling them that she was told that she was to undergo an operation from which she might die?—If anybody told her so it was a most injudicious act.

1792. You did not expect any such danger yourself?—I did not.

1793. It was not then, what your counsel described the Hospital in his opening address, a "hot-bed of septic disease"?—I think it was you who so described it.

1794. Oh no, I did nothing of the kind; it was Mr. Solomon, I can assure you. Did you approach the operation in her case with fear and trembling?—No.

1795. Was any one present at the operation besides yourself?—Dr. A. J. Ferguson was present during the whole of the operation, and Dr. Maunsell was present during the greater part of it. Dr. Copland administered the antiseptics throughout the operation. I do not think any others were present.

1796. In the subsequent treatment were you assisted in any way by these gentlemen?—No. I received assistance during the operation from Mr. Hogg and the nurse, and a gentleman standing by filled up the solution of perchloride.

1797. *Mr. Solomon.*] Is that for the douche?—Yes. These were the only medical gentlemen there to the best of my belief.

1798. Was not Dr. Jeffcoat present at the operation and attending to the douche?—I am under the impression that it was Mr. Reid who worked the douche. I do not remember Dr. Jeffcoat being in the room during the operation. Of course, he may have been, but I certainly did not see him.

1799. *Mr. Chapman.*] You were asked by Mr. Solomon whether there was anything about yourself by which you might have communicated disease to the patient, and you replied in the negative. I understood you to say that, as a matter of fact, you are extremely careful?—I am. It is an operation in wh. h we do not touch or come into contact with the parts. It is all done by instruments.

1800. Were you attending any dangerous cases of your own at this time?—No. My private practice has been singularly free from septic trouble of any kind.

1801. I suppose in the course of your practice you do attend cases of the kind?—Yes, but I have been entirely free from infectious cases for some time past.

1802. Were you attending any erysipelas cases at that time?—I was not. I had been attending one a fortnight before.

1803. Where?—In the neighbourhood of the Hospital: down Leith Street.

1804. Are you sure that you carried no mischief about with you?—Quite sure.

1805. Are you certain about it. Please look that case up and satisfy yourself about it?—As this point may crop up again, I may as well draw attention to it now. It is absurd to think it is possible that I could have carried any contagion to the hospital cases. Outside, in my private practice, I was dressing two cases of abdominal section daily, one of which required washing and cleansing three times a day, and during this week I had a confinement case, requiring a considerable amount of manipulative interference. As regards the erysipelas case I have a strong impression that it was well a fortnight before, though I cannot tell positively without looking at my books.

1806. It has been suggested that you might have carried disease about in your clothes?—I do not believe so much in it being carried about in one's clothes. I believe poison is more often conveyed through dirty hands and dirty nails on the part of the medical attendant. I always impress on my students the importance of attention to these details.

1807. There is one matter that you referred to in your examination: I refer to the case of Mrs. Sophia M——, which happened about four years ago. You told us that you had several theories about it, but that you hold a different opinion about it now?—At the time of Mrs. M——'s case there was a link in the chain of evidence missing, but the *post-mortem* on Mrs. S—— discovered it. Mrs. M——, shortly after operation, we recognised, suffered from acute endometritis; subsequently suppurative peritonitis occurred, from the effects of which she died. At the *post-mortem* on Mrs. M—— we examined the fallopian tube leading from the uterus to the peritoneum, and from its exterior appearances we judged that it was healthy. In Mrs. S——'s case the same condition of affairs existed, and with Mrs. S—— too the fallopian tubes, to all external appearances, were perfectly normal. Dr. Roberts, our pathologist, did not know in those days as much as he does now, for in Mrs. S——'s case he went a step further than we did in Mrs. M——'s *post-mortem*, for he cut across the tubes, and from the divided ends their fluid pus escaped, proving the direct extension of the mischief from the uterus to the peritoneal cavity. That is the missing link that I referred to, and which clears up the doubt in Sophia M——'s case.

1808. You had an article in the *Medical Journal* on the subject?—Yes.

1809. You did not suggest that view then?—No, I did not. I had a great many different theories about it. One was that I had operated too soon after delivery. Having failed to find the true link I had recourse to theories. This somewhat extraordinary elucidation of the case I should have almost been ashamed to bring forward now, were it not for the fact that I have the printed records of Sophia M——'s case, with full notes of the *post-mortem*, published some years ago, to which reference can be made.

1810. Did you send a second letter to Mr. Miller?—Yes.

1811. And you had a conversation with him?—Yes.

1812. Would that be after you took the first letter to him?—I think it was.

1813. Did not Mr. Miller say to you on that occasion, "Doctor, if you have any complaints put them in writing and send them into the Trustees"?—The impression left on my mind was that Mr. Miller thought it would be better to make no unnecessary fuss, and I for my part was quite willing to withdraw the letter, as far as publicity was concerned, if the Trustees inquired into matters.

1814. When he told you to send in your complaint to the Trustees, did not you say that you would consider what further action you would take?—Very likely I did.

1815. Did you not say that you would talk it over with some of your friends?—That is very likely indeed. I will not speak positively about this matter.

1816. You seem to have anticipated a secondary operation in this case; after the first operation, you at once anticipated that there must be a second?—You are putting it too strongly altogether. There was hemorrhage, and we took precautions in case of its recurrence. You said she was a "bleeder."

1817. But you said it yourself?—You mentioned it first.

1818. I can assure you that I learned the term from yourself?—I do not think so. Possibly you learned it from Dr. Copland. The word "bleeder" is a very wide term, and might be applied definitely to certain diseases. What I meant to say was that when we cut through the abdominal walls the wound bled freely. There was, in fact, a free loss of blood—so much so that I took precautions which we do not use in every case of the kind. We inserted a glass drainage-tube, partly as a means of arresting hemorrhage and partly as a means of letting you know when it does occur.

1819. You left the drainage-tube in to see whether the bleeding was going on?—That was one reason.

1820. Had the bleeding virtually stopped when you left the case?—Undoubtedly it had.

1821. Had it stopped before you put on the dressing?—Yes. But you must not think it was absolutely dry when we left.

1822. Before she was removed from the operating-room, could you say that the blood was welling up in the tube?—There was no blood welling up in the tube.

1823. Would it be wrong to say that you had never succeeded in stopping the bleeding?—Undoubtedly it would be wrong.

1824. Was any blood taken out of the tube?—Usually some blood-stained fluid wells up to the top of the tube.

1825. Was it left dry—I mean before she left the operating-table?—You cannot leave the top of the tube bare; you must put something on top of it to absorb any moisture.

1826. But before that was done: did you see the nurse taking blood from the tube?—All I can say is that there was nothing unusual; it was perfectly normal.

1827. I ask you again, did you not anticipate having to perform a secondary operation?—I certainly did not anticipate that.

1828. When did the idea of the possible necessity of a secondary operation first occur to you?—At 6.30, when I visited the ward, and the nurse reported to me that she had found hemorrhage.

1829. That would be 6.30 in the evening?—The same evening as the operation was done.

1830. And when did you perform the secondary operation?—Between 4 and 5 the following morning.

1831. But when you went home you made ready for it?—To some extent I did.

1832. Then you expected it after that visit?—I certainly made some preparations for it. I got my lamp ready, and told Dr. Copland to have things ready and prepare for it as far as he could; but the probability is that he would have done so without being told, as he knew I was very anxious about the case.

1833. The lighting of the ward is one of the things you have complained about. Have you ever made such a ground of complaint before?—For primary operations this want of light was certainly a ground of complaint. At one time when we operated in these wards we found light very inefficient.

1834. One of your complaints against the Hospital is connected with Mrs. T——'s case?—It is.

1835. You complain of the insufficient lighting of the ward?—Yes; and of the appliances.

1836. And of the distance that the nurses had to go for water?—Yes.

1837. Have they to carry the water a long distance?—It is a long distance when you are dealing with a case of hemorrhage.

1838. I understood you to say that Mrs. T—— was the private patient of a medical man outside?—She came down here from Christchurch, having been sent down, I think, by Dr. Hacon—but I was away at the time—to Dr. Maunsell, who transferred her to me.

1839. The case was one in which you say there was a good deal of bleeding?—Yes, she bled very readily.

1840. When did you ascertain that?—At the time of operation.

1841. You wrote a letter, did you not, to Mr. Miller in reference to this case?—I did; but I afterwards withdrew it.

1842. You did not actually send that letter in as a communication to the Trustees?—I sent it to Mr. Miller for him to make use of and act on, but I did not withdraw it in the ordinary sense, or that I wished matters to remain as they were. It was really a question between the Chairman and myself whether this case should be made public and a Coroner's inquest held, or whether Mr. Miller should act in conjunction with the Trustees privately.

1843. Have you light by day?—Certainly. I should prefer operating in this ward by daylight.

1844. But for emergency cases at night, have you ever before had occasion to find fault?—I have not.

1845. Then this was the first occasion that you had had to complain of the insufficiency of the light?—Yes.

1846. You say that there is only one gas-jet?—Yes.

1847. Is there not one gas-jet over the bed, and another on the opposite side?—But that other one is not of the slightest use.

1848. Would not a candle have been of assistance?—You cannot see inside an abdominal cavity with a candle. Besides, you run the risk of dropping grease down.

1849. Was not the bed brought round so as to get you the best light?—That is where the patients' beds usually are.

1850. But her bed was not in its ordinary position?—We may have moved it a foot or so.

1851. Did you ever suggest having a lamp for this special purpose, such as is used in other hospitals?—In the operating-room there is a very good light for night-work.

1852. You have never asked for such a lamp?—No. What I have contended for is a special ward with special appliances, suitable for any emergency which may arise, to which these cases are subject. But the Trustees did not take my advice.

1853. When did you give them that advice?—From time to time.

1854. Since when?—Since that money was collected; but the Trustees would not take it.

1855. You further complain that the water-supply was insufficient?—Yes, because the nurse had to run out of the ward for some.

1856. Did it take her long to do so?—Quite long enough to let our siphon run out.

1857. If you had had another nurse to carry the water that might have been obviated?—I have no doubt that two or three nurses might have been got by calling them.

1858. But you had two nurses and the matron present?—They were doing their best, but the delay occurred nevertheless. I should like to say a word or two about this case.

1859. You brought up this case yourself, and my reason for asking you these questions about it is so that you shall not complain of unfairness when we call evidence about it by-and-by. You are

quite at liberty to make any explanation you please?—This case, I may say, made a great impression on me, and I reported it to the Trustees through Mr Miller.

1860. When did you report it?—Immediately I understood from Mr Miller that the Trustees would take action in the matter, but when I found that nothing was done I felt very much disappointed. When I found that out I saw the Trustees individually. I remember going to one of them and saying, "You have not taken any action in the matter of my letter. Something certainly ought to be done." The gentleman in question replied, "We think you are to blame; you ought to have had a lamp." I thought if we must have a death before we can get what we want it will be a very expensive way of doing things.

1861. But you have not asked for these things?—I asked for a ward, which included these things. If doctors have to kill patients before we can get what we want it is a bad look-out, and to my mind shows that the Trustees do not understand the responsibility of their position.

1862. *The Chairman.*] I understand that you are talking of a special ward, not for your own cases, but for special cases?

1863. *Mr. Chapman.*] Have you not been talking of your own pet scheme?—I am talking of a special ward for ovariotomy cases. The greater would include the less, and I intended that any one should have the advantage of this ward for suitable cases.

1864. I wish to ask you again about the blood in the tube. Did you notice at the time that there was something wrong?—I did not.

1865. Are you sure of that?—Quite sure.

1866. You had no suspicion of anything being wrong?—The mere fact of using a drainage-tube at all shows that there was something that was a little unusual for a woman of her age to have to use it all.

1867. Do you remember using such an expression as this to the nurse: "Put on the dressing and we will chance it"?—I may have, but I do not remember saying so.

1868. Will you deny having used such an expression?—No. It is quite likely that I may have used it.

1869. You said that there was a consultation in this case?—Yes; I had a consultation with Dr. Maunsell.

1870. But that was not a consultation within the meaning of the by-laws?—No. I did not call a consultation, because she was a private patient of Dr. Maunsell's. Besides, she objected to having strange doctors about her.

1871. By coming into the Hospital, was she not distinctly amenable to the by-laws?—Well, I broke the by-laws, and should break them again if I had a case of the same kind.

1872. Why?—Because I consider that I was justified in doing so. The by-laws ought to be altered. The Trustees have drawn out by-laws which do not apply to cases of such extra risk as are involved by repeated examinations.

1873. You say that the by-laws are wrong; that you have broken them, and will break them again?—I do, and will do so again.

1874. Was a *post-mortem* examination made?—No; we knew exactly what was the cause of her death, and we could have learned nothing more if we had made a *post-mortem*.

1875. You do not think it necessary that the Hospital authorities should have any voice in the matter, as it were?—I do not.

1876. In the case of a *post-mortem* the examination would have been made by some one else?—Yes.

1877. Whose duty would it be to perform it?—I find I have made a mistake about that. We did make a *post-mortem*, or, rather, reopened the wound after death; I think Dr. Copland did it.

1878. *The Chairman.*] That was not an official *post-mortem?*—No.

1879. *Mr. Chapman.*] There was some question about the ovarian vein?—Yes.

1880. When the examination was made that was found to be tied, was it not?—Yes.

1881. When was it tied?—At the secondary operation, if it was the ovarian vein, which I am not prepared to say. We found a large vein from the side of the pelvic wall which had been torn across. The chief hemorrhage, which was the cause of the death, had taken place from this vein. These operations are performed solely by sense of touch, and the parts are separated or torn away without any view of the deep tissues. We expect hemorrhage in these operations, but it usually shortly stops spontaneously, especially after the use of the drainage-tube, as it apparently did in this case. No ligatures were used beyond those for the pedicle during the primary operation. Any ligature, therefore, found at the examination after death was applied in the secondary operation. I do not want any medical men to make blunders through ignorance on this subject, and therefore I have explained that it is bad practice to make a big cut so as to be able to see every step of the operation, and to attempt to tie every little vessel that is necessarily torn across in an operation of this character.

1882. I want to ask you in regard to the answer you gave to Dr. Hislop, that in a certain year you had no deaths, only two close shaves. When was that?—I cannot tell you what year it was. He was reading from the annual Hospital reports.

1883. *The Chairman.*] Was he reading from the printed reports of the Hospital?—Yes; but I cannot tell whether it was correct or not. Taking up the report in his hand, after my paper criticizing the state of the Hospital had been read, he said, "But you have had no deaths," and I took him at his word. I think, in all probability, it would have been the 1888 report he was quoting from.

1884. *Mr. Chapman.*] He would not refer to 1888, because there were several deaths in that year?—I did not know anything about it, and just took him at his word.

1885. *The Chairman.*] Would it have been in 1887?—I really do not know what year it was, and did not trouble my head about it.

1886. *Mr. Chapman.*] What did you mean by having had "two shaves"?—I can tell you the cases I had the shaves in.

1887. Was one of them Mrs. E——'s case?—Yes. In my book, at page 191, it is reported in full.

1888. *The Chairman.*] I see that in 1887 there were eleven cases, and no deaths?—Possibly that was the year.

1889. *Mr. Chapman.*] There seems to have been several deaths in 1888?—I do not know anything about that. When the doctor took that list in his hand he simply said that there were no deaths in this year; and I took it that he referred to the year in which I had known these two "shaves" had occurred, and did not seek to confirm his statement, or otherwise.

1890. How many beds in the Hospital are you entitled to for your cases?—Nine.

1891. It was in 1886, I think, that you applied for the appointment which you now hold—on your return from England?—I applied before that; but I got it definitely confirmed on the 24th May, 1886 [letter of 12th January, 1886, handed to witness]. That bears out what I said about having applied for the appointment before.

1892. Then each year the practice is to apply for the appointment to be renewed?—Yes. It is practically a fresh appointment each year.

1893. Which has to be renewed from year to year?—Yes.

1894. You seem to have fixed on 1887 as the year in which you had no deaths. Do you remember the case of Mary C——, admitted 8th November, 1887, died the 25th December. The date of operation is not given?—I remember that case perfectly well. She had an abscess in the peritoneum, following confinement, which I opened and drained. She obtained temporary relief, but eventually died.

1895. So that there was apparently a death in 1887?—Very likely. There may have been others, for all I know.

1896. Look at this [handing book to witness]. Possibly that will bring you a little closer to the date: "Dr. Hislop quoted from the returns of deaths in the Hospital for 1888, to show that under the ordinary diseases of the reproductive system seventy-one cases were treated, but there was not one death." "Dr. Batchelor: That is perfectly correct. You must remember that our cases are few. Among my own cases I never had death; but I have had two 'shaves.' One was the case in which the woman had bronchitis. She did not die, but she came very near it. The other case was when the woman could not sleep at nights, owing to the noise in the passage. She nearly had an attack of mania. Although there had been no cases of death, the risks I say are greatly increased"?—I think that we must have made a mistake. I took Dr. Hislop at his word, and thought his quotation to be correct.

Re-examined.

1897. *Mr. Solomon.*] There are a few questions I should like to ask you in order to clear up some points that have been referred to in the course of your cross-examination. In the first place, Mr. Chapman has asked you about twenty times whether you can find any official record of complaints by the staff against the sanitary condition of the Hospital; and I think you have answered him about an equal number of times. I ask you was there any division of opinion amongst the members of the staff that the sanitary condition of the Hospital was unsatisfactory?—Not so far as I am aware; we all looked on it as unsatisfactory.

1898. You heard what Dr. Roberts said on the subject yesterday. Do you agree with him?—I do.

1899. He says that during the whole period that he was house surgeon, up to 1887, he on very many occasions complained of the stuffiness of the wards and of their draughtiness. Does that coincide with your experience?—It does very closely.

1900. As to the new operating-theatre, you also thought that to be a necessity?—Yes.

1901. And reform of the nursing system?—Yes. I have always been very strong about that.

1902. You thought it was a very important matter on the score of sanitation?—Yes; I did then, and think so still. They are both very important, and both are essential.

1903. The difficulty, so far as the Trustees are concerned, has been one of finance?—That has been the whole difficulty; at least, they have always given us to understand so.

1904. Therefore, you have thought there was no use in asking too much. Is it the fact that the Trustees recognise the necessity for a lot of the reforms you ask for to-day?—I believe they do, and I believe also that they would have made them if they could have depended on support from the public.

1905. Is it a question of want of funds, or a question of what is necessary?—I should think it is a question of want of funds.

1906. You have also been asked various questions suggesting that you find fault with the Trustees for the state of affairs which exists at the Hospital at the present time. Do you find fault with the Trustees?—I have every reason to be grateful to the Trustees as individuals, they have always met me, as far as they possibly could; and I am sure that during the last eighteen months—since I gave that address—they have given an enormous amount of time to hospital matters, far more than the public are aware of. I have known the Trustees to sometimes spend four or five hours a day discussing hospital matters.

1907. Your complaint rather is that the Hospital is unsatisfactory, than that the Trustees ought to be blamed because the institution is in an unsatisfactory state?—Yes. I do not think that the Trustees are at all to be blamed.

1908. All that you complain of then is that the Hospital is unsatisfactory?—Yes. Any blame that has been thrown on the Trustees has been drawn out of me in the course of cross-examination. I was obliged to answer the questions asked me by Mr. Chapman.

Mr. Chapman: Do I understand my friend to say that there is no complaint against the management?

The Chairman: I do not think that you are called on to express an opinion on the point, which is not involved in your complaint.

1909. *Mr. Solomon.*] Do you approve of the present system of management of the Hospital by the present Trustees?—I do not. I am very strongly opposed to it.

1910. You have been taken to task by Mr. Chapman for not having formally complained before. Does your experience show that there is encouragement given to a medical man to complain of shortcomings in the Hospital?—It certainly does not look like it.

1911. I suppose you have had to do it single-handed so far?—I have.

1912. *The Chairman.*] I understand that your complaints are made against the Hospital, and not against individual Trustees?—Certainly not against individual Trustees; my complaints are against the management generally.

1913. You do not blame the Trustees individually?—No; I have no reason to blame them individually, but I do blame them as a body.

1914. *Mr. Solomon.*] The staff have assisted you to a certain extent?—Yes, to a very great extent.

1915. When it came to the question of formulating your complaints against the Hospital, did you find any delicacy of or private feeling amongst the staff which interfered with the carrying of the resolutions which you brought forward?—There were a good many elements that came in the way. Some men are not easily convinced. It takes them a long time to understand the important bearing of the hygienic conditions of the Hospital. Then, again, they must have the opportunity of comparing the results outside with the results inside.

1916. Possibly it was thought better not to have a row?—There was a very strong feeling on the part of some members that the reforms might be effected without kicking up a row, and that they would come gradually. I, however, came to the conclusion that we could only effect these reforms by coming to a unanimous resolution in regard to them.

1917. You have been asked some questions about operations of expediency. In such a case as an operation for laceration of the uterus, there is danger is there not, of irritation?—Yes; there is a well-known danger. Any long continued irritation in certain localities of the body is apt to lead to cancerous changes. I consider cancer of the mouth of the womb not rarely starts from the irritation of an old tear.

1918. And that is an operation which is one of expediency, in the sense that it is not required to be done at the time in order to save life?—Exactly.

1919. Is it necessary for the security of the patient's health?—That is a question that would take a very extensive reply. I think this is a source of a large proportion of diseases of the female generative organs.

1920. On your behalf, I have stated that one of your objections is to treating your special cases in a surgical ward, and you have told the Commissioners that there are brought into the ward cases which are not under your control, but which are a source of danger to your patients. Mr. Chapman has suggested that it would be an easy thing to obtain information concerning these cases from the person who has control of them. Is there likely to be any difference of opinion that in such cases the better way to do away with possible danger is to remove the cases, or should a doctor make inquiries about these cases?—I think each man should ask for himself.

1921. Do you think it safe to rely on what the House Surgeon tells you under such circumstances?—As a general rule you can, but of course mistakes are sometimes made. Every man is the best judge of his own case.

1922. Would not that involve inquiry of the House Surgeon about every case that came in, which would be exceedingly inconvenient?—It would be perfectly absurd to attempt to do so. Half one's time would be occupied in inquiring about other people's patients, instead of attending to one's own.

1923. Do you think it a proper state of affairs to exist that you should be compelled to go round making inquiries about every case that came into the ward?—No; it is very wrong.

1924. Mr. Chapman, from the questions that he put to you, seemed to think that, because other cases of yours in the ward had recovered, that the ward was therefore safe. Is that a proper conclusion to arrive at?—No. I do not think that Mr. Chapman attended carefully to what I said in my original statement. I said that very often cases went well, and that then there would be a succession of bad cases, which one could not account for.

1925. Suppose you have ten cases in a ward, and that seven of these get better in the ordinary way, while the other three cases show septic symptoms, as three cases have, in fact, done here. Does that show that the insanitary state of the Hospital had anything to do with the other cases that turned out well?—No.

1926. If the ward had been in a sanitary state, ought not all the cases to have turned out well?—I am convinced of that.

1927. And by the use of antiseptics you attempt to cope with the dangers of the ward?—That is the object of antiseptic treatment.

1928. And in the majority of cases, I suppose, you do cope successfully with them?—Undoubtedly.

1929. You have told us that if you had been asked when Mrs. T—— came into the Hospital how long would she stop there, you would have replied: "About ten days;" and you have also told us that you are not always correct in your predictions?—Yes.

1930. You also told us that she is still in the Hospital. What condition is she in now?—She is not in a precarious condition—that is to say, there is no danger to life. There is a deep wound, which must take time to heal.

1931. Would any mistake which a surgeon is ordinarily liable to make account for such a case as that?—I do not follow you.

1932. You have told us that if you had been asked when she came into the Hospital how long she was likely to stay there, you would have answered ten days, but that you are not always correct in your diagnosis. Do you think that a mistake in a calculation of that kind will at all account for the enormous difference in the time you thought Mrs. T—— would be in the Hospital and the time she has actually been there?—Certainly not.

1933. *The Chairman.*] Do you think it is attributable to natural causes?—No.

1934. *Mr. Solomon.*] In trying the other day to account for the unusually high death-rate in Dunedin Hospital, it was suggested that it might be accounted for by the large number of cancer cases that occurred in the Dunedin Hospital. Have you made a comparative table of these cases in the Dunedin and Auckland Hospitals?—I have. Mr. Chapman has attempted to show that the proportion of deaths in the Dunedin Hospital may be due partly to the heavy mortality from cancer, in Auckland there being four deaths in thirty-two cases, while in Dunedin we have eleven deaths in twenty-seven cases. Now, every medical man knows that there are a large number of cases of diseases of the digestive organs where the exact diagnosis is extremely difficult, and one man might enter a case as being due to a death from ulcer of the stomach, or some such condition, whereas another would diagnose the case as one of cancer. Now, for comparison, we will add together the deaths from the diseases of the digestive organs and deaths from cancer in Auckland and Dunedin:—

	Auckland.	Dunedin.
Cancer	32, with 4 deaths	27 with 11 deaths.
Digestive system	61, with 12 deaths	83 ,, 8 ,,
	93 ,, 16 deaths	110 ,, 19 deaths.
	= 1 death in 5·13 cases.	= 1 death in 5·15 cases.

If Mr. Chapman likes to telegraph to Auckland to the effect that the medical men in Dunedin consider the Auckland practitioners fail to diagnose their cancer cases correctly, he will find that they will put a different interpretation on the value of his statistical calculations. My conclusion as to the usefulness of these statistics, when they are taken to pieces, is that they are practically valueless.

1935. Have you any authority for that?—Yes. Parkes, in his work on hygiene, in chapter 20, says: "The elements of statistical inquiries are individual facts, or so-called numerical units, which having to be put together or classed must have precise, definite, and constant characters. For example, if a number of cases of a certain disease are to be assembled in one group with a definite signification, it is indispensible that each of these cases should be what it purports to be, an unit not only of a definite character, but of the same character as the other units. In other words, an accurate diagnosis of disease is essential, or statistical analysis can only produce error. If the numerical units are not precise and comparable it is better not to use them. A great responsibility rests on those who send in inaccurate statistical tables of disease, for it must be remembered that the statist does not attempt to determine if his units are correct. He simply accepts them, and it is only if the results he brings out are different from prior results that he begins to suspect inaccuracy." In reference to this mortality question, the only part to which I attribute any real importance, or from which any deductions of value can be drawn, is the death proportions to the cases of admission. In the return of the results of operations in the Dunedin Hospital, it will be found, I think, that a large proportion of deaths are entered under the terms of "shock or collapse" following operation. Now to these cases I consider the gravest suspicion attaches, several of them occurring days after an operation—after an interval of reaction and febrile disturbance. Erichsen, in speaking of mortality after amputation, points out how frequent it is for cases to be entered under these heads while the real cause of death will be found due to septic causes. Wherever a death occurs more than twenty-four hours after operation, especially where there has been a rise in temperature, septic influences will probably come into play.

1936. Do you hold any office in connection with the Medical School of the University?—Yes, I am Lecturer on Midwifery and Gynecology.

1937. *Mr. Solomon:*] (To the Chairman:) I understand you wish to ask Dr. Batchelor a question.

The Chairman: I think that was all I wanted to ask you. I did not mean to open up any further matter.

Witness: All I wish to say, before I leave the box, is that I am sorry if I have been rather warm at times; but anybody who feels as strongly on the matter as I do could hardly help feeling stirred up and using warm expressions.

Dr. H. Lindo Ferguson sworn and examined.

1938. *Mr. Solomon.*] What is your name?—Henry Lindo Ferguson.

1939. And your full professional title?—Fellow of the Royal College of Surgeons (Ireland); Licenciate of the King's and Queen's College (Ireland).

1940. You are a registered practitioner in New Zealand also?—Yes.

1941. How long have you been in New Zealand?—Since the latter part of 1883—October, 1883, I think I came here.

1942. And you have been a member of the surgical staff?—I have never been on the staff pure and simple, but I have been specially on the staff for diseases of the eye since December, 1883.

1943. Shortly after your arrival?—Yes, very shortly.

1944. And you have remained in that position until now?—Yes.

1945. You are also, I think, connected with the Medical School at the University?—I am Lecturer on Ophthalmic Surgery.

1946. Now, have you formed, as the result of your experience in the Dunedin Hospital, any opinion as to whether at the present time its sanitary condition is satisfactory or otherwise?—I do not think the sanitary condition of the Hospital has been satisfactory ever since I knew it first.

1947. I think you prepared that report of the staff that was submitted to the Trustees, did you not. It deals with the condition of the Hospital?—Yes, I may say I did prepare that; but perhaps I should explain how it was that it came to be my draft.

1948. Yes, certainly.—According to my recollection the Trustees wrote to the staff before this report was prepared, and asked us to say definitely what faults we found with the building in its then condition; and asked us to also say in what way we considered the building could be improved or modified to make it more satisfactory. We had a meeting of the medical staff, and, as far as I can recollect, there was a deal of talking and but little done; and after the meeting, when it was adjourned—I think on my suggestion—it was resolved that the individual members of the staff should jot down the different improvements which they considered necessary, and that then the matter should be knocked into shape at some subsequent meeting of the staff, and forwarded as a report to the Trustees. I afterwards measured the wards of the Hospital, and went into the question of cubic and superficial space and ventilation, and put down certain notes, which I presented at the subsequent meeting of the staff; and having read this, Dr. Coughtrey proposed that it should be printed in order that the staff should have an opportunity of studying it quietly, and seeing in how far they agreed with my conclusions. At a third meeting my report, which had been merely read before the staff as a sort of skeleton from which to form a basis for discussion, and from which a report was ultimately to be evolved, was in itself adopted as the final report.

1949. *The Chairman.*] The draft was actually adopted as the report?—Yes, the draft is the report you have before you at present. The only alteration is the inclusion of the final paragraph, which I think was Dr. Coughtrey's addition. That was a statement to the effect that on the main conclusions in the concluding paragraphs they were unanimous.

1950. *Mr. Solomon.*] And as to details?—Well, the report was merely handed in to form the basis of a future discussion.

1951. *The Chairman.*] It was sent to the Trustees in printed form?—Dr. Roberts can tell you that; I think it was.

1952. Was it signed by members of the staff?—I fancy that Dr. Coughtrey's addition at the foot—that the report was unanimous—was sufficient. I think it was merely sent in by Dr. Roberts as secretary, and a copy of the minute was sent with it.

1953. *Mr. Solomon.*] Now, in years gone by—say, five or six years—has there been any unanimity among the profession connected with the Hospital, as to the fact of its being satisfactory from a sanitary point of view, or otherwise? Is it only your opinion, or is it the opinion of others as well as yourself? Dr. Batchelor says it is his, Dr. Roberts says it is his, and you say it is yours. Have you heard similar expressions from other members of the staff?—I think that pretty well ever since I have been on the staff there has been a feeling, so far as I am aware, among all members of the staff that the Hospital was not as perfect as it might be.

1954. We have heard, what we did not understand before, that there are differences of opinion occasionally among medical men?—Occasionally, yes.

1955. Now, we will not speak of a perfect hospital. I suppose it would be difficult, however much money was spent, to procure such an hospital that some fastidious member of the profession would not find fault with?—I do not know that it necessarily means a very large sum to build an hospital that would be thoroughly in accord with modern views. I do not know that it costs more to build a sanitary hospital—as far as we can build a sanitary hospital—than it costs to build an insanitary one.

1956. I quite understand you. But I want to go a little further, to get your opinion. You say it has been pretty well agreed for years past among the members of the staff that the Hospital is not as perfect as it might be?—That is so.

1957. At the present time, tell me if, in your opinion—leave out the question of perfection—this Hospital can be considered to be satisfactory, or even fairly satisfactory?—It cannot be considered as either, in my opinion.

1958. *The Chairman.*] Not as it is now?—That is what I mean.

1959. *Mr. Solomon.*] I will not go into details with the imperfections in the Hospital, but will put the question *in globo:* are the defects in the Hospital of such a character that they can, with safety to the patients, be allowed to remain?—I think the risks the patients run are increased by the insanitary condition of the Hospital.

1960. Is that a risk to life?—Yes, it is a risk to life.

1961. What about their length of stay in the Hospital? Is it lessened or increased by the condition of the Hospital?—I am satisfied that my patients are very much longer under treatment than similar cases outside.

1962. And to what do you attribute that?—A good many of them have relapses through exposure to draughts. Sometimes wounds do not heal kindly, in the same way that they do outside.

1963. Why do you say so?—You have already heard that it is impossible to speak with absolute certainty on a thing of that kind, but in several cases I have been driven to attribute it to what in my student days I called "hospitalism."

1964. That is, cases of a hospital not healthy?—That is so.

1965. And, as an illustration, are the risks that a patient runs in this Hospital slight or appreciable, from the defective condition?—I think they are appreciable, though it is a kind of thing one cannot measure. Perhaps to use the word "appreciable" is a contradiction in terms, because they cannot be measured. I think they are material, at any rate.

1966. I was going to use that very word myself?—We might say that the influences of the Hospital are not healthy to a material degree.

1967. Well, generally speaking, knowing this Hospital as it has been during your experience of it, should you expect, *cæteris paribus*, that the death-rate in this Hospital or in the Wellington Hospital, for instance, would be greater?—I should certainly say the death-rate here would be greater, under the circumstances of septic trouble arising.

1968. That is the danger to be feared, is it not?—Yes, that is the great danger.

1969. We have generally heard that the danger from imperfect sanitation is of septic poisoning?—Yes.

1970. Does that apply to medical cases as well as surgical?—The question of septic poisoning?

1971. Yes?—It is possible for a patient to have septicæmia apart altogether from a surgical wound; but septic cases, as a rule, are surgical cases. I have seen cases of septicæmia following inflammatory conditions apart from surgical trouble.

1972. Now, we have this unexplained fact: that during the past two years the death-rate of the Dunedin Hospital is between 9 and 10 per cent.—in one year it was over 10, and the next year over 9 per cent. Taking that fact alone, is New Zealand in general, and Dunedin in particular, healthy or unhealthy?—I should say particularly healthy.

1973. In your opinion, should the death-rate of an hospital bear any ratio to the death-rate of the district—I do not say what, but should it bear a proportion? That is to say, in an unhealthy condition should you expect a larger death-rate or a lesser than in a healthy district?—The healthier the district the lesser would be the death-rate in the district, and in the hospital too. But there are certain local conditions that come in. Suppose there were large ironworks here, where there were severe accidents frequently, or there were slate-quarries, where there were a large number of accidents also, the death-rate of the hospital might be put up by accidents. The ironworks would, of course, affect the death-rate of the population, because the factory element might come in, and the slate-quarries might also have an effect on the death-rate.

1974. But you have had pretty considerable experience of Dunedin and its surroundings for years past, and I suppose you know a deal about the Old Country. Generally speaking, should you expect the rate of mortality in an hospital here—other things being equal—to compare favourably in comparison with the death-rate at Home?—It should compare favourably.

1975. Now, in an hospital of our size, should you say that a death-rate such as I have mentioned—of over 10 per cent. one year and over 9 per cent. another year—was satisfactory, or that it required explanation?—I should first ask what the death-rate outside was. If the death-rate in the hospital was given to me as 10 per cent., and the death-rate was, as I have seen it in Dublin, 5 per cent. per 1,000 of the population, I could not say it was excessive in the hospital.

1976. Well, I will give it to you. The death-rate here—the maximum—is 14 per 1,000?—Yes.

1977. The death-rate in the Hospital during two years is from 9½ to 10½ per cent.?—I should say that was a large death-rate in proportion to the death-rate outside.

1978. *The Chairman.*] Ten per cent. is very great, as against 1½ per cent. outside?—Yes.

1979. *Mr. Solomon.*] I suppose you recognise Dr. Lawson Tait as an authority on this subject?—Yes, he is a well-known authority.

1980. He refers to one case in which the death-rate was 8·17 per cent., and he says that is an eminently unsatisfactory state of affairs?—Do you say the death-rate was 8·17?

1981. Yes; that was at Swansea?—No; I think it was somewhere in the north.

1982. Should the outside conditions there be better than ours?—There are few districts in England in which the death-rate is so low as it is in Otago.

1983. *The Chairman.*] You mean the general rate as compared with the population?—Yes.

1984. *Mr. Solomon.*] At any rate, to say the most of it, those remarks will apply with equal if not greater force to Otago?—As to the death-rate being high in the hospital?

1985. Yes.—Decidedly they would.

1986. Can we say, as a rule, that whatever remarks are made as to the general death-rate at Home would apply certainly with equal force to the death-rate here?—Yes, with increased force, so far as the death-rate out here goes.

1987. By consulting statistics, such as we have, and for which there is no explanation, we find that while the death-rate in the Dunedin Hospital for the last two or three years has been over 9 per cent., and over 10 per cent., the death-rate in Wellington, where there is a new Hospital, is between 6 and 7 per cent.—certainly over 6 per cent. Should you say that the different conditions of the Hospital in Wellington had nothing to do with it?—I should say they probably had a good deal to do with it.

1988. So far as you know, is there anything in the conditions of the different towns in New Zealand which would induce a higher rate of mortality in Dunedin Hospital than in the other large centres?—I have not any prolonged acquaintance with other large centres, but from what I have heard and seen myself, I do not see any reason why the mortality should be less in Christchurch or Wellington than it is in Dunedin. Auckland I have not seen. On the contrary, I should expect a higher mortality in Christchurch than in Dunedin. I do not consider the situation there is so healthy.

1989. Can you give us an opinion from your experience generally—I do not want to ask too much. In such a district as ours, where the district mortality is 1½ per cent., under ordinary circumstances what should you expect to find the Hospital mortality?—That is a question that is difficult for a man not almost a professional statistician to answer. It is a thing that varies very much according to local surroundings. If you take an hospital in the Lakes district, you might have a higher rate of mortality from the accidents in mining, sluicing, &c., with a much less mortality in the population at large, than would really be justified from disease.

1990. But I am speaking of conditions such as you know, in towns where the death-rate is 1½

per cent., and where the conditions here are known to you. Under the circumstances that exist in Dunedin what should you expect—the highest rate one might fairly expect in the Hospital?—I should think 5 per cent. ought to cover it.

1991. We have been told that about one thousand patients pass through the Hospital in the course of a year.—I believe there are that number.

1992. You understand what we mean by the germ theory, of germs existing in the air. We have been told by Dr. Roberts, who is a pathologist and a specialist in this subject, that there are pathogenic germs in the air, from which septic poisoning arises?—Yes, that is an acknowledged theory.

1993. What do you say as to the risk of infection from the greater or lesser concentration in which they are found?—The risk increases enormously with the greater concentration. With sufficient dilution they become practically innoxious.

1994. For instance, they are here?—Heaps of them, I should think, by the smell.

1995. In a surgical ward of the Hospital, where there are mixed cases, is there a greater or lesser chance of the presence of these germs in the atmosphere found in the ordinary room?—There is undoubtedly greater prospect.

1996. Does the presence of such cases as burns or suppurating wounds have any effect on these germs of the atmosphere?—If there were suppurating wounds in the ward the germs would be bound to be there.

1997. In more than usual number?—Yes.

1998. So that the mere presence of these conditions of itself concentrates the germs in that atmosphere beyond what is usual?—Yes, beyond what is usual.

1999. Does a proper system of ventilation in such a place as that have any direct effect on the concentration of these germs?—A proper system would dilute the germs and carry them away, so that they would not hang about the particular beds in which they were generated.

2000. And does the want of such a proper system of ventilation increase the risk of infection arising from the presence of these germs in a surgical ward?—Undoubtedly it does.

2001. Now, take our own wards. The surgical wards of our own Hospital at the present time have general surgical cases in them, and also special cases—gynecological and ophthalmic. Do these cases run any special risk of septic poisoning, in your opinion?—So far as gynecological cases are concerned, that is hardly a question you should ask me. It has been answered by Dr. Batchelor, who is specially acquainted with the subject, and by Dr. Roberts, who also is specially acquainted with it. I would rather not express my opinion. I should say, from my surgical training, that the risk was greater; but I am not expressing a specialist's opinion. So far as ophthalmic cases go, the conditions found in dealing with the eye are very different from those of a leg operation, inasmuch as you seal up the limb, but you cannot seal up an eye altogether, so as to isolate it from surrounding circumstances in the ward. The tear duct forms a means of communication between the nose and the eye, and for that reason ophthalmic cases are certainly running a much greater risk after operation in being treated in surgical cases than in being treated in separate wards.

2002. In Dunedin Hospital there is no special ward for such cases?—Not for male ophthalmic cases, but there is for female. Some years ago the Trustees gave me the front tower ward. It is very unsuitable in many ways, but I did not look a gift horse in the mouth and was glad to take it, although it is not the best that might be got.

2003. Do you think that the males' chances of recovery are seriously militated against on account of the absence of provision for isolation?—I think I may say they are seriously impaired. Not necessarily that every case gets septic infection, but inasmuch as I am unable to modulate the light in the ward; and therefore my patients after operation have to stand the glare of a large ward and therefore are liable to suffer either from having their eyes bandaged too long, or from too much glare; and they also suffer from draughts in the wards. If there were separate wards these matters should be regulated, but in a common ward it is impossible to avoid them.

2004. We will subdivide that danger. Let us take, in the meantime, the question of septic danger. Are the sanitary conditions of the general surgical wards in the Dunedin Hospital of such a character as to seriously increase the danger of septic poisoning arising to special subjects being treated in these general wards?—I do not follow your question.

2005. To make it clear: You have told us there is a danger of septic poisoning to such cases as yours being treated in general wards?—Yes.

2006. That in these wards one might expect the presence of these germs?—Yes; in a ward where you have septic organisms you will have a certain number of losses of eyes after operation from septic trouble.

2007. Is extreme care in ventilation more necessary in such cases as that than under ordinary circumstances?—I think it is necessary in all circumstances.

2008. But where you have to treat cases such as yours and Dr. Batchelor's in general surgical wards, should more or less care be devoted to the sanitary condition?—I think you should exercise more; but under any circumstances you should exercise the greatest care.

2009. But you do not quite appreciate what I say. You say a special ward is necessary. Now, supposing we cannot get one, and that you are forced to treat your ophthalmic cases in these general wards, and suppose extreme or proper care was given to ventilation, do you think the dangers they run would be minimised?—Yes, they would be lessened.

2010. *The Chairman.*] Lessened by what?—Proper ventilation.

2011. *Mr. Solomon.*] What I am trying to impress upon you gentlemen, by means of this question, is the necessity of special care being taken in ventilation in connection with the special cases having to be treated in the mixed wards. Now, do you think, Dr. Ferguson, that under existing circumstances you can operate with confidence in the Dunedin Hospital? I am not going beyond your own cases?—I cannot operate with the same confidence that I can outside.

2012. What do you fear?—Well, since there has been erysipelas in the house I have been very much afraid of septic infection.

2013. Yes. While on that subject of erysipelas we will thresh it out. Do you agree that erysipelas is a septic disease?—Yes.

2014. Do you agree with Erichsen that the frequency of erysipelas arising in an hospital is a symptom of neglect of its sanitary condition?—I should say on the face of it that it was so, but I am not an authority on matters of that kind.

2015. And should erysipelas arise in an hospital—I do not mean to be brought in, but that it should arise—if an hospital is in a proper sanitary condition?—It certainly ought not to do so.

2016. If an hospital is not in a proper sanitary condition, is it surprising that erysipelas should arise?—No, it is not.

2017. Have you found it arising in the Dunedin Hospital?—I have known of its existence there, but I cannot at this moment recollect a patient of my own that had it. I have frequently had to postpone operations in consequence of erysipelas in the house; on several occasions I have had to do that.

2018. Can you tell us whether it has been more or less frequent recently or formerly?—I do not think we have had an epidemic in the house like this last one before. I do not recollect it. I should say there have been more cases lately.

2019. *The Chairman.*] Can you define the time of that epidemic?—I think it was about the time of the case of Mrs. S——; within the last two months there has been more cases of erysipelas in the Hospital than formerly, but I do not see the cases in the wards as other members of the staff do. That is my impression with reference to the state of affairs.

2020. *Mr. Solomon.*] Now, I gather from what you say, that in a hospital the circumstances are specially favourable to the presence of septic organisms in the atmosphere?—Yes, they are.

2021. In a healthy hospital they should be specially unfavourable?—Yes; the conditions should be such as to minimise the risk of septic organisms being present.

2022. Do you know of any disease, in your experience as a medical man, which would not be intensified by these septic conditions in an hospital? I do not mean to say to an enormous extent?—I think that existence in bad hygienic surroundings would depress the health of the most robust individual, and any person already suffering from disease would naturally have his condition more depressed by it.

2023. It would affect the power of resistance to the attacks of disease?—Yes.

2024. Now, what do you think of this: You have told us that the Hospital is specially apt to encourage the presence of septic organisms in the air. Is it possible or impossible that the walls, ceilings, and floors should become impregnated with these germs during the course of years?—I think there is no doubt about that taking place. I may say the Trustees have taken down the plaster and used parian cement in some of the wards—I do not know how many; it is in the surgical wards,—for the purpose of minimising the risk of septic absorbtion; but I do not think the ceilings have been treated in that way, and the floor in one ward is rough and almost certainly has absorbed an enormous quantity of germs since the Hospital was built.

2025. Can you say if the risk to patients arising from the special circumstances of the Dunedin Hospital are increased or decreased year by year?—I think the risk to all surgical cases increases as the Hospital gets older.

2026. Would that apply ordinarily or specially to a case where the ventilation is defective?—It would apply with more than usual force where the ventilation was bad.

2027. *The Chairman.*] In any case you hold that the danger would increase year by year, but with greater rapidity under the circumstances of the Dunedin Hospital?—Yes.

2028. *Mr. Solomon.*] Now, according to authorities, what is the ordinary lifetime of a hospital?—It is a question I have not looked up, but, speaking from memory, I think the authorities say that about twelve or fourteen years is the proper lifetime of a hospital. Some authorities recommend that no hospital should be built as a solid structure at all, but should be just a temporary erection for a few years and then be swept away.

2029. Our Hospital has been in existence twenty-four years last Tuesday. Under the circumstances you have known to exist for the last seven years, should you expect to find evils intensified after that length of time?—I should expect to find that the wards were not as safe for operating in after an additional seven years' life. That is, wards with absorbent walls and rough floors.

2030. Then, do you agree that these rough floors and absorbent walls are defects in the structural condition?—Yes, they are.

2031. Another thing Dr. Batchelor complains of is the insufficient space per bed. What do you say as to the crowding of the Hospital? Do you think the beds are too close, or not too close, or what?—I think when I came here—speaking from impression merely—the beds must have been closer than they are now, because I was very much struck with the crowding of the beds when I came here first. I believe that since the report you hold in your hand went in, one bed has been taken out of the male surgical wards, reducing the number to sixteen instead of seventeen. On recollection, I believe there are now sixteen beds upstairs and fifteen downstairs.

2032. I will speak of the space per bed, not the square space. Do the risks of infection bear any ratio to the distance patients are from one another?—Undoubtedly. I think I am right in saying that the intensity of contagion is lessened inversely as the cube of the distance.

2033. As the cube, or the square?—I think it is the cube, but I may be wrong, as I am speaking only from memory.

2034. So at any rate it bears a direct proportion?—Yes.

2035. I find by the authorities that they are agreed that in ordinary surgical cases the bed-space should be 7ft. 6in. per bed, and in surgical cases that it should be from 8ft. to 9ft.; while in

the Dunedin Hospital it is 5ft. 6in. Is that a proper state of affairs?—I think the distance in the Hospital is too little, and I have always thought that the beds were too close together.

2036. I suppose the present state of affairs is unfavourable?—Yes, in those wards; unless the number of beds were lessened, and that would interfere with economical nursing.

2037. So that we are driven to what Dr. Batchelor says—that the size of the ward is too small for economical management?—Yes.

2038. And the same remarks apply to the square bed-space and the cubic air-space?—They do, but of course if you fix the bed-space, the lineal space per bed, the superficial space, and cubic space practically go with it.

2039. Quite so.—One carries the other with it.

2040. Is it more or less necessary where the ventilation is defective to be particular about your patients not being crowded?—If the ventilation is defective, they should have more cubic space and more superficial space.

2041. In the Dunedin Hospital, is it important that the patients should not be too close together?—Certainly I think so.

2042. Now, on the question of ventilation, we have been told that ventilation in the Dunedin Hospital is quite adventitious, that there is no proper system. Is that so?—There is no definite system of ventilation. In some wards there are openings in the walls, and in the upstairs wards there are tubes passing through the roof, but there is nothing that we can call a proper system of ventilation in the Hospital attempted at all.

2043. Is that proper?—No.

2044. Do you agree that cross-ventilation is a proper system?—I agree that it is the healthiest.

2045. We have been told by several people that the principal method of ventilating these wards is by means of chimneys and windows. Is that so?—Yes, that is so, except for those openings in the walls.

2046. In other words, you have to open the windows to ventilate the wards: that is what it means, in plain English?—You really cannot ventilate them at all in the true sense of the word "ventilation." By opening the windows and doors you get a draught of air, but it is not ventilation.

2047. Have you ever noticed the wards smelling stuffy?—Yes, frequently.

2048. Supposing you do not open the windows, can you ventilate the wards?—Well, of course I am not much about the place when the windows are closed, but I have been there late in the evening, say, at 7 or 7.30. When the windows are closed the wards are stuffy, and the inference I draw is that when the windows are closed the atmosphere is vitiated.

2049. Is it practicable in our climate in winter time to keep the windows open to ventilate?—Not with safety to the patients.

2050. What is the result?—It almost blows the patients out of the beds.

2051. In fact, what happens is this: if you open the windows you have what is called pyæmia, and if you shut them up you get what is called septicæmia?—That is about it.

2052. Now, are the draughts of a trifling or a serious nature when the windows are open?—Well, I have never been there in the capacity of a patient, and therefore I do not know exactly what the sensations of the patients are; but I do know that my patients frequently complain very bitterly at times about the draughts.

2053. In your cases, for instance, is there any danger to the patients from draughts?—Yes; there are very considerable risks of inflammation after operation on the eye, from exposure to cold draughts, and in such a case as eyeretis one is apt to have a relapse from exposure to cold.

2054. *The Chairman.*] You have had cases of relapse and of injury arising from draughts?—Yes, I have had such cases—in fact, Mr. Solomon, in his opening address, said he had seen a red blanket-tent in one of the wards. That was for the purpose of protecting one of my patients from the draught. The man had sympathetic eyeretis, and was therefore protected in the corner.

2055. *Mr. Solomon.*] Do you mean to say it was necessary to protect a patient in a ward of the Hospital by putting a red-blanket screen around him?—I often have to do that, when treating them in a general ward, to protect them both from light and draught.

2056. Under the circumstances you saw the patient on that occasion, do you think the conditions were favourable for his recovery?—No, because he had no cubic-space, and absolutely no ventilation; but it was done because he was deriving injury from the cold winds in the ward.

2057. Without the screen he was deriving injury from the cold winds, and with the screen he was deriving injury from the want of air?—Certainly, it was not improving his condition—that is, the want of ventilation.

2058. Dr. Batchelor has told us that in his cases it is impossible for a man to say positively what causes peritonitis or emetritis in his patients, and that one can only judge gradually from a succession of cases. Does that apply to you?—I think it applies to any surgical case. I think we cannot speak definitely of septic infection unless the septic is examined by a laboratory bacteriologist, and is identified afterwards as a microbe and proved microscopically. It is impossible to have a certainty about anything of the sort.

2059. You can only form an opinion from a succession of events?—Yes.

2060. What has your actual experience in the Hospital taught you as to the danger of septic poisoning?—I have had cases in the Dunedin Hospital which have gone wrong from septic conditions arising, in which I have not been able to trace the source of septic infection to anything outside the Hospital.

2061. Now, you pointed out to me three actual cases that occurred to you in one week, or in three successive days, did you not?—Yes, I remember those cases. I am afraid I cannot give very full details about them, because I did not expect to be examined about them.

2062. Will you tell us your experience of them as far as you can?—I think the dates were the 26th, 27th, and 28th September, but I am not certain.

2063. How many cases had you inside, and how many outside?—The one on the 26th was inside, the 28th was inside, and on the 27th I did a very difficult and troublesome operation for thick capsule after cataract. Both the hospital operations were simple, but the eyes were lost from septic trouble; while the eye I operated on on the intermediate day outside, with the same instruments, did well.

2064. *The Chairman.*] They were not fatal cases?—No; the eyes were lost.

2065. Were the operations inside simple?—Yes, and much shorter than the one outside. I have had two cataract cases I lost in the Hospital at different times with septic trouble, which were both rather striking ones.

2066. What was the date of them?—I had a woman (Mrs. D——) on whom I operated in 1884. I operated on her left eye with a very good result, and subsequently on the right eye. It was left with pan ophthalmetis, and it was attributable to erysipelas at that time in the Hospital. Then, in 1885, I had a Chinaman named Ah Lie, on whom I operated, first on the left eye, which did exceedingly well, and then on the right eye, which, however, was lost from septic trouble. That is one of the cases I referred to earlier, when I said I had cases which I could explain only by using the word "hospitalism."

2067. *Mr. Solomon.*] Were those cases in which septic difficulties followed surprising, if you assumed a healthy condition of the Hospital?—If the Hospital were healthy I should be much puzzled to explain them.

2068. Are they very surprising in the condition in which you know the Hospital to be?—No; I think one is bound to look for septic troubles in the present conditions of sanitation.

2069. *The Chairman.*] At present you are on the outlook for septic troubles?—At present I feel uneasy about septic troubles in the Hospital.

2070. *Mr. Solomon.*] In your opinion, can the present condition of the Dunedin Hospital fail to exercise an unhealthy influence upon operations such as you have to perform?—I think it is bound to exercise an influence on the operations, if only they are the cause of the depression of the patient's general condition.

2071. Now, Dr. Batchelor has said that in his case there arose frequent occasions on which he had to exercise a discretion as to whether it was wise to operate or not. Do you exercise a similar discretion?—Frequently.

2072. In which it is a matter of doubt?—Yes; there are frequently operations of expediency.

2073. In the present condition of the Hospital can you exercise fair discretion, or does the condition of the Hospital introduce an element that should not exist?—I think the present condition of the Hospital introduces an element of risk that one cannot disregard in weighing the chances of an operation.

2074. I do not know if your experience is the same in another direction: Dr. Batchelor also said he feels himself not justified in using all modern curative methods in consequence of danger from septic poisoning. Does that apply to you or not? For instance, he illustrated the process of electrolysis, which he says is very valuable, but involves a considerable amount of risk in the condition of the Hospital. Is there anything similar in your practice?—I cannot give you any particular operation which I refused altogether to do in consequence of the condition of the Hospital, but, if it is a question of expediency, I have for a considerable time been inclined to put off operations in the Hospital and avoid them if I could.

2075. Has that been the result of your own experience, or the result of what Dr. Batchelor thinks?—I think it began with my own experience in those cases I have referred to, and I think probably the feeling was intensified from Dr. Batchelor's septic cases and what I began to hear about other people having septic trouble in the Hospital, as well as what I saw myself. It was further increased when I went to measure the walls, when I prepared that report. It was then I saw the real state of affairs.

5076. Do you think that the defects the staff have referred to in this report can with safety be allowed to remain as they are?—I do not think they can with safety be allowed to remain.

Mr Solomon: I do not propose to go over the report.

The Chairman: We had better acknowledge it.

2077. *Mr. Solomon.*] Do you agree with the terms, or with its contents?—There is only one thing, and that is covered by the explanation I made. This is, as I stated, a draft laid before the medical staff—a sort of skeleton on which to build up a report—but the draft was drawn in answer to a request from the Trustees as to what faults we found in the Hospital, and as to how they should be remedied. It was not put forward as a scheme for making the Hospital perfect, and I do not consider that the adoption of a scheme of that kind would be near so good as the pavilion system of building.

2078. *The Chairman.*] Your own personal view is not entirely in accord with that report?—No; it was a compromise, and was suggested as the basis of a plan to make the present building more suitable. It was really prepared in consequence of the shortness of funds.

2079. *Mr. Solomon.*] That involves two questions. The defects you point out in that report, you have already stated, call for immediate remedy?—They do.

2080. Another question arising from that is: do you think the present building can be patched up and made satisfactory, or do you require a new Hospital?—I think it would be very much better if we had a new Hospital; no doubt about that.

2081. Do you think this Hospital could be made sufficient for all ordinary requirements, if there was a radical change in the ventilation, and so on? For instance, could you get cross-ventilation?—You could not with all the wards ventilating into one central hall.

2082. Into the main hall?—Yes.

2083. Suppose the waterclosets were moved into the corridors, and the baths and lavatories and so on also removed, suppose the wards were not so crowded, that there were special wards made for ophthalmic and gynecological cases and others: do you think then that you could get a fairly satisfactory hospital, without building a new one?—Can any one of these wards be utilised; that is what your question comes to?

2083A. Yes.—I think some of them could be used for medical purposes if they were half reconstructed, floors put down, and the closets thrown out; but they would not be so good as the wards lighted from both sides, and with cross-ventilation.

2084. It would be expensive to patch up this place as you suggest?—It would, and in the end it might be better and cheaper to build a new hospital than to start patching-up. I think in the report of the meeting of the staff there is a resolution passed, on my motion, that all additions should be on the pavilion sytsem.

2085. Now, do you know that there are defects in the Hospital?—Yes, I do.

2086. Do you agree that those defects are of so serious a character as to be a source of grave danger to the inmates, and call for immediate remedy?—Yes, I think I may say that.

2087. *Mr. Chapman.*] Dr. Batchelor considered that both motion and amendment were premature, and then he walked out of the room. Was that so; or, rather, may we say that Dr. Batchelor did not agree with the motion?—I really forget.

2088. Now, as to the subject of statistics. You think that the death-rate, as shown by the statistics given to you for the last two years, is far too high, looking at the healthy climate we have in Dunedin: that is, I understood, the effect of your evidence. Mr. Soloman put it to you that if the death-rate was 10 per cent. one year, and 9 per cent. another year, and if it was a fact that there was a maximum of 14 per cent. among the outside population, you would say the death-rate was too high?—Yes, comparing it with hospitals at Home.

2089. Have you examined the death-rates generally in colonial hospitals, and compared them in the same way, first as to the city population, and then with similar death-rates at Home?—I think I started by saying that I did not pretend to be a statistician. I have seen the figures of the four centres, and I believe that our city death-rate is lower than the other provinces, yet our death-rate in the Hospital is higher than theirs.

2090. Have you examined the last two years?—I believe so.

2091. And you take Wellington to be something over 6 per. cent.?—Yes.

2092. Supposing I go back for two other years. I have before me 1885 and 1886, and I will suggest these figures to you for 1885: Auckland, 11·5 per cent.; Wellington, 10·6; Christchurch, 11; Dunedin, 9·5?—I should say they are all too high.

2093. Take 1886.—Auckland, 10·5; Wellington, 10; Christchurch, 9·4; Dunedin, 9·7.

2094. *Mr. Solomon.*] When was the new hospital in Wellington built?—I was going to ask that.

Mr. Chapman: I do not know. I may say that in taking these figures, the percentages were not worked out, but I worked them out myself.

The Chairman: I see from a report I have that the Hospital was open in 1887, but I have nothing earlier.

Mr. Chapman: Is the 1887 report under the new conditions in Wellington.

The Chairman: Yes.

Mr. Solomon: It was opened at the end of 1886, I think.

The Chairman: I have not the reports previous to 1887.

2095. *Mr. Chapman.*] Now, you say they were all too high?—Yes, unless the general death-rate was very much higher than I know it.

2096. You may take it there is not much difference in the four centres. New Zealand is a healthy country all through. There is not much difference, but probably you will find Dunedin is the healthiest. Have you examined the death-rates in the other colonies?—No; I have not gone into the question of statistics at all.

2097. Well, then, you made these comparisons without very much reliance on them, inasmuch as you had not all the data before you?—I made my statements from the data placed before me. I do not pretend to be an authority.

2098. When I read these figures to you you do not see much difference between those other hospitals and this one?—I do not want to say that you are laying a trap for me, but if you have manufactured your statistics you can do anything with them.

2099. I have done nothing of the sort. It will come on my own head if I am putting the figures wrongly to you.—If the death-rates were as high as you have mentioned, and the outside death-rate was not abnormally high, and no epidemic to account for it, I should think the death-rate was too high at all the hospitals in the large centres. To come at it in this way: I do not think the death-rate in hospitals here ought to be higher than it is in hospitals at Home, where the general mortality is double.

2100. That is, assuming the same class of cases to be admitted?—But we have a better class of cases here.

2101. What do you call a better class?—They are better fed, not exposed to the same depressing influences before they come in, lead a healthy life, and the great majority of them are perfectly free from disease before the attack that brought them in. In the Old Country, in many places, you have a large number of patients who are mill-operators, and miserable specimens of humanity who spend their whole life over a spinning-jenny, and are the outcome of several generations of the same type.

2102. But do you not know that in the Old Country there is a more careful expunging of chronic cases, leaving them to the poor-houses?—You undoubtedly have that.

2103. Should you be surprised to find the death-rate in the Dunedin Hospital and other

hospitals has been increased by getting rid of the chronic cases? You see what I mean, chronic cases are prolonged cases?—Of course, if you have a patient in the Hospital for twelve years, and he dies at the end of that time, he lowers the death-rate.

2104. If you have a large number of chronic cases living in a hospital as boarders, would you not expect a low death-rate; and if you have a very sharp supply of accidents and surgical cases, would you not, on the other hand, expect a high death-rate?—It all depends, of course, on the nature of the two classes you mention, because deaths might not occur in either class; but, looking at the questions broadly, I think I am justified in saying yes to your questions.

2105. Now, can you tell me what accounts for the high death-rate in Victoria?—I have never been there.

2106. Can you tell what there is to account for the high rate of death at St. Thomas's? It is a very large hospital?—And a very good one. Dr. Batchelor has said that the cases are picked in the London hospitals, but he did not refer to the fact that the large London hospitals draw bad cases from all over the country; cases of cancer, internal tumours, and other serious cases of that kind come up to the metropolitan hospitals.

2107. Do you have cases here drawn from other parts of the colony?—Yes.

2108. Severe cases?—I cannot speak about that. Dr. Batchelor and the surgeons will tell you more about it. Some of my own cases come from other parts of the colony, but they do not swell the death-rate, I am glad to say.

2109. Then you have not made a study of statistics?—No.

2110. You have said you cannot operate in the Hospital with the same confidence as outside. Can you say our Hospital is different in that respect from other hospitals in New Zealand?—I have never operated in other hospitals.

2111. You have formed your conclusions from Dunedin only?—Certainly; I only spoke of Dunedin.

2112. You have spoken of erysipelas in Dunedin. Have you known it to arise in Dunedin before this occasion?—Oh, yes; since I went on the staff I have had to put off operations on several occasions, knowing there was erysipelas in the house.

2113. And you would put them off whether it arose in the Hospital or was introduced?—Undoubtedly.

2114. Do you think the Dunedin Hospital authorities ought to refuse erysipelas cases?—I think if such cases come in they should be put where they would not be an object of danger to the house.

2115. They cannot refuse them?—They should put them into a ward at the back.

2116. When you speak of putting-off operations, do you mean operations in the ward in which you operate?—I lost one patient's eye through erysipelas in the ward, and I have been shy about the presence of erysipelas ever since.

2117. Have you operated with erysipelas in the ward?—No, I moved the patient out, and I think she was three days out. I moved her from No. 8 to No. 7.

2118. Erysipelas arises in a good many hospitals, does it not?—Yes; when it broke out in the hospital to which I was attached as a student, the Board of Governors took it as an indication that the hospital was not sanitary, and built a new one.

2119. But they had plenty of money, I suppose?—No, they had not.

2120. What hospital was that?—The Adelaide Hospital, in Dublin. They built new surgical wards completely.

2121. What do you consider is the life of an hospital?—Some of the good authorities—I believe Hammond—puts down twelve years as the lifetime.

2122. He thinks that at the end of that time the walls and floors become saturated, and he means it should be burnt down?—The assumption is that the walls have absorbed so much septic material that they are dangerous.

2123. And what do then—destroy the walls?—Yes.

2124. Do they do such things in England, systematically?—All military hospitals are now built on temporary principles.

2125. St. Thomas's is not temporary; it cost a quarter of a million.—It was a great question whether the money could not have been spent wiser.

2126. Can you tell me where that has been done, except in the case of military hospitals?—I fancy that in all recent hospitals in England the foundations only are permanent, and that the wards are not looked on at all as permanent. Of course, I am speaking of my reading on this subject, and not of my general knowledge.

2127. Now, as to the precautions taken by the Trustees: you know a ward is kept empty?—Yes; I believe two wards have been kept empty lately.

2128. *The Chairman.*] Since when?—I believe within the last twelve or eighteen months, but Dr. Copland tells me it is two years.

2129. *Mr. Chapman.*] And before that there was one?—Yes.

2130. Under existing circumstances, do you approve of that?—Under the conditions that exist in the Hospital, the matter of keeping one ward empty, and moving the ward round in turns to give them a chance of being disinfected, is very good; but the matter of keeping two wards empty makes the others crowded, and is a bad one. Again and again I have been unable to get patients into Hospital on account of want of beds when there were two wards empty in the Hospital. I believe that was done with a view to economy in the nursing.

2131. Have you made complaint on the subject? You have been connected with the Hospital for about seven years?—Well, the Trustees do not receive complaints from individual members of the staff very gracefully. I have spoken to individual members of the Board of Trustees about the matter, from time to time, but have never made complaints in the way Dr. Batchelor has.

2132. Have you ever expressed the opinion that you considered the Hospital insanitary?—I did not realise how insanitary the Hospital was until I went to the work of drafting that memorandum, that was adopted as a report by the staff.

2133. Have you expressed yourself to that effect, that it is insanitary?—I think that report, which was well-known to be my draft, was a very strong expression.

2134. Prior to that you had not?—Prior to that I had always supported resolutions passed by the staff. I spoke at the meeting with the Trustees before the operating-theatre was built, as to the necessity for an operating-room. The question of sanitation was also raised, but I did not speak on it.

2135. Did you complain of other matters such as draughts?—There was no use making complaints when the Trustees had done their best for me in the matter. I asked for a special ward for eye cases, and they gave me the only one they could give me—the front tower ward. It is very unsuitable for the purpose, but it was better than nothing. There is a terrible draught there, and the ward is anything but a desirable one. It is better to operate, there, however, than to run the risk of operating in a general surgical ward. I have endeavoured to be reasonable in the matter, and have not asked the Trustees for things I knew they could not give me.

2136. And you have not spoken to the Board, have you?—I have spoken to individual members, and I spoke to Mr. Houghton when he was chairman.

2137. Now, as to the cases you mention. Have you had septic cases in your outside practice?—Until those two eyeredectomics in the Hospital in 1884 I had never seen an eye lost by eyeredectomy, and I have never seen it since then.

3138. But have you seen appearances?—I have never seen them, that I recollect, with the exception of those two cases, but I am certain that in my private practice I never had a trace of it.

2139. Would it not have been a matter of some importance to have sent in a written report to the Trustees making statements such as you make here?—Well, as a matter of fact, possibly I did not act energetically enough in the matter. I made no row about it, as Dr. Roberts can tell you. He was house surgeon, and we endeavoured to trace septic trouble to its source. Certainly the thing was not glossed over.

2140. You did not report to the Trustees?—Not as a body.

2141. Did you report it in the memorandum to the medical staff?—It has been before the medical staff, but I have never written a memorandum about it.

2142. Was it ever brought formally before them?—It was brought prominently before them of one individual whose case was supposed to have affected me. In conversation it has been brought before the whole as a body.

2143. When?—The matter was brought up at the dispute as to the condition of the Hospital last year.

2144. But that would be after a lapse of four years in the one case and five in the other?—I might put it in this way: The members of the staff—most of them, if not all—were cognisant that I had these cases.

2145. But it was never brought before the medical staff in a formal manner, so that it might be communicated to the Trustees?—There were reasons why it should not.

2146. You may give them, if you like?—In one case, where a man lost his eye from septic trouble, after eyeredectomy, he was anxious to take proceedings.

2147. *The Chairman.*] Against whom?—He spoke about a number against whom he might proceed. He was a man who lost his eye because he had been next a septic case in ward No. 1, but I thought it would be better for the Hospital and all concerned to leave it alone.

2148. Was there any minute made in the minute-book of the staff at the time?—I do not think there was. I have not seen the minute-book of the staff.

2149. *Mr. Chapman.*] My question was wider. Was it before the staff as a body?—It has not been.

2150. You have said you have been inclined to put off operations because of the condition of affairs. Have you ever actually abstained from operating because of the condition of the Hospital?—I have done more than that. I have operated outside rather than inside. I had a patient who came to me from Wellington about three weeks ago, and there was at that time a case of erysipelas in the childrens' ward—in which she was placed—or, at all events, there had been erysipelas or septic trouble there a day or two before. The child had only one useful eye, a very bad one, or at any rate, there was only one eye that might be saved, and I had to resort to eyeredectomy to save the eye. I did that outside, and on the second day the child came to my study without any help. In ten days the child went back to Wellington. I do not think I could have got those results in the Hospital. I believe that if the child had been taken in she would not have been convalescent now.

2151. Then, in this month, is that the only one you refer to of that character? Is that the only one?—I have frequently to do small operations. I am going to do one on Tuesday next which I refused to take into the Hospital.

2152. But earlier than this: say, prior to this year? Have you actually abstained from operating in any case by reason of the septic condition of the Hospital?—I think that the uneasy feeling I had about the Hospital has for many months influenced me in deciding whether I should operate or not.

2153. That is not an answer to my question?—It is a distinct answer, that in doubtful cases I do not operate.

2154. Leave aside recent troubles and go back prior to this year. Have you actually abstained from operating on any of your Hospital patients by reason of a fear arising out of the insanitary conditions?—When you put it in that way, it comes to be a question whether I can recall cases.

2155. I do not expect you to draw on your imagination, but on your memory?—Well, I say

distinctly I have cases at present which would have been operated on twelve months ago if I had had no fear of operating in the Hospital.

2156. Cases in the Hospital?—Cases which I see there from time to time.

2157. When did you form these fears?—As I say, I did not know until I went to measure the Hospital what the real condition of matters really was—that is, when I found out the state of the ventilation.

2158. Then your opinion was formed from measuring the Hospital?—To a very great extent, and also from going into the question of ventilation.

2159. Then, in expediency cases, you have not thought yourself justified in operating?—Not as a question of pure expediency. I have always avoided it for a long time.

2160. Where you could postpone an operation, you did postpone it?—Yes, in the present state of affairs.

2161. This condition of mind has forced itself on you, and I understand you have not communicated it either direct to the Trustees or officially to the medical staff?—Do you mean ——

2162. I am only repeating the question I put before. I have your answer, and therefore I shall not trouble you further with it.

2163. *Mr. Solomon.*] Mr. Chapman says that in operations of pure expediency you have not operated in consequence of the insanitary condition of the Hospital. Is that so?—Yes; I think I may fairly say that a feeling of hesitation and uncertainty has been growing up in my mind about the results of operations there which has prevented me from operating in cases where I could possibly avoid doing so.

2164. Is that fair treatment to the patients?—No, I think not.

2165. In these cases of expediency, although it is not absolutely necessary to the sight, it would give great relief to the patient?—It depends; if a patient has perfect sight in one eye and defective sight in the other, but by operation I could improve the sight in the defective one, I might operate; but if the sight will not be improved to such an extent as to compare with the good one I might not operate. If it is a case in which his sight will only come in useful in emergencies, then it becomes to a great extent an operation of expediency, and in cases of that kind I hesitate about operating.

2166. Are these cases of emergency you speak of cases in which although the operation is not necessary it is desirable?—Certainly.

2167. And in these cases, although it is your opinion it is desirable, you have not thought proper to operate?—Yes. There was a case from Wanganui, three months ago, in which I certainly thought it was advisable to hesitate. It was a long time before I decided; but I finally decided not to operate, and he went back. I hesitated because of the risk I thought to exist in the Hospital.

2168. So in that case, at any rate, you did not operate, although you thought it was your duty to do so?—I did not operate, but I certainly thought I should have operated.

Dr. Roberts recalled.

2169. *Mr. Solomon.*] Do you agree that there are defects in the sanitary condition of the Dunedin Hospital?—Yes.

2170. Do you agree that these cases are of so serious a character as to be a source of grave danger to the inmates, and call for immediate remedy?—Yes.

2171. In your opinion, could a surgeon, in the present condition of the Hospital, operate on his patients with confidence, in such cases as abdominal operations, for instance?—I should say no; not with entire confidence in critical surgical cases.

2172. In a case in which there is fear of septic poisoning?—Yes.

2173. Is that a proper state of affairs?—No, it should not be.

2174. Both Dr. Batchelor and Dr. Lindo Ferguson have said that cases arise in the experience of surgeons where it is a matter of discretion as to whether it is advisable to perform an operation or not. I suppose there can be no doubt about that?—No, no doubt about it.

2175. In your opinion, in such a case as that, in the present condition of the Hospital, would the patient get the benefit of a fair exercise of discretion, or would the insanitary condition of the Hospital have an effect on the surgeon in deciding?—It would have an effect in deciding, and would weigh the scale down not to operate.

2176. And supposing an hospital was as perfect as one could fairly expect in a town, ought a surgeon to be hampered by such a consideration?—No; he should be freed from it.

2177. *Mr. Chapman.*] How long have you held that opinion?—Well, I suppose if it had been put to me at any time I would have said that.

2178. That a surgeon could not with confidence operate in Dunedin Hospital on critical cases?—I beg pardon.

2179. Very critical cases I mean, of course. Abdominal cases are all serious cases, are they not?—Yes. I could not say how long I have held the opinion as to the state of the Hospital.

2180. Well, I should like very much if you could say approximately, one, two, or ten years?—Well, roughly, I should say about five years. Of course, I do not attach much value to that reply.

2181. No, I do not want you to pin yourself to that?—No; it is five, certainly.

2182. Is that because the condition was better prior to these five years, or because your opinion was not developed?—I should say it was because my opinion was not developed. It has been brought home to me by degrees.

2183. The Dunedin Hospital is not a proper place in which to perform abdominal sections?—No; there is a very considerable risk about it.

2184. You knew that during those five years those operations have been going on?—Yes; certainly.

2185. And that they have become a feature of the Hospital, and were a very large feature in the Hospital during those five years?—Yes.

2186. And that there is an increasing number of such cases?—Yes.

2187. And you say improperly so?—I do not say improperly so.

2188. What do you say?—I say that the risks are greater than they should be.

2189. Would you say very much greater or just a little greater?—I should say they interfere with the cases a good deal.

2190. Do you confine that observation to the Dunedin Hospital, or is it so in other hospitals?—It applies more or less to any hospital.

2191. That is merely another way of expressing your opinion that there are pathogenic germs in the atmosphere?—Quite so.

2192. Do you say that with special reference to our Hospital?—My experience of New Zealand is entirely confined to this Hospital.

2193. Then for the last five years you have held the opinion that the Dunedin Hospital was in an unsatisfactory condition?—Yes.

2194. In what way have you expressed that opinion? You were House Surgeon, and subsequently a member of the staff. When and under what circumstances have you officially expressed that opinion?—At those meetings of the staff at which we discussed the sanitary condition of the Hospital I have expressed that opinion. I think it is in print.

2195. When were these meetings?—Last year there was one.

2196. But not earlier?—I do not think I had any occasion to express them in 1888. I have only been two years on the staff. I left the house-surgeonship in 1887.

2197. Then, if the Hospital is an unsafe place in which to perform these operations, would you have had to exercise a discretion as to operations performed there? Take operations of expediency, that you might postpone and perhaps avoid?—I have a great many surgical operations that are operations of expediency that I would have performed there.

2198. And operations that are dangerous to life?—I suppose I could perform them too, but I should be aware I was running a risk, and the precautions would have to be very great.

2199. Have you performed operations?—Yes; a few. I was surgeon for a short time. As house surgeon I have done operations.

2200. You spoke of draughts. Were complaints frequent?—Very frequent.

2201. Were complaints of stuffiness frequent?—No; they came from my side. The patients seemed to refer that state of the atmosphere to draughts. It is only fair to say that if you are in a room for some time you become accustomed to the stuffiness, and on my going into the ward I felt it very much.

2202. Have you been frequently in the ward to see?—Yes.

2203. Have you had experience of other hospitals?—Not much. I was House Surgeon at King's College, London.

2204. As a student, were you in any other hospitals?—I have visited some others; but I have been mostly in their operating-theatres.

2205. Have you had experience of special wards at any hospitals?—Yes, at King's College, in which I may say there was trouble with draughts. I do not know what system of ventilation they had. The complaints came from the patients, because I opened the windows, and the nurses used to insist on the windows being closed.

2206. And generally were the results bad in that college?—No, I do not think so.

2207. But is the rate of mortality high?—Well, you cannot compare the two, because we are speaking of days before antiseptic precautions came in, and every wound suppurated.

2208. In your position of House Surgeon, had you much cause to complain or form an opinion that mischief was arising from septic causes?—Not as regarding ordinary surgical wounds; and I may say that our general results in the Dunedin Hospital have been greatly improved, because the recognised methods of carrying out antiseptic principles are being better understood. When I first came here they were most imperfect, and wounds frequently suppurated; but as time went on wounds began to heal better.

2209. That was due to improvement in the education of the profession?—Exactly; and so, from having seen almost any wound suppurating in a college like King's College, I saw wounds healing remarkably and kindly; and I was much struck with that in the Dunedin Hospital.

2210. Then you have not found it such a bad place?—No, not in comparison with what I recollect.

2211. And you have expressed the opinion that gynecological cases should not be placed in general wards. When did you form that opinion?—As soon as the matter was brought up for an opinion by the staff.

2212. There were comparatively few of these cases in your time?—Well, in some kind of cases gynecology has advanced so much.

2213. And you have said that such cases do not get a fair chance. Ought not an operator to know that?—Decidedly.

2214. An operator ought to ascertain the conditions around him?—He ought to under present circumstances.

2215. How would you ascertain? When you were House Surgeon would any surgeon have any difficulty in obtaining from you information about the Hospital?—Certainly not. I have volunteered evidence in many cases where I thought it would affect the patient.

2216. A question has been put to you about erysipelas arising in the Hospital, and you say that such a thing ought not to arise under proper conditions?—I say so because I bow to authority.

2217. But you have not discovered an hospital where it did not arise?—Not yet. I speak of two hospitals, one in which there was a cursory outbreak, and the other the Dunedin Hospital.

2218. And your experience is confined to these two. But do you not know that in the best hospitals it arises?—Yes, I admit that.

2219. And also in barracks, and asylums, and other places where people are treated?—Yes, I admit that.

2220. This is the report you referred to?—Yes. It is dated the 27th October, 1884. It is a memorandum sent by me to the Trustees. I signed it.

2221. A question was asked about typhoid fever; and it was said that it should not be contracted in the Hospital by the nurses. Supposing you have the case of a nurse contracting typhoid fever, you do not attribute it necessarily to the Hospital, do you?—I would not.

2222. Would you like to know about her movements at that particular time?—Yes.

2223. She might have gone among people who had had it outside?—Yes; or she might have acquired it from some other source.

2224. It is very commonly acquired from impure water?—Yes, from water affected with typhoid symptoms.

2225. And this is a question on which there are two opinions: that of taking it from persons or from outside causes?—Yes.

2226. You were asked a question as to erysipelas, whether, under certain circumstances, it was probable or possible that the operator had germs of erysipelas about him, and I think you said in that case, too, you could not tell unless you had the whole of the elements and the whole of the facts before you?—Yes.

2227. But before you could say yes, or negative it, you would have to know the whole of the circumstances of the case?—Yes, before I would condemn the surgeon.

2228. Now, supposing you had one of these very sickliest cases—a dangerous operation, say a gynecological case—would you operate if you knew of a septic case in the ward, or would you make other arrangements?—I would be inclined to make other arrangements in an important gynecological operation.

2229. Do you know the operation called Emmet's operation, and is that operation altogether unattended with risk?—Theoretically it is attended with risk, but practically it is an operation that gives very little concern to the mind of the gynecologist before he operates—not to the same degree as an abdominal section would. Whenever you make a wound there is a risk; but, of course, owing to certain special conditions I pointed out in my examination, the risk is increased owing to the local conditions of the vaginal cervix.

2230. Possibly in some such way as you have mentioned in another case? [Extract from Dr. Roberts' memorandum read]—That is a weak argument. This must have been hurriedly written, or perhaps I know a little more now than I did then.

2231. There were several other general questions put to you. For instance: as to the normal vagina containing no septic germs, no pathogenic germs—that is to say, the normal vagina under normal conditions, with no abrasion. But might not the very instance of an abrasion, and of the tear that gives rise to Emmet's operation, suggest something that would give rise to the germs?—Yes, certainly; it would point to previous disease. It is not a normal condition of affairs.

2232. We have seen it in the case-book that in the particular case of this woman who died she was described as having a sticky yellow discharge from the vagina?—Was that previous to the operation?

2233. It was at the time of the operation or immediately previous. Would that suggest anything to you?—It would suggest something to me. It might mean it was a purulent discharge.

2234. Would it suggest the presence of disease to some extent?—Yes; but I should prefer a specialist's answer to that question. From the term "sticky yellow discharge," it might mean previous existing disease.

Mr. Chapman: I am only using the words that are written in the note-book.

The Chairman: Who wrote the notes?

Dr. Batchelor: My clerk.

The Chairman: From dictation?

Dr. Batchelor: No, from his own notes. I should not write notes like that.

2235. *Mr. Chapman:* Supposing the discharge was offensive, would it suggest disease?—It would suggest an abnormal condition.

2236. And it would suggest a condition in which there might be pathogenic germs?—Yes.

2237. *Mr. Solomon:* You examined Mrs. S—— after her death?—Yes.

2238. And if there had been such a condition as to produce a purulent discharge that would be an indication of disease, as you say?—Yes.

2239. You eliminated by your *post-mortem* examination the possibility of chronic disease?—Yes.

2240. Supposing there had been acute disease before the operation, what should you have found at your *post-mortem?*—I think if there had been acute disease before its presence would have been masked by the exceedingly acute condition in which we found it at the time of death. The parts were crimson and red from inflammation.

2241. It would have been acute endometritis?—That would have been easily recognised by the physician attending her.

2042. Do you mean to say she did not have chronic endometritis?—No.

2243. Do you think that such a fact could have escaped the notice of the medical man who was attending and operating on her?—From my knowledge of Dr. Batchelor, I should say the fact could not have escaped him.

2244. Now, you have been asked in a vague sort of way, by Mr. Chapman, if you think that from the facts you yourself observed at the *post-mortem* examination the woman exhibited any symptoms of disease. I ask you is there any possibility of her having had a previous disease masked by acute endometritis?—I think not.

2245. A good deal has been made about this report, which I think is unfortunate for the Hospital. By this report of October, 1884, you tell of two cases of erysipelas that arose in the Hospital, and you could not account for their origin at all. You also say that in the same week there is a case of blood-poisoning in the case of a man who is admitted for an injury to the thigh, and who was progressing favourably until he was moved near the closet, and you express a doubt as to whether this was caused by the defective system of ventilation. Now, since October, 1884, has the condition of the Hospital improved or not?—I should say it has.

2246. I now draw your attention in 1890—after six years' experience of these cases—to one week in the Hospital. There are two cases of erysipelas arise in the Hospital for which you can give no cause, and in the same week there is a case of blood-poisoning which unaccountably arises. Does your subsequent experience since 1884 throw any light on these septic troubles?—My knowledge of the condition of the Hospital throws a light on the cause, and I could say vaguely it was owing to the insanitary conditions. I cannot go further than that.

2247. But you do not say that in your memorandum?—I expressed a doubt in the letter about the closet.

2248. Well, recalling these circumstances to your mind now, are you in a position to form an opinion as to the cause of the septic troubles?—Yes.

2249. *The Chairman.*] I do not think the closets were altered?—I do not think they were.

2250. You express doubt in your letter as to whether the closet caused the mischief?—Yes.

2251. *Mr. Solomon.*] Is it your opinion now, as to the insanitary condition of the Hospital being sufficient to account for these cases?—I think it is sufficient.

2252. Although in 1884 you were not in a position to account for it, you think, with your subsequent experience, you are in a better position to give the cause of the trouble?—Yes.

2253. Thank you. That is about the strongest evidence of my case I have yet got. I want to call your attention to the fact that these two cases arose in the Hospital, and were absolutely unaccountable. That means that they arose in the ward itself?—Yes.

2254. And you could not give a reason for them?—No.

2255. Would or would not the insanitary condition of the Hospital account for it?—Certainly it would.

2256. Now, here is your experience of 1884. Is there any practical difference in your experience of that week in 1884, and Dr. Batchelor's experience in the week ending the 22nd July, 1890?—I should say they were very similar experiences.

2257. But in 1884 you did not feel competent to come to a conclusion as to what was the cause? You were doubtful?—Yes. Perhaps I did not like to make sweeping assertions.

2258. But in the light of your subsequent experience?—I am able to speak more definitely.

2259. By the light of your subsequent experience, what is your opinion as to the origin of those three septic cases of septic poisoning then?—I should say the general unsatisfactory state of the hygiene in that ward was the cause.

2260. You mentioned is this letter that wounds got well very satisfactorily?—Yes.

2261. At that time were you familiar with Listerism?—Yes; it had been before me some time.

2262. That is, by comparison with your experience at Home?—Yes.

2263. By the light of your subsequent experience, as to what can be done by Listerism, you know what it should effect?—Yes. It means that you should be able to exclude all danger from the wound when it is carried out in its entirety.

2264. In former times did wounds do well here?—Yes, and they still do well. Here and there you get a case that should not occur. The whole object of antiseptic treatment is to diminish the risk of wound infection, and the greater the risks the less effective are the antiseptics. Of course we are all human, and errors will creep in now and again, but the fact remains that if the hygienic conditions are unsatisfactory the chances of you failing are increased.

2265. While you were house surgeon, did you ever find fault with the drains?—Well, they are not so defective as I thought they were.

2266. Did you ever draw up a design for improving them?—I do not recollect.

2267. *Mr. Chapman.*] Do you know that the drains have been altered since the date of that letter to the Trustees?—Yes, I know they have been, and alterations have also been made to the watercloset arrangements. I think there were ventilators put in.

2268. *The Chairman.*] During the years you were house surgeon was it the practice to set aside empty wards?—Yes.

2269. How long did the wards remain unoccupied?—Perhaps two or three weeks. In this matter the point I lay stress on is that the ward was whitewashed, scrubbed, and purified in a very thorough manner, and I think that those steps have largely combatted what evil results might have occurred. It was an excellent system, although it involved overcrowding, but if it had not existed the results would have been worse.

2270. What was done besides that?—The floors were scrubbed with carbolic acid and water, and the wards were sometimes fumigated with sulphur, but I do not attach much importance to that.

2271. Were the furnishings removed?—Yes, everything was taken out, including the beds, and the floor-cloths were taken up.

2272. Is that practice still followed?—I cannot answer for that.

2273. Up to what period can you speak?—Up to 1887.

2274. You have a special knowledge of pathogenic germs, and the means adopted for their destruction?—Yes.

2275. And with your knowledge of the subject, do you think in those steps sufficient means are taken to thoroughly cleanse the wards in a surgical sense?—Not in a surgical sense. I do not think whitewash is a disinfectant on large quantities of germs. I would not rely on its efficacy, although, generally speaking, it answers a useful purpose, and periodically it still might be resorted to, because it minimises the evils to an enormous extent.

SATURDAY, 30TH AUGUST, 1890.

Dr. DELAUTOUR sworn and examined.

2276. *Mr. Solomon.*] What is your name?—Harry Archibald DeLautour.

2277. What is your title?—I am a member of the Royal College of Surgeons, England.

2278. You are a duly registered practitioner for this colony?—Yes; and I am also an associate of King's College, London.

2279. How long have you been practising in Dunedin?—Since the beginning of 1875.

2280. You have been in practice in Oamaru?—Yes.

2281. And I suppose you are a member of the staff up there?—I am a member of the honorary staff, and had sole charge of the Hospital for two years.

2282. Have you given this question of hospitals much special consideration?—I have gone into it perhaps more than I should have done—more than most people go into it.

2283. Have you had occasion to visit the Dunedin Hospital during your stay in New Zealand? Yes.

2284. Frequently or seldom?—My first visit to it was when I came here in April or May, 1875, and since that time I have often been over it thoroughly when my old friend Dr. Roberts was house surgeon. I have been over it occasionally since then, my last visit being yesterday.

2285. Yesterday you went over for the purpose of inspecting it?—Yes; I did not go over the whole of it, but only through three or four wards.

2286. But was yesterday's visit a casual visit or a visit of inquiry?—One of inquiry, as far as it could be without disturbing the patients.

2287. Now, from what has been your experience in the past, and from what you saw yesterday, will you tell us, please, whether the sanitary condition of the Hospital is satisfactory or otherwise?—It is very unsatisfactory.

2288. Have you seen many hospitals in your time?—Yes, a good many.

2289. Hospitals of the same size?—Yes, and also some larger. I was house surgeon of King's College for six months, then assistant for another six months, and afterwards resident surgeon for diseases of women in King's College, so that I had eighteen months constant indoor work there.

2290. And in your experience you say you have seen other hospitals of about the same size?—I have seen some smaller and some larger, and I have gone over them paying visits.

2291. Will you tell us how, in your opinion, the Dunedin Hospital compares with other hospitals of about the same size that you have seen?—Well, unfavourably.

2292. You have seen better hospitals of the same size?—Yes.

2293. Have you seen worse?—I would not like to say that exactly. It is this way: that when going over other hospitals I did not know quite so much about sanitation as I know now, and there may have been defects, such as are in the Dunedin Hospital now, that I did not see.

2294. We have heard in this inquiry a deal about perfect hospitals. I do not ask you whether Dunedin Hospital is perfect or not; it follows from what you say that it is not; but, in your opinion, is its condition fairly satisfactory?—I think it is in a very bad sanitary condition.

2295. Do you approve of the construction of the Hospital?—No, it was never meant to be a hospital, and it is on the sort of "block" system which is a bad system.

2296. That is, the wards lead into a central hall?—Just so; and one side of the wards is blank wall.

2297. Is that desirable?—No, not at all.

2298. In the present construction of the wards of the Hospital is it possible to obtain cross-ventilation?—No; it would be a very difficult matter.

2299. Is that essential to a sanitary condition or otherwise?—I mean to say this: that in the present Dunedin Hospital, as at present constructed, if you put big holes in these walls and put gratings and ventilators to bring in the air, you would bring it in from the central hall, and the air there might be contaminated by anything inside. You should bring in air as pure as you can, and not from the inside of a building if you can help it.

2300. Yes, we will come to that by-and-by. What about the lighting of the wards?—Of course, there is light from only one side.

2301. Is that sufficient, do you think?—I think there is sufficient light as far as it goes. Of course, there should be light on both sides.

2302. But I am not speaking of that. Under the circumstances, do you thing the lighting is satisfactory, seeing there is one blank wall?—I would not like to say about that; but there should be more light. There should be light on both sides.

2303. And what about the sun-light?—Of course, it can only get in at a particular time of the day. Sometimes you will hardly get any sun at all. Some wards only get it in the morning, or a portion of it, and some get only the afternoon sun.

2304. Is that proper?—No, the sun should be got all day, if possible.

2305. And what system of hospital structure will secure that?—The pavilion, or corridor system, which is much the same.

2306. You have a plan of a sample of an hospital, have you not? Will you show it to me?—There are several. One of the best is the Marine Hospital at Chicago. I think there is one in Buck's book; it is a very good one, and is erected at Swansea. Then the San Francisco Hospital is also built on the marine system, and is a good one. Another is the Lariboissiere Hospital of Paris. There is also the Herbert General Hospital at Netley. The best one that has been constructed is one mentioned by the *Lancet*—the Hanwell Ophthalmic District Schools. It has only been built within the last few months. It is a one-storied building, and it is built at a very reasonable cost—about £75 per bed.

2307. Now, in the Dunedin Hospital, how are the patients placed with regard to the windows?—I do not quite understand you.

2308. In the wards are they close to the windows?—Yes, on one side they are, and on the other side they are, of course, away from the windows.

2309. Is that wise do you think, in our climate?—I think you get better ventilation for the patients if you keep the beds about 1ft. away from the wall.

2310. *The Chairman.*] They are too close to the wall under the window?—Yes, they are too close; they should be away 1ft. really, and in the corners they should be 3ft. or 4ft. from the side walls.

2311. *Mr. Solomon.*] Now, what about ventilation in the wards in the Dunedin Hospital?—I think it is bad, for this reason: that when I went into a ward yesterday morning it was only ventilated by the windows and openings—ventilators they called them—and in cold weather these must be shut up. When I went there yesterday morning they had evidently not been open long, for when I went into the ward there was the old familiar "hospital" smell very strong. When I went in in the evening, the windows having been open all day, it smelt comparatively sweet. Going into another ward, in which the ventilators had been shut for some time, the smell was very offensive. The ward that smelt badly in the morning smelt sweetly in the evening, the ventilators having been open all day.

2312. *The Chairman.*] Which ward, do you remember, was bad in the evening?—No. 3 was bad in the evening? No. 1 I went into in the morning and evening.

2313. *Mr Soloman.*] With fair ventilation, is there any necessity for that state of affairs?—It should not be ventilated in that sort of way. The air should come in at the top of the ward, and not low down, and should be warmed before it comes in.

2314. *The Chairman.*] Can you suggest any reason for No. 3 being offensive in the evening? Had it been sweet enough in the afternoon?—I had not seen it then. In the evening was my first visit to the ward. I think the ventilators must have been shut all day.

2315. Was there anything in the wind yesterday?—There was very little. In No. 1 ward the ventilators were, at the time I visited it, open, but in No. 3 the windows were closed.

2316. I thought you might say how long it would take for the air to become offensive with the ventilators closed?—I could not tell that.

2317. *Mr Solomon.*] The method of ventilation here is by windows, is it not?—Yes.

2318. And is it practicable to keep these windows open in winter to have the wards sweet?—I think in stormy weather it would not. The tendency would be to make the wards cold, and when the patients complained the warders would shut the windows. You would need to get air at the rate of 20,000ft. or 30,000ft. per hour, and it must come through the floor. A big fireplace like that would take in about 50,000 cubic feet per hour.

2319. *The Chairman.*] What, the present chimneys?—In an ordinary room it will take 20,000 feet per hour easily, and it really requires it. When the windows and ventilators are closed and you cannot get fresh air from the outside you must get it from the inside, and in that case it might come either under the doors, through the gratings from the interior of the hospital, or up from the cellars below, or it might be sucked down from the ceilings above.

2320. And all these would be sources of impure air?—They are all possible sources of impure air.

2321. *Mr Solomon.*] How often do you think the air should be renewed in those wards?—You ought to have a system of ventilators, such as Holmes and Bristoe recommend, which would enable the ventilation to be continuously going on, carrying out as fast as they were created any odours or impurities that arise. You do not want to have the ward shut up until the air becomes bad, and then open the windows to take the air away, for in that you would create draughts. You want to have a continuous system of ventilation to take the bad smells away.

2322. Is there any such system here?—No.

2323. The atmosphere you smelt in the hospital yesterday—was it healthy or unhealthy for the patients?—It was the familiar smell that is called "hospital" smell. We sometimes talk of "prison" smell, and the other word is used in the same way. Such smells ought not to exist.

2324. And ought this "hospital" smell to exist in a properly ventilated hospital?—No.

2325. *The Chairman.*] You say it is familiar and well-known. You mean it is only familiar and well-known in hospitals not in a proper condition?—Yes.

2326. You do not mean that it is a constant adjunct in a hospital?—Oh, no; the terms "hospital" smell and "prison" smell are terms of reproach.

2327. *Mr. Solomon.*] Have you a diagram of the pavilion system in that book?—Yes, plenty of them. There is the Herbert Hospital.

2328. Is this a well-recognised book?—Yes. This hospital I refer to is a round hospital, and is not so good.

2329. *The Chairman.*] Do you know the Liverpool Hospital?—No, but I see it has been criticized adversely because some of the wards do not get the sun at all.

2330. *Mr. Solomon.*] Have you gone into the proper space that patients ought to have in a hospital?—Yes.

2331. Now, can you tell me, as a result of your reading and of your experience, what is the

minimum? We will take the medical cases first and the surgical cases next. What, in your opinion, in a medical ward, and in a surgical ward, is the minimum bed-space that a patient with safety can occupy. I do not mean the square or cubic space, but the bed-space between the beds? —It should not be less than 7ft. or 8ft.

2332. *The Chairman.*] That is for medical?—Yes; it should not be less.

2333. And for surgical?—I should increase it to 10ft. That would give you perfect safety.

2334. *Mr. Solomon.*] We allow 2ft. 6in. for the bed?—Yes.

2335. That will leave you from 5ft. to 6ft. between the beds?—Yes.

2336. What, in your opinion, is the minimum square space a patient could safely occupy?—I do not think anything under 110ft. or 120ft. safe. I am speaking now for general hospitals.

2337. *The Chairman.*] The total square space divided by the number of patients?—Yes.

2338. You say 110ft.?—Yes. A great many have 130ft. or 140ft., but the minimum I put at 110ft.

2339. *Mr. Solomon.*] And, in wards in which there are severe surgical cases, how much more ought to be allowed?—I should say 140ft. or 150ft. in severe cases.

2340. *The Chairman.*] That means, in surgical wards, it should be 140ft., because you cannot alter a ward when a case comes in?—That is so.

2341. You mean 110ft. for medical, but 140ft. for surgical?—Yes. I do not attach so much importance to floor and cubic space as I do to the air per head per hour.

2342. *Mr. Solomon.*] What do you think is the minimum cubic space that should be allowed in surgical wards?—2,000ft.

2343. *The Chairman.*] And for medical?—175ft.; and for special cases—lying-in or gynecological—you should have more still.

2344. How much more?—200ft. or 300ft., or even 500ft., or as much as you can possibly get.

2345. *Mr. Solomon.*] You wished also to say you attach more importance to the constant renewal of air?—Just so, and for this reason: you might have patients in a room with 3,000 cubic feet space, and the room might be hermetically sealed, which would result in the patients being all dead in a fortnight. You want to have the air constantly renewed.

2346. Is the amount of room the least necessary condition?—No; because you cannot get the amount of air per head per hour unless you have proper cubic space.

2347. You have "Buck" in your hand. Will you show me the pages for the figures you have given us?—Yes.

2348. Is that recommended as an authority?—Yes.

2349. Will you turn to the pages that refer to it, and tell these gentlemen what he says on the subject? What does he say on the subject of sufficient bed-space and so on? There is a table on the square space there?—Yes. He says: "A greater width than 30ft. has been found to interfere with a due system of ventilation, and a width of less than 24ft. gives insufficient space for two rows of beds. The width of the ward may best be put at 24ft. to 25ft. The beds may be set 1ft. from the wall, which makes it easy to approach them from all sides, and conduces both to cleanliness and to efficient ventilation. If the beds are 6½ft. in length this will give a clear passage between them of 9ft. to 10ft."

2350. *The Chairman.*] Does he give any reason for saying 30ft.?—He does not; but I suppose he arrives at that conclusion somewhat in the same way that he decides that if walls are too high ventilation does not go on. I dare say it has been tested in some way. He says "The beds may be set 1ft. from the wall, which makes it easy to approach them from all sides. . . . If the beds are 6½ft. in length this will give a clear passage between them of 9ft. or 10ft."

2352. That is for a passage between the ends of the beds?—Yes. Buck goes on to say: "It may be given as a general rule that a medical ward for twenty patients should be, at the smallest, of the following dimensions: Length, 80ft.; width, 25ft.; and height from 16ft. to 20ft."

2353. Does he give any reason why there should be less than twenty patients in a ward?—He says, "Each patient would then have about 100 superficial and 1,600 cubic feet of space. For surgical cases the number of patients in the ward would be smaller. Sixteen patients in the same space would each have 2,000 cubic feet, and where such a room is used as an isolating or foul ward not more than ten patients should be accommodated, which would give to each 3,000 cubic feet."

2354. *Mr. Solomon.*] That would give them 16ft. to a bed, would it not?—It would give each bed 3,000 cubic feet of air.

2355. Now, in your opinion, is it more or less necessary to be particular about keeping the wards free from crowding when ventilation is defective?—Certainly it is necessary to be careful about over-crowding, and you must not overcrowd your wards.

2356. Did you measure the wards in this Hospital?—No.

2357. You noticed, however, how far the beds were apart?—Yes.

2358. And what did you find?—They were very irregularly placed. Some were 18in. apart, and others from 2ft. to 2ft. 6in. Some might have been a little more.

2359. *The Chairman.*] Was that in a surgical or a medical ward?—I do not know. It was in No. 1, and in another upstairs.

2360. *Mr. Solomon.*] No. 1 is a surgical ward?—The bedsteads might have been about 2ft. 6in. apart, but the clothes overhung them, and there was certainly not more than 18in. distance in these cases.

2361. Now, do you think that what you saw on that point—as to the beds being close together—shows that anything like a safe state of affairs exists?—It is overcrowded, no doubt, and ever since I first saw it I had that idea.

2362. *The Chairman.*] That is, from 1875?—Yes, when I went over it with Dr. Hulme.

2363. *Mr. Solomon.*] Is the system of ventilation a trifling matter, or a serious one that calls for amendment?—It is serious, of course.

2364. Now, we find—you may assume these figures are correct—that the maximum square space that patients get in the wards in the Dunedin Hospital is 78ft., and the maximum cubic air-space there allowed, according to present conditions, is 1,093ft.—assuming you take an altitude of 14ft. for ventilation—and 1,350 if you take an altitude of 16ft.—All other books say 14ft. is the proper altitude, but Buck says 16ft. to 20ft.

2365. *The Chairman.*] That is the height of the ward. But when you calculate it means you calculate the air up to a height of 12ft.?—I believe there is very little ventilation indeed to be got any higher than 14ft. or 16ft.

2366. Supposing the ceiling of the ward was 12ft. high, do you consider you would get the advantage of the 12ft?—Yes.

2367. Would it not be necessary to have a place in which hot vitiated air would travel along?—The walls here are about 12ft. or 14ft. high, and under those circumstances I think the air would be more under control for change or removal. When you go up to 18ft. or 20ft. there is greater stagnation of air, and it is less easily changed. That is the plan that is adopted in the Hanwell Hospital, where the walls are carried up to about 12ft. and then arched towards the centre to a height of 15ft. or 16ft. The air escapes through a cavity in the ridge-poles.

The Chairman: That is what I meant—that you must have a cavity for the air to travel along.

2368. *Mr. Solomon.*] So you get effective ventilation up to 15ft. With 78ft. of square space and 5ft. 6in. of bed-space, do you think that the present system of ventilation in the Dunedin Hospital is sufficient?—I do not, indeed. Certainly in a surgical ward it is not, and it is not what is desired for medical cases.

2369. Do you think that that is safe with the present system of ventilation?—No, certainly not for surgical cases, and it is not what is desired for medical cases.

2370. Now, you noticed the position of the waterclosets, and the bath-rooms and lavatories, in the ward?—Yes.

2371. And what do you say as to them?—I say they are badly placed.

2372. Is it proper for waterclosets to open directly into the wards?—No.

2373. And the bath-rooms are part and parcel of the wards?—In this case they are.

2374. Is that correct?—No.

2375. What should be the case?—They should be detached, and there should be a passage between the lavatory, or closet, or sink, with cross-ventilation.

2376. Have you examined the drainage in connection with these waterclosets?—Yes, as far as was possible. The closet seems to me to be a Twyford's Unitas Closet. The closet there shown [handing in a copy of the *Lancet*] is an excellent one. But in the Hospital there is no urinal, and they use the closet as the urinal. The consequence is that they do not pull up the plug after using it for a urinal, and there is therefore a distinct smell of urine in the place; and in going into it I felt a strong smell.

2377. Do you think that by the present system of double doors leading into the wards it is possible to avoid a bad smell coming into the wards?—No. When the fires are bringing air into the ward the air must come in under the doors. There is no other escape for it. I noticed a small window in the closet.

2378. *The Chairman.*] Did you satisfy yourself that the ventilator connection was all right?—No, because it was all closed up.

2379. *Mr. Soloman.*] Do you think the system of allowing the steam from the lavatories and the bath to come into the ward is safe?—No, it should not come into the ward. The moist air from the lavatories and baths should not come into the ward at all.

2380. It warms the air, makes it very dry, does it not?—I do not object to dry heat, but I do object to moist air.

2381. What effect has it on the germs?—It is like moisture with mushrooms, it makes them grow.

2382. You examined the traps of the waterclosets and lavatories?—I examined the traps of the sinks in the lavatories, but the traps of the closets I could not get at.

2383. Are they trapped?—Yes.

2384. *The Chairman.*] Are the traps ventilated?—No.

2385. Not at all?—No.

2386. Are there traps to the baths?—I do not know anything about them. I am talking now merely as to the sinks and the basins.

2387. *Mr. Soloman.*] Now, as to the drains. They are trapped and not ventilated?—The traps are not ventilated.

2388. Are you sure?—Yes, I am quite sure of that. I have drawn a plan of them, as I found them in all of the four wards that I examined [plan handed in].

2389. That plan shows on the top what they should be, and on the bottom what they ought not to be?—Yes.

2390. Will you tell me whether, under the conditions that you found the drains and the unventilated traps, sewer-gas can avoid coming into the wards?—There is no other escape for it.

2391. *The Chairman.*] There is no other escape for the sewer-gas except into the wards?—That is so; it is the only escape for the gas that accumulates in the drains, the sinks, and the pipes that lead from the basins.

2392. Have you prepared a model, and does that model show the drains as you found them?—This is a model of a ventilated drain.

2393. What prevents the rise of sewer-gas into wards under a proper system of drainage? Is it what you call a water-seal?—A perfect water-seal does.

2394. Is there a perfect water-seal when the traps are ventilated?—Yes.

2395. Is there a perfect water-seal when the traps are not ventilated?—No, because it is siphoned out. [At this stage the model was explained and worked.]

2396. Then, it may be fairly said that the results of your inspection and of your experiment show you that the drains are unsatisfactory?—Certainly. I might say that the model was made yesterday for me by Mr. Christie, plumber, of George Street.

2397. Have you, in other matters besides hospitals, seen the proper course adopted?—Yes.

2398. Have you seen it wanting in buildings that should have been provided with it?—Yes.

2399. I suppose there is hardly a house in which the drains are properly ventilated?—That is so.

2400. Are you aware that a great deal of the difficulty that has been experienced in producing dairy-produce that will keep is entirely due to the overlooking of this?—Yes; I think it is one of the most potent factors. The butter cannot be sent to England, just because the drains are not properly fitted with ventilating-traps. I used to think I knew everything about proper ventilation until the trouble of the Oamaru Hospital arose; but I have been studying the question, and this defect of the ventilating-traps has been somewhat remedied in that institution.

Mr. Chapman: I may say that Seacliff Asylum has been well ventilated on this principle.

2401. *The Chairman.*] You say the difficulty existed to some extent in the Oamaru Hospital?—Yes. My attention has been drawn to it on account of a friend who had been ill, and after a visit to the seaside recovered. While she was away a nuisance in the shape of sewer-gas was taken from her room, and ever since she has been all right.

2402. *Mr. Solomon.*] We have heard a deal about the presence of these pathogenic germs being a source of danger of septic poisoning: do you agree with that theory?—Yes, certainly.

2403. The concentrated or diffused state in which they exist: does that have any effect?—If you concentrate them there is a greater danger. If you get them well oxygenated they die.

2404. In surgical wards they are liable to be generated?—Yes, specially liable under special sources of focus, in the open wounds.

2405. Now, take No. 1 ward in the Dunedin Hospital in the condition in which you found it yesterday, what should you say about the existence of these germs? what would be their state of concentration?—I think everything is favourable for their accumulation and propagation, and that the only way to keep them out is by a great expenditure of antiseptics.

2406. And can you make that a certainty? You say the air is favourable to their propagation: can you always make a certainty of keeping them out?—I do not think so; but we try as far as we can to prevent them getting in. I believe pneumonia is very often a septic disease produced by breathing septic germs. Pneumonia patients do not recover so soon as we should like when they are unable to breathe proper air. And then, again, we know, in regard to bacillæ, that in such an overcrowded ward as that there must be great accumulations of the bacillæ. The plaster of the walls must have a bad effect.

2407. Patients suffering from chest and such complaints: have they a fair chance of recovery in wards as you found them?—I think recovery would be delayed, and the treatment prolonged, and more expensive, and I should expect to find the mortality high.

2408. In cases of surgical operations, special operations, or abdominal sections, do you agree that there is special danger of septic poisoning?—Well, in a healthy atmosphere there is a certain amount of danger. I do not mean septic danger.

2409. But these cases are specially liable to septic trouble?—Yes, certainly, to such cases as these.

2410. Will you tell us whether, in the conditions that obtain in the Dunedin Hospital at present, the risk of septic poisoning is materially increased?—Certainly.

2411. *The Chairman.*] I understand you to say there is a certain amount of risk even where circumstances are favourable?—Yes, even more than in simple operations. The reason is simply this: that in ordinary operations, as in the simple removal of tumours, in old days, before the days of Listerism, a large number of them recovered, but almost every case of abdominal section died; almost so much so that it was looked on as murder to perform operations for ovariotomy twenty or thirty years ago. Now it is almost like murder to leave them alone.

2412. Listerism has very nearly stamped out the danger of septic poisoning?—Yes. It has done a great deal, together with the assistance of advanced hygiene promoted by gynecologists.

2413. But can Listerism do away with the danger of septic infection when the surrounding atmosphere is of such a character as you find in the Dunedin Hospital?—Not entirely. You will find something go wrong and you cannot tell why, and you then get your septic poisoning.

2414. Then, under such circumstances as these, you would expect to find that cases would go wrong now and again unaccountably?—Yes, frequently, I should say, in a hospital such as this. In connection with this, I would like to say that great gynecologists—Tait, for instance—depend more on the hygienic conditions in the wards and houses they operate in, and use no antiseptics at all.

2415. There are two schools, are there not?—Well, there are to a certain extent, but Tait would decline to operate in the Dunedin Hospital. I do not think he would, seeing the condition of affairs, because, as he says, he goes in very strongly for good hygienic conditions. He had a discussion lately with Sir Spencer Wells. Both of them have about the same mortality, and Wells uses Listerism, but Tait says he uses water to wash out the parts affected, although the water, on analysis, has been proved to contain twenty-five sources of impurity.

2416. But do the disciples of the school of Lister pretend that their system is effective when the hygienic condition is unsatisfactory?—They simply say, "We make it a great deal better, and we have made improvements." I think the truth lies in a cross between the two, and that one has been assisting the other.

2417. You know Dr. Batchelor?—Yes.

2418. As an operator?—Yes; I have seen him operate several times.

2419. Tell us your opinion of him?—He is most skilful and careful, and takes a great amount of care before operating. When I first saw him operate it was almost new to me to see the way he got everything ready and everything clean, and also provided antiseptics. The work was thoroughly done.

2420. We do not want to blow anybody's trumpet, but would you say that Dr. Batchelor is a practitioner abreast of the times?—Certainly, he is well abreast of the times.

2421. Do you think that, in Dunedin Hospital, patients operated on by him or any similar operator can get the full benefit of his or their knowledge of medicine?—I should think that every one being operated on in the present condition of those drains and the overcrowding runs a risk.

2422. Would they run that risk if the Hospital were fairly satisfactory?—Not if the drains were right, and if there were no overcrowding.

2423. Are you dealing with all classes of cases or are you only bearing in mind surgical cases?—There must be a risk in a permanent hospital like this one, with the walls and floors almost saturated with germs.

2424. *Mr. Solomon.*] Is the condition of the walls and ceilings and floors in accordance with modern theory?—No, certainly not.

2425. I can put it to you without leading you, that the object of the construction of hospitals of modern times is to prevent the absorption of germs?—That is so.

2426. Do the walls here favour the absorption or not?—They favour the absorption of germs.

2427. And after a lifetime you now see the condition of the Hospital. It has not been much in the past, and has been in existence for twenty years. Knowing the conditions that have existed during the whole of that time—overcrowding and so on—what should you say was the condition of the walls now?—I would not like to say they are fully saturated, but they must contain much organic matter in the walls and ceiling and floor.

2428. That would be a source of danger?—Yes, especially when the windows are shut.

2429. Is that a danger that will increase or decrease?—It increases as it goes on. No hospital ought to have a life of more than fifteen or twenty years.

2430. Will you refer to Buck's book, page 745, vol. i., on this subject?—Yes, he is writing on the general principles of hospital-construction: "The plan which has commended itself most favourably to medical men of late years in establishing a hospital, whether of large or small dimensions, has been to build it of detached wooden pavilions, with an administrative building of more permanent materials. Unfortunately, physicians have rarely the privilege of building hospitals; and, even if they are permitted to suggest the plans, they find them so manipulated by trustees or architects that the essential points are in many cases thoroughly eliminated. It is not reasonable to suppose that architects will suggest, or committees of construction adopt, a material which gives little opportunity for display, appearance of permanency, or the erection of an architectural memorial. The Surgeon-General of the United States Marine Hospital Service says, 'The old magnificent hospitals built as monuments for all time will be abandoned for the single pavilion of indefinite existence; and the only strictly permanent parts of the modern hospital will be the executive building, kitchen, laundry, and engine-house.' 'I believe,' says Billings, 'that no hospital should be constructed with a view to its being used more than fifteen years.'"

2431. Do you agree with that?—Yes.

2432. Do you consider that our Dunedin Hospital, after remaining in its present condition for the past twenty-four or twenty-five years, and gradually absorbing these germs, is a safe repository for surgical cases?—No; it may do for medical cases if half the number of patients were kept in the wards that there are at present.

2433. *The Chairman.*] Do you say not for surgical cases?—Well, even then you might get in some surgical cases; but special cases—gynecological, ovariotomy, and abdominal sections—should be in another place, as they are not safe in the Hospital. Eye cases should also be taken out.

2434. *Mr. Solomon.*] Do you think that a surgeon operating in the Dunedin Hospital for abdominal sections and other severe operations can operate with confidence?—If I were one I should feel very nervous about it.

2435. Can you, in any case or cases, ascertain the danger arising to patients from the defects you have pointed out or from the conclusions you have formed as a result of your experience?—I do not follow you.

2436. Supposing you went into this Hospital as a new doctor, and performed abdominal sections, could you form any positive opinion of one case, that there was danger of septic poisoning, or would it take time?—It would take time. You see things go well, and then by degrees they go wrong, and you have a stroke of bad luck, which you will not be able to account for.

2437. Is it consistent with the condition of the Hospital that things should result for a long time satisfactorily, to be followed by a run of bad luck?—Well, even with a fairly good building you may have an outbreak.

2438. Should you consider now, in the present system of ventilation, that the dangers are more appreciable in the winter or in the summer?—I should say in the winter, simply because you get less fresh air. There is a tendency to close the windows in winter.

2439. *The Chairman.*] Was there not an old idea that there were certain seasons for certain operations?—Yes, I believe there was something of that sort. I have an indistinct recollection of it.

2440. *Mr. Solomon.*] Now, we have had operations divided into two classes—expediency and necessity. We have been told there are cases in which a doctor may be of opinion that an operation is desirable, and yet it is not absolutely necessary, and he has to exercise his discretion as to whether he should operate or not?—Yes, that is so.

2441. Supposing you were a practitioner in the Dunedin Hospital, and you knew what you do know, would you be able to fairly exercise your discretion without taking this condition of the Hospital into your mind, or would it be a factor?—Of course it would be a factor in my mind. I should simply decline to operate unless compelled. I might be obliged to do a tracheotomy or a ruptured aneurism in order to save life, and of course that would be a case of absolute necessity; or you might have a case of compound fracture which would be bleeding very badly, or something of that sort. Operations of that kind would be cases of absolute urgency.

2442. But I mean in an operation that was desirable?—Well, in a case of tumour, or operations of that kind, I should put the operation off. Any operation that it was absolutely desirable to perform I should take out of the Hospital and put somewhere else.

2443. Why?—If you performed in the Hospital you have a risk in your patients' life, and you also run a risk of injuring your own reputation. Of course, you look at your patients' life first, but you must never forget your own reputation.

2444. What should you say would be the effect of the present condition of affairs at the Hospital with regard to the length of time a patient would remain in?—I would say that under the conditions I have mentioned a patient would be in longer than he should be.

2445. Do you think it desirable that gynecological cases and ophthalmic cases should be treated in the general surgical ward?—I think it is better they should not, and, as a matter of fact, Sir Joseph Lister insists on having a separate ward to himself. He succeeded my old tutor. He would only go into that hospital on the condition that he had a ward entirely to himself, and that his cases were not mixed up with any other cases. He distrusted the sanitary condition of the rest of the wards, and said, "I will not risk my reputation in those wards; I must have one to myself."

2446. Do you think that erysipelas ought to arise in a ward in a properly ventilated hospital?—It ought not, but you might get a sporadic case once in four or five years. Visitors or friends might bring it in from outside.

2447. But would the insanitary condition of the ward exercise an influence on the chance of erysipelas breaking out?—Certainly.

2448. If a ward was in a sanitary condition, a good healthy condition, and erysipelas was brought in from outside, would you not expect it to extend?—If a hospital was in the condition of the Hospital in Dunedin I should expect cases to break out in different parts of the hospital, and in different wards.

2449. We were yesterday told that in Dr. Roberts's experience in one week, some years ago, two cases of erysipelas broke out in different wards in the Hospital, and he could not account for them; and also that one case of septic blood-poisoning arose. Now, is such a state of affairs in one week in a small hospital consistent with a sanitary condition?—No; it shows there is something wrong. I have seen cases of sewer-gas poisoning, and I have seen every inmate in a hospital down in half an hour. That occurred in the Oamaru Hospital when it was in a primitive condition, when proper piles were not in. They wanted to make a connection with the old cesspit, and the whole place was flooded out. There were no traps or anything in those days. I merely mention this to say that sewer-gas poisoning may produce different kinds of illnesses. Some have it thrown off in the form of dysentery, as one of the warders in the Hospital. One woman, instead of being in the Hospital for about ten days, as she would have ordinarily been, was kept there for four months, and when she recovered she had a pyæmic abscess. I just mention these cases in connection with the cases mentioned by Dr. Batchelor and Dr. Stenhouse. There might have been some of the traps or sinks left open for a time, thus giving a constant income of sewer-gas at one time, and that might account for an outbreak.

2450. This in itself would be dangerous no doubt, but when the walls are covered with septic poison germs, would it not be still more dangerous?—Yes.

2451. In the last week we speak of we have this: that in Dr. Batchelor's private practice he had three different abdominal cases, which all recovered without the slightest symptom of septic poisoning; that in the same week or fortnight he had three less severe operations, two of which developed septic poisoning; that a patient on whom he had operated sixteen days previously developed similar symptoms; and that during the same time there were four cases of erysipelas broke out in the Hospital in different parts. Now, by any process of reasoning, in your opinion, is that consistent with a proper state of affairs in the Hospital?—It speaks for itself, and shows plainly that all the sickness arose inside the Hospital, and was not carried in by Dr. Batchelor from without.

2452. Is it consistent with the condition of affairs you found?—Yes.

2453. Now, we hear of cases of slight injuries which have gone into the Hospital, such as knee-joints, which have ultimately required excision, and which, unaccountably, have very shortly after admission developed suppuration, and so on. Is that consistent with an unhealthy condition of the ward?—It might come from an unhealthy condition of the ward.

2454. It might come?—Speaking generally, you might have a person come in who was an unhealthy subject, and suppuration, if it occurred in his case, would be freer than in a healthy person; but if a healthy person came in, and suppuration followed in his complaint, I should say he had got septic poisoning.

2455. Could septic poisoning affect a knee-joint without any lesion?—In that case I should be more and more inclined to attribute the existence of it to septic poisoning.

2456. And generally, supposing after years of experience you had cases which developed most unexpected symptoms of a septic character, which you could not account for, would the condition of the Hospital, as you found it, assist you to arrive at a conclusion?—Yes.

2457. There is a passage here rather important. This report refers to walls and so on, "One of the uniform defects"——

2458. *The Chairman.*] Does it say anything about whitewashing the walls?—No.

2459. *Mr. Solomon.*] There is only one other point I wish to trouble you with—that is, the rate of mortality. Do you think the conditions out here are more or less favourable to a low rate of mortality than in England?—I think they are more favourable, speaking generally; in fact, the Registrar-General's returns show that very distinctly.

2460. Do you know what the district rate is at Home?—It varies from 25 to 30 per thousand.

2461. And out here?—About 15 or 16; sometimes 17. I know that the water-supply has made a great difference in Oamaru. It has gone down until it is now 8·3.

2462. And what about the condition of the patients brought into the Hospital?—In this country you have well-fed patients, who live in very fair houses compared with the houses people live in at Home in the large cities.

2463. *The Chairman.*] Do you connect the reduction of the death-rate in Oamaru with the new water-supply?—Certainly I do. For two years previous to its introduction we had erysipelas and typhoid, which decreased like magic when the water was brought in. It has the lowest rate of mortality known; in fact, Oamaru is the healthiest place in the world just now.

2464. You say the patients here compare favourably with the patients at Home?—Yes; but you cannot shut your eyes to what goes on around you. The people here are strong and healthy.

2465. You know that of your own experience?—Yes.

2466. What about the class of cases met with here, say, in our own Hospital?—They are similar to what you get anywhere else. You meet with fewer old cases—chronic cases. They are only beginning to come in upon the public. It is a young colony.

2467. The class of cases we get in Dunedin is normal then? Are there any special circumstances about them?—No; none I can think about.

2468. We have been told that the death-rate at Home is satisfactory. What, in your opinion, is a satisfactory death-rate?—I believe a satisfactory death-rate is 4 or 5 per cent. in the London hospitals. Sometimes you get it higher.

2469. Some of the hospitals take all cases, in which the rate is considerably more—St. Thomas's for instance?—Yes, I dare say it is more; and they are old hospitals and are saturated with germs.

2470. What do you say is the maximum mortality-rate here, extending over a couple of years, that ought not to pass without some explanation?—To answer that I would draw a comparison between the mortality in the London hospitals and the mortality in the London districts. If there you have a higher general mortality—say, 25 or 30 per thousand—you would have a low mortality in their Home hospitals. We should in our more healthy climate and healthy condition of people have a lower death-rate; at any rate, it should not be any higher.

2471. What is the maximum?—I say, 5 or 6.

2472. Would the septic condition of a hospital raise the death-rate?—Certainly.

2473. Materially?—Yes, I should say so. Not only would it raise the death-rate, but it would prolong the treatment of your patients and increase the expenditure in drugs.

2474. Do you know whether that is so?—I should expect to find it.

2475. How would you expect to find the iodoform bill?—In a hospital such as this you must use an almost extravagant quantity of antiseptics.

2476. How would Lister get on out here?—He would not get on out here at all.

2477. Is there anything in the condition of the Hospital, except its septic tendency you spoke of, to justify your accounting for a mortality-rate for one year of over 9 per cent., and for another year over 10 per cent.?—There is nothing else I can think of. We have seen that the drainage is bad and the ventilation also, and that must be followed by a higher mortality.

2478. Is it surprising that we should find in the last two years that the lowest death-rate is in the newest hospital?—Not at all. It has not had time for the germs to get into it.

2479. And, strange to say, the highest death-rate is in the Dunedin Hospital—the oldest. Is that surprising?—I do not think it is. No hospital should live more than fifteen or twenty years.

2480. Do you agree now that there are defects in the sanitary condition of the Dunedin Hospital?—Yes; I have pointed them out.

2481. Do you agree or not that those defects are of so serious a character as to be a source of grave danger to the patients, and call for immediate remedy?—Yes, I think so. The sooner the sewer-gas is prevented from going into the Hospital the better, and the ventilation should be attended to as well.

2482. And the overcrowding?—Certainly.

2483. Can you, under any state of affairs, expect to find a low rate of mortality in the Dunedin Hospital?—No; I do not see how you can get a low rate under present circumstances. Of course, I am taking into consideration everything I know—overcrowding and all that.

2484. *Mr. Chapman.*] There are one or two matters in your evidence on which I should like to ask a few questions. You instanced a modern hospital. Have you calculated the floor-space and the bed-space of it?—I have examined it. You must remember that hospital is for children, and they will take half of what an adult takes.

2485. Is that recognised?—Yes; they breathe less.

2486. *The Chairman.*] That is in the Hanwell Ophthalmic Schools?—Yes.

2487. What have the schools to do with the Hospital?—The school is in connection with the Hanwell Industrial Institution, in which they have had hundreds of cases, owing to the insanitary condition of those buildings. They have had cases of purulent ophthalmia following pneumonia, and several other septic diseases, so that the Government were induced to alter the building, which has cost them £20,000. This building is an adjunct to the school, for treatment of cases.

2488. Then, it is a kind of hospital?—It is a hospital, so that the children affected may be isolated from the others. It will hold three or four hundred.

2489. What do you think it would cost if it was to be erected out here?—Well, timber is cheaper here; but the price of stone bears the same proportion to the price of stone at Home.

2490. *Mr. Solomon.*] There is a question I would like to ask here that I forgot to put before. Do you think a hospital can be satisfactorily patched up?—I think it might be patched up for chronic cases and for a certain class of medical cases; but there should be half the number of patients in each ward that there are at present.

2491. *Mr. Chapman.*] How do you make out on this plan what is the position of the water-closets?—They are here. You will see they have cross-ventilation by means of a lobby and closet cut off from the ward, the lobby opening directly into the ward. I, however, do not approve of this plan of having the closets in a central ward, because it takes away from the bed-space.

2492. In King's College, are there special gynecological wards?—No; they used to do picked gynecological operations and ovariotomies, but they all died.

2493. But what do they do now?—They hire a cottage outside.

2494. And do not perfom them in the Hospital at all?—No, ovariotomies are not done inside at all. Dr. Playfair got the Trustees to take a separate room for them, and had it specially ventilated, and had his nurses sent down to it. That is a special ward in a special sense.

2495. What about grave cases now?—Listerism has been a very great help, and they have much less mortality now than they had before.

2496. In all classes of surgical cases?—I believe so. I have not been there for seventeen or eighteen years. I have only heard occasionally of what is being done.

2497. Have you data to show that the mortality has decreased?—I see reports in the *Lancet* that lead me to think that. You will also get reports in the medical journals, with passing notes, that tend to show that the mortality is decreasing. I am not in constant communication with the authorities there. I do not know if my old friend Dr. Roberts, who succeeded me there, saw the beginning of the antiseptic treatment.

2498. You spoke of the disadvantages of having no urinal separate from the watercloset?—Yes.

2499. What is your idea?—I do not see anything on that plan. There is the urinal in this corner and the watercloset in that.

2500. Do you know whether that is generally approved now?—They should certainly have them separate, to prevent any trouble. If you do not have them separate they cause a smell of urine.

2501. Is not a urinal about the most difficult place to keep free from smells?—Not if it is kept properly ventilated and properly managed.

2502. The "Unitas" closets are so constructed to act as urinals as well as closets, are they not?—I think not.

2503. The maker gives them out as such?—I do not think it can be used as a urinal. The proof is that when you go into the wards there is a powerful smell of urine. If they cleaned the thing out every time they urinate I would not object to it, but they do not do so.

2504. Even in this model there is a danger, is there not, if there is a pressure from the sewer on the trap and it is left for any length of time, that the water will become saturated with gas?—It will not be so long as you have ventilation going on right up to the roof.

2505. However, you approve of the ventilators?—Yes, the more fresh air you get into the drains the better.

2506. Do you know what length of pipe is closed in the system in existence in the Dunedin Hospital?—I could not tell you.

2507. You know there is a main shaft?—Yes, I think so.

2508. Well, the distance that would be closed would be the distance from the main shaft to the baths?—Yes.

2509. But you do not know whether that distance is closed in the drains?—No, I do not.

2510. *The Chairman.*] And supposing the air-shaft was also used as a down soil-pipe?—I think it is not safe. Buck recommends it, but I do not think it is right.

2511. Under existing circumstances, would a smoke test show in the Hospital?—I cannot tell you that because I cannot tell you the action of the drains.

2512. *Mr. Chapman.*] Now tell me this in a general way: Have you gone over other hospitals in New Zealand and found them better in this respect than the Dunedin Hospital?—The Wellington Hospital is better, I think, in its general arrangements. There is less crowding, and the nursing system is very good. It is on a sort of pavilion system, off a corridor, and the ventilation is good. I did not go into the drains, and I do not know what they are like.

2513. I suppose Oamaru is too small to form any conclusive opinion from the figures in connection with its death-rate?—Yes.

2514. Were some alterations made in it recently?—In 1883, after the outbreak of sewer-gas.

2515. And has the Hospital been much the same since?—I have not had much experience of it from that time. The Trustees would not agree with my ideas of the Hospital buildings, and I resigned, and have had nothing to do with it since.

2516. You do not consider it is satisfactory now?—No. It might be a great deal better than it is.

2517. I think it could be. The death-rate in 1887 was 10·24, and in 1889 it was 11·3?—It is too high.

2518. Now, you have spoken about the mortality that ought to exist in the colonies as compared with the Old Country. The mortality not only in New Zealand, but in all the Australian Colonies, is lower than that of England?—I do not know anything about the colonies except New Zealand, but I should expect it to be lower than elsewhere.

2519. Have you been able to find a hospital in the colonies in which this low death-rate you

speak of exists?—I have visited only the Wellington, Oamaru, and Dunedin Hospitals. I have experience of no others.

2520. *The Chairman.*] You know nothing of the Christchurch Hospital?—No.

2521. *Mr. Chapman.*] So you do not know where to find this low rate of mortality you speak of?—No. I say that the death-rate ought to be low.

Mr. Solomon: You have it in Wellington.

2522. *Mr. Chapman.*] It was only one year. (To witness:) Do you know of hospitals in the colonies where erysipelas has not occasionally arisen?—I do not know that I do. In the best regulated hospitals it might arise occasionally. It might be brought in from the outside by visitors.

2523. You say that in a hospital in the condition in which you find the Dunedin Hospital you would be chary of conducting operations?—I should. Others have expressed the same opinion.

2524. But do you know that, as a matter of fact, the number of operations of the most difficult kind has increased constantly of recent years?—That is because the doctors have been encouraged by the great advance made in sanitary science; and seeing these operations being done in thorough safety and with such splendid results, with the aid of antiseptic precautions, I have no doubt the surgeons here have taken similar operations in hand, using the antiseptics.

2525. Has the Dunedin Hospital had a particularly bad reputation?—No, I do not think so. We have all known that its mortality has been high.

2526. That has been the general opinion of medical men?—People I have spoken to have always given that opinion about it. They say, however, that they will put up with it in the meantime: that they will do their best under existing circumstances; and that they will get a better one some day.

2527. You have spoken of special wards: do you say you think gynecological cases should have a special ward?—Yes, I think so.

2528. What other classes?—All lying-in cases.

2529. There are none of these here?—No; not that I know of.

2530. What other cases should have special wards?—I will just illustrate by the amount of air per hour per head that you want. In an ordinary medical case you want from 2,000 to 2,400 cubic feet of air per hour, but in a lying-in case you want between 3,000 and 4,000. For still worse cases, you want over 5,000 cubic feet of air per head per hour.

2531. And you cannot mix the cases up? Would you mix erysipelas with any other class of cases?—I should have them separate, and give them 3,000 cubic feet of space, and 5,000 cubic feet of air per head per hour.

2532. And phthisical cases?—Those are very unpleasant cases, but they are medical cases, and you have been asking me about special cases.

2533. Would you entirely separate them from medical cases?—I do not think I would. If you have plenty of ventilation you should be able to prevent communicating the danger. The danger of phthisis is in overcrowding.

2534. Then, you have spoken of the necessity of special wards for gynecological cases, ophthalmic cases, and other surgical cases; how many separate classes are required?—It will depend on the money you have to spend.

2535. *The Chairman.*] When you were in the Hospital yesterday, did you go into the basement?—No, I had no opportunity.

2536. Do you know anything about the kitchens?—No, I know nothing about them.

2537. *Mr. Solomon.*] Dr. Batchelor tells us that in his private practice in Dunedin for the last six or seven years he has operated on thirty-seven cases, and in not one has there been the slightest symptom of septic poisoning, while in the Hospital he has had eleven deaths accompanied by septic trouble. Knowing the condition of the Hospital, will that assist you to come to a conclusion as to its sanitary condition?—His experience confirms my own. I have never lost an operation which I performed outside. I performed all sorts of serious operations in Oamaru, and the only losses by septic poisoning were among those operated on in the Hospital. The Hospital has been built only ten or eleven years, and twenty-eight patients have been affected in this way.

Dr. Closs sworn and examined.

2539. *Mr. Solomon.*] What is your name?—Joseph Osborne Closs.

2540. What is your title?—M.B., C.M., Edinburgh.

2541. You were a student in the Dunedin Hospital before you went Home to England?—Yes.

2542. You were appointed as delegate from New Zealand to the Melbourne Congress, were you not?—It was to the Adelaide Congress.

2543. *The Chairman.*] What year?—That was in 1888, I think. That was the first Medical Congress in Australia; and then I was local secretary for New Zealand for the next Congress in Melbourne.

2544. *Mr. Solomon.*] Have you devoted any attention to the subject of gynecology?—I have, a little.

2545. And I suppose you have been through a good many hospitals?—I have seen a number in Australia and New Zealand. The Brisbane Hospital I have not seen, but I have visited the other principal ones.

2546. You have seen them principally in New Zealand?—Yes.

2547. Of all the hospitals you have seen in Australasia, which is the worst?—I should say that of the important hospitals the Dunedin Hospital is the worst constructed I have seen.

2548. Have you ever been in a hospital of the same size as the Dunedin Hospital which was worse than it is?—I do not think so.

2549. Do you consider its sanitary condition at present to be fairly satisfactory?—It is not satisfactory.

2550. Do you think the defects are slight or of a serious character?—Some of them are pretty serious.

2551. First of all, what do you say as to its structural condition—are you satisfied with it?—As regards wards, there is not a proper ward in the whole building—that is, as far as modern hospital structure goes now.

2552. What are the faults?—Well, the faults are principally in ventilation and light. The wards are only lit from one side, and the other side is a blank wall, so that perfect ventilation—that is, perfect cross-ventilation—cannot be procured.

2553. Where do you practice? I forgot to ask you that before?—In Invercargill.

2554. Are you connected with the Hospital there?—I used to be. There is no honorary staff there now.

2555. Is there any possibility of getting cross-ventilation in the wards of the Dunedin Hospital as they are built?—I do not see there is any chance of getting cross-ventilation in them.

2556. Is there any other system of ventilation, in your opinion, that is satisfactory?—Well, cross-ventilation is supposed to be the best you can get for hospital wards.

2557. What about the sunlight?—Where a ward is lighted only from one side you cannot get the sunlight all day, and it is, of course, best to get the light as much as possible all day. At present the sun shines in only at one side—over some of the patients and on the face of those on the opposite side.

2558. What do you say about the position of the patients in the Hospital?—No patient should be under a window.

2559. Are there patients here in that position?—Yes.

2560. *The Chairman.*] We have been told about cross-ventilation, but have never had it defined. Is the air admitted through the windows or does it pass through the ventilators on each side?—They are both practised, both ventilators and windows; and tubes are also used.

2561. And which do you think is preferable?—In most modern hospitals both are adopted. A natural current of air can be so regulated as not to cause draughts.

2562. *Mr. Solomon.*] Is there any system of cross-ventilation in the Dunedin Hospital?—I do not know one ward in which it is found.

2563. *The Chairman.*] You think that in the present state of the Hospital it would be impossible to obtain cross-ventilation?—Yes.

2564. *Mr. Solomon.*] The windows are the principal source?—Yes; and there is also the chimney.

2565. Do you think that in our climate in the winter those windows could be opened without causing draught?—Some days, when it is stormy and wet, you could not open them without causing draught.

2566. Did you visit the Hospital?—Yes.

2567. Did you notice the draughts?—I noticed in the front wards that the lower ventilators were open, and there was a cold draught coming in. That was what I expected.

2568. Do you think that the system of leaving windows open while the patient is suffering from chest complaint or phthisis is safe for the sufferers?—No, it is not safe.

2569. Did you notice any of those rooms in which the ventilators were not open?—Yes, No. 3, in which only one ventilator was open.

2570. What was the condition of the atmosphere?—The air was "stuffy" and close. The temperature at the coldest end was 61°, and at the fire it must have been 65°.

2571. *The Chairman.*] Was the window open?—No; only one ventilator. I do not know for certain that the temperature was 65°; I think it was about that.

2572. *Mr. Solomon.*] Was the condition of affairs in the ward healthy?—No.

2573. Ought that state of affairs to exist in a properly conducted Hospital?—It should not exist in a properly ventilated ward.

2574. Have you noticed the walls, floors, ceilings, and so on?—Yes; I noticed the floors particularly.

2575. Are they favourable or unfavourable to the reception of pathogenic germs?—They are very favourable to the reception of germs.

2576. Are the seams blocked up as authorities suggest they should be?—The seams are too wide; they should be as close as possible in the floor.

2577. And what about the walls?—They seemed to be whitewashed or sized—I could not say which.

2578. And the ceilings?—They were something the same. The authorities say care should be taken to prevent the probability of the germs being absorbed by the floors, ceilings, and so on.

2579. Does this Hospital reasonably comply with those authorities?—I do not think so.

2580. Now, your visit yesterday was for the purpose of inspection?—Really, it was.

2581. Can you tell me what is the minimum bed-space that, in your opinion, should be allowed to patients, say, in surgical cases?—In surgical cases there should be, I think, from 4ft. to 5ft. between each bed—say, 5ft.

2582. *The Chairman.*] We have always got it in the other way, including the bed?—That would be 7ft. 6in. I think there should be, at least, 5ft. between the beds, or from 100ft. to 120 square feet.

2583. *Mr. Solomon.*] And cubic air-space?—That will depend very much on the process of ventilating; but if you have proper sanitation, and a good sanitary system, perhaps about 1,800ft. or 2,000ft. If there is bad ventilation it does not matter if there was 3,000 cubic feet of space, it would be no use.

2584. Do you agree with Dr. DeLautour that the thing to be desired most is frequent change of air?—Yes.

2585. Is there any system of doing that here?—There is no system of ventilating so as to give change of air every hour or two.

2586. Did you notice for yourself the distance between the beds?—I noticed roughly that the beds were close together. There was no regular system of placing them.

2587. How close were they?—Some were no more than 2ft., and others were 3ft. That is one of the first things that strike a medical man when he goes into the Hospital—the beds are so crowded together.

2588. Generally speaking, should you say the Hospital is overcrowded?—Yes.

2589. Seriously or slightly overcrowded?—It is more than slightly overcrowded. I would suggest that every second bed be taken out of the wards.

2590. You think that would be necessary?—Yes, to give good results, considering the ventilating process they have.

2591. When the ventilation is bad you must be particular about the number of patients you introduce?—Yes, you must be very careful.

2592. Well, taking those two things together—the number of patients you found in the wards and the bad state of the air—is it a safe state of affairs, and can it be allowed to remain?—It should not be allowed to remain.

2593. Do you approve of the condition of the waterclosets and bath-rooms, and lavatories?—No, I do not.

2594. Do you agree with everybody we have so far heard, that they should be in separate lobbies, with cross-ventilation?—They should have ventilating lobbies leading into them.

2595. And is it proper that the steam of the baths should find its way into the wards?—No, that should not be.

2596. How would it affect the multiplication of germs?—The moist heat?

2597. Yes?—It would be a splendid field for them to flourish in.

2598. Generally speaking, what sort of chance of multiplying and thriving would these germs have in a surgical ward in the Dunedin Hospital?—A very good chance indeed.

2599. *The Chairman.*] Did you examine the sinks and traps?—I did.

2600. Did you observe the siphon bend in the pipe?—Yes.

2601. How much was it?—I could not say, I am sure. Perhaps it was about a foot.

2602. Was that from the sinks or from the basins?—It was in the horizontal pipe.

2603. How much air is sufficient for a pipe? Have you directed your attention to this matter?—Not particularly; there seemed to me to be no ventilation in the trap.

2604. *Mr. Solomon.*] What about the kitchens; are there kitchens attached to the wards?—No, there is no kitchen or scullery connected with any of the wards.

2605. Should that be the case?—It would be desirable to have a small kitchen connected with each of the wards.

2606. And to the nurses' room?—To the nurses' room too.

2607. We have heard a lot about the germ theory: do you agree that the presence of pathogenic germs is a source of septic poisoning?—Yes.

2608. And does their concentration or diffusion affect a ward in which they may happen to be?—The more concentrated they are the more danger is there, especially in a surgical ward.

2609. They are continually being evolved, are they not?—Yes; from soiled dressings and other means they are constantly being evolved.

2610. In the wards you have examined in which there are general surgical cases taken in hand which failed to the extent you find, and in which the condition of ventilation was such as you saw for yourself, would the germs be there in a state of concentration or diffusion?—I think they would be pretty well concentrated in an atmosphere such as I saw in No. 3 last night.

2611. Can you say whether, in your opinion or not, gynecological cases are specially liable to septic poisoning, and ophthalmic cases as well?—They are, certainly.

2612. Do you think a surgeon could operate in abdominal cases in the Dunedin Hospital, as it is at present, with confidence?—He would be uncertain as to the result of his case, and could not do it with confidence. He would have to be prepared to meet complications that would not be expected in a healthy state of affairs.

2613. By what would these complications be caused?—Probably by the unhealthy state of the wards—that is to say, if an operation was not carried out in proper style and with strict Listerism.

2614. Would it follow that, although there was a possibility of septic trouble from the insanitary condition of the wards, that would arise in any given case?—I scarcely understand you.

2615. We will put it this way: There is a fear of septic poisoning arising?—Yes.

2616. And if strict Listerism was carried out, might that be avoided?—If Listerism in its entirety was carried out it might be avoided.

2617. There is also a certain danger of septic trouble?—Yes.

2618. And in the condition of the Dunedin Hospital just now that danger is intensified?—Yes.

2619. Is this consistent with the condition of the Hospital: that an operator should go on for months, and get perfectly good results, and at the end of that time get two or three cases go wrong, for which he would not know how to account?—That experience would be rather unusual.

2620. I mean to say as affairs are now?—It is possible, in the present condition of affairs; cases might go on all right, and then there would be an outbreak of septicæmia.

2621. Yes. Now, do you know Dr. Batchelor?—Yes.

2622. As a practitioner?—Yes.

2623. Is he careful?—Yes.

2624. And skilful?—Yes.

2625. Supposing you find out that in a particular week in his private practice he performs three serious operations, which all go well; that in that same week he performs three lesser operations, all of which develop septic symptoms; and that at the same time four cases of erysipelas arise in the Hospital, do you say that that is consistent with your idea of the sanitary condition of the Hospital?—It is quite consistent that septic mischief should break out, especially in cases of abdominal sections.

2626. What effect do you think the conditions you find exist at Dunedin Hospital would have on the length of stay of patients in the Hospital?—It would prolong their stay considerably in some cases, I should say.

2627. Now, do you think the additional risks the patients run in consequence of this state of affairs are slight or appreciable?—They are of an appreciable character. Certainly they are of a more than slight character.

2628. *The Chairman.*] You say the conditions would necessarily increase the length of stay of the patients in the Hospital?—Yes.

2629. Can you indicate to what extent? Your reply might help us in founding a surmise of what is the extra cost in the management of the Hospital?—Well, perhaps instead of a case coming out in three weeks it might not come out in six weeks or even eight weeks.

2630. Then, it doubles the cost of management?—It would in that case. There are such cases as knee-joint mischief, in which, if suppuration takes place, the individual might not only stay a good many months, but lose his limbs, perhaps his life.

2631. *Mr. Solomon.*] Cases of slight knee-joint coming in and developing suppuration: are they consistent with the condition of affairs you found?—If everything was right they should not happen.

2632. Might it happen in the condition of affairs there now?—It might happen in some instances.

2633. Are the conditions you found there consistent with an unusual number of erysipelas cases breaking out?—Well, if the walls and floors are saturated with erysipelas germs it is not surprising to have erysipelas break out now and again.

2634. With the fact that the state of affairs is such as you found them, and considering that the Hospital has been in use for the last twenty-five years, in what condition would you now expect to find the walls and ceilings?—I think they should now be pretty full of germs.

2635. If this state of affairs has gone on for twenty-five years, do you think the Hospital can be in a healthy condition?—I do not think so.

2636. Do you think this Hospital could be patched up so as to make it a safe repository for surgical cases?—I believe it could be improved, but still it would be unsatisfactory. I think, from the nature of the building, improve it as much as you like, it would not be a perfect Hospital.

2637. Do you think it wise that gynecological cases should be treated in the same ward as general cases?—It is not wise, certainly.

2638. We have also heard that there are two sorts of operations—necessity and expediency; and that sometimes a surgeon thinks an operation is desirable when it is not absolutely necessary, and he has to exercise his discretion as to whether to perform it or not?—Yes, that is often so.

2639. Does the condition of the Hospital now enable you to form a fair idea of that?—Yes. In an operation of expediency I should say that if it were likely to involve the life of the patient I would not perform it in the Hospital even although I thought it desirable.

2640. Is that fair to the patient?—No, it is not.

2641. You would be deterred from performing the operation because you thought the Hospital was unsatisfactory?—Yes.

2642. No antiseptic precautions would give you confidence?—You could hardly depend on a septic treatment, for even with the best of care and the best of septic treatment you sometimes get a case to go wrong.

2643. That is, when the atmosphere is dangerous?—Yes.

2644. I suppose it is a battle of antiseptic precautions on the one side and germs on the other?—Yes.

2645. Do you think the death-rate here should compare favourably or unfavourably with England?—I think it should be much less than in England.

2646. Our Hospital death-rate?—Yes, our death-rate. The district death-rate is much less.

2647. In England it is from 25 to 30 per thousand, and here it is from 12 to 15 per thousand?—I do not think it is as much as that in some places.

The Chairman: From 10 to 11.

2648. *Mr. Solomon.*] Apart from special circumstances, what might you expect to find the death-rate in the Dunedin Hospital?—I know the death-rate is about 10 per cent.

2649. But, apart from special circumstances, supposing it were healthy, and apart from any unhealthy surroundings, what would you expect to be the maximum death-rate?—I should not expect more than 7 per cent.; and even that is a high death-rate.

2650. Under present circumstances, is it possible to have a low death-rate?—There are many things to be taken into consideration, but I think the death-rate is about as low as it could be made with all care.

2651. That is in the present state of affairs?—Yes.

2652. And you think that by proper sanitary conditions it could be reduced to certainly no more than 7 per cent.?—It might be reduced to less.

2653. But not more than 7 per cent.?—It should not be more than 7 per cent. in a proper hospital.

2654. We are told that in the Dunedin Hospital every year about a thousand patients are passed through. Do you seriously mean to say that if the Hospital was in a proper condition, not a hundred of that number but only seventy would die annually ?—Yes.

2655. So that, in other words, the unsatisfactory condition of our Hospital accounts for thirty deaths in a year ?—According to that reasoning it would.

2656. I suppose you have thought it over ?—Yes.

2657. And you do not say it rashly ?—No ; I have considered the matter.

2658. Now, do you agree with Dr. Batchelor's first complaint—that there are defects in the sanitary condition of the Hospital ?—Yes.

2659. Do you agree with his second complaint—that these defects are of so serious a character as to be a source of grave danger to the inmates, and call for immediate remedy ?—Yes.

2660. Dr. Batchelor wishes me to ask you whether, in gynecological cases, it is safe for an inexperienced surgeon to examine a patient and pass a sound ?—Certainly not an inexperienced surgeon.

2661. What is the danger of that ?—In what case ?

2662. In cases of ovariotomy ?—Certainly not ; he might do a great deal of mischief if he were to rupture the tube. It might mean the life of the patient.

2663. *The Chairman.*] Would it be possible to hold a consultation in a case of that kind without permitting the others to examine the patient ? I mean, would a consultation without examination be of any value ?—It is possible to hold a consultation, but it would be out of the question to allow a great number of persons to examine the patient. Of course, the patient has to be examined.

2664. *Mr. Chapman.*] A consultation does not mean that every man has a separate try ?—If they do not so they must depend on what is placed before them on hearsay.

2665. He must depend on an experienced man ?—He must go entirely by his opinion, so he may as well not be there.

2666. You have visited all these hospitals in Australia ?—Yes.

2667. Have you studied their death-rates ?—No.

2668. Can you tell me the death-rate of any one of these superior hospitals ?—No.

2669. Do you know whether the death-rate over there is higher than in Dunedin ?—I do not know.

2670. Take Melbourne for instance ?—Well, it may be higher, if you take climatic influence into account.

2671. Take the relative death-rates in districts. Do you know what are the relative death-rates in Australia ?—No.

2672. Then, we may take it that that is a subject you have not specially studied ?—Yes.

2673. And if you compare the death-rate in New Zealand and the Old Country, can you come to the conclusion that it is higher here ?—Yes.

2674. It is not singular to Dunedin, is it ?—Dunedin stands about highest on the list.

2675. For what ?—For death-rate.

2676. Among the hospitals in the colony ?—The hospitals in New Zealand—that is, taking the four centres.

2677. Do you know about your own district ?—It is the healthiest in New Zealand.

2678. Have you looked into the death-rate in Invercargill ?—Yes.

2679. And what is it there ?—It is far too high.

2680. What year were you connected with the Invercargill Hospital ?—About three years ago I left it. I was connected with it for four years.

2681. Then, that would be about the beginning of 1884 or 1885 ?—From 1883 to 1887.

2682. Now, listen to these figures. I do not say you had anything to do with them. In 1885 the death-rate was 5·3. That is reasonable ?—Yes.

2683. In 1886, it was 8·7 ?—Yes.

2684. And in 1887 it was 15·06 ?—I think there must be some mistake there.

2685. I will not vouch for the figures ; they have been handed to me. There is an honorary medical staff in the Invercargill Hospital, is there not ?—There never has been an honorary medical staff connected with the Hospital, only a consulting staff.

2686. In 1888 the death-rate was 10·9, and in 1889 it was 9·5 ?—You must take into consideration that Invercargill has one of the worst-built hospitals in New Zealand.

2687. But it was no worse in 1885 ?—It has been improved.

2688. And the death-rate increased in consequence ?—It has gone down again.

2689. It has a detached fever ward ?—Yes ; but that is only for the last two years.

2690. Have you given any special attention to the question of hospital construction and management ?—Not as to its management, but wherever I have been I have paid attention to construction.

2691. By the way, where did you receive your medical education ?—In Edinburgh.

2692. How long have you been in practice ?—Eight years.

2693. Did you hold any position in Edinburgh ?—No. I held a position in West Cumberland Asylum for several months.

2694. Have you compared Dunedin with Auckland ?—I think the death-rate here is a little higher than in Auckland.

2695. Have you compared it with Christchurch ?—It is higher than Christchurch.

2696. But comparing the Hospital with Auckland, do you say Auckland is thoroughly bad ?—No, not so very bad.

2697. Not so bad as Dunedin ?—Certainly not.

2698. Then, you say Dunedin is worst ?—It is the worst of the four hospitals.

2699. Now, going back two or three years: if you find the death-rate lower in Dunedin or about the same as Auckland, and three years ago lower than Wellington, what do you say?—That is because it might not have been so saturated four or five years back. Perhaps it is only in the last few years that the defects in the Dunedin Hospital have been so unsatisfactory.

2700. Do you derive your judgment of it being insanitary from the percentage of death-rate?—Partly from that and partly from what I have seen.

2701. When did you come to the conclusion that Dunedin Hospital was unsatisfactory?—Years ago.

2702. Then, years ago you would perform operations there in expediency cases?—You have to take a good many things into consideration.

2703. You told us you would not perform operations of expediency there.

Mr. Solomon: He said now.

2704. *Mr. Chapman.*] And you formed your conclusions as to its sanitary condition years ago. Did you come to the conclusion years ago that it was an unsafe place in which to perform operations of expediency?—I never gave it such a thought.

2705. Do you know of any one ever giving it such a thought?—I do not know.

2706. Then, that is your opinion that you have come to quite recently?—What do you mean by recently?

2707. I want to know from you?—Several years ago.

2708. Then, several years ago you came to the conclusion that it was an unsafe place in which to perform operations?—Yes.

2709. Do you know any one else who came to the same conclusion?—I do not think I do.

2710. Was it the opinion of the medical staff, who have been cutting and slashing away there for years?—My conclusion is not their conclusion.

2711. Do you think your conclusions chimes in with theirs?—Not at all; mine are independent—quite independent.

2712. Then you are playing a "'lone" hand? Apparently Dr. Batchelor has not held it, because he has performed these operations up to last month?—I have nothing to do with what Dr. Batchelor did.

2713. Did you ever consult with any of these gentlemen as to whether the Hospital was safe or not?—No.

2714. And when did you look at the question critically?—After I came back to the colony I saw the great difference between the English hospitals and ours.

2715. *The Chairman.*] When did you come back?—In 1882. When I came back from Australia my previous opinions concerning the defects in the Hospital were only confirmed.

2716. *Mr. Chapman.*] How long were you in the Old Country?—Three years.

2717. *The Chairman.*] Did you go over all the Hospital yesterday?—I was not all over it yesterday, but I was all over it some time ago. I am very well acquainted with it.

2718. Do you know the basement?—Yes.

2719. Do you know the kitchen?—Yes.

2720. Do you consider them satisfactory?—I have not been in them lately. They may be all right, but I do not know.

MONDAY, 1ST SEPTEMBER, 1890.

Dr. MAUNSELL sworn and examined.

2721. *Mr. Solomon.*] What is your name?—Henry Widenham Maunsell.

2722. What is your medical title?—M.D. of Trinity College, Dublin.

2723. Are you registered on the roll of practitioners for New Zealand?—Yes.

2724. How long have you been in practice in Dunedin?—Over twelve years.

2725. How long have you been associated with or been a member of the Honorary Medical Staff of the Dunedin Hospital?—About twelve years, I think.

2726. Do you consider that the sanitary condition of the Dunedin Hospital is satisfactory at the present time?—No, it is not; but it is much more so than it used to be.

2727. Will you kindly take that volume of "Buck" into your hand. First of all, I would ask you is the Dunedin Hospital built on what is called the "block" system?—Yes, it is built on the block system. It is a building that was never intended for a hospital.

2728. In your opinion, is it suitable for a hospital?—I think that no building is suited for a hospital unless it is on the pavilion system, which consists of a number of isolated wards; and it is better that it should be built of one story only. The wards should be separated from each other, if there is sufficient space, by a space of three times the height of each ward, and they might be connected one with the other by means of an open asphalt walk.

2729. They should not be covered in?—No. The basement should be of some permanent material, as of brick, concrete, or stone, and elevated about 6ft. from the ground. This basement should be open all round. The basement underneath should never be used for cooking or for stores, but merely for the purposes of ventilation and heating. And the basement should be higher than the surrounding ground.

2730. That is, the basement of the Hospital?—Yes. The upper portion of the building should be constructed of wood, with double walls, for the purpose of ventilation in the first place—for the purpose of keeping the building warm in the winter and cool in the summer. As regards the advantages of the pavilion system, I may say that the great advantage is that, while you have less sunlight, you have a perfect system of cross-ventilation, which you cannot have in the corridor or block system of hospital construction.

2731. Please turn to page 756 of "Buck," and tell us how he illustrates your argument?—I can tell you without looking at the book, because I might confuse myself. The block system is the system adopted by most of the oldest hospitals in the Old Country, and the reason of its adoption was that they generally utilised as hospitals old, unoccupied buildings, convents, and sometimes churches.

2732. What is the objection to it?—The great objection to the block system is that there is an agglomeration of buildings, all opening perhaps into a central hall, as here, so that the air which pervades one ward will pervade all the wards, and if one ward becomes contaminated, the wards throughout the hospital are liable to become contaminated also. That is the great danger of the block system, and also of the corridor system. You cannot have perfect cross-ventilation either in the block or in the corridor system. The air which you generally get under the block system is what is called "hospital" air. If there should happen to be only one septic case in the institution, the whole air of the institution may become infected from that case. Under the system that has been adopted in the Dunedin Hospital all the wards open into a central hall, and the air is conveyed by means of a number of gratings or ventilators near the ceiling of each ward from this central hall, so that what is called "hospital" air is apt to pervade the whole building. Besides, you cannot isolate a ward perfectly under either the block or corridor system.

2733. We have been told that the pavilion system provides good light all the day—gives the morning and afternoon sunlight?—By it you have the sunlight at some part of the day; you have it on one side of the building in the morning, and on the other side in the afternoon; and for a portion of the day you would have it flooded with sunlight.

2734. Is it possible to have that in this Hospital?—No, it is impossible.

2735. Do you approve of the site of this Hospital?—The site is a convenient one—convenient for the patients, and for the friends of the patients, which is an essential thing. It is convenient for the surgeons who attend the Hospital, and it is convenient for the Medical School. It is also a convenient site, because it is sufficiently large to admit of the erection on it of a hospital on the pavilion system. We have got five acres of ground there, which is quite large enough for a pavilion hospital, which is supposed to be the most perfect system of hospital you can have. We have got ample room for a hundred and fifty patients.

2736. You are connected, are you not, with the Medical School of the Otago University?—Yes.

2737. You are a lecturer at the University?—Yes, the Lecturer on Surgery. I think that the connection of the Medical School with the Hospital has been of great advantage to the Hospital, and my reason for saying so is this: it has shed a very intense light on the defects of the Hospital, that perhaps would not have come prominently before the public if the Hospital were not connected with the Medical School. It has certainly shed what I might call a burning and shining light on those defects, and, while not magnifying them, has brought them very prominently forward. The work done in a hospital connected with a medical school must be thorough work, and in accordance with the most advanced medical and surgical science, and no work can be thorough in a defective hospital.

2738. Can you do thorough work in the Dunedin Hospital at present?—You cannot do any thorough work unless you have a perfect hospital, because, I say, if you have the greatest medical and the greatest surgical skill in the world, and at the same time have the best nursing system in the world, together with the best surgical appliances and the best food attainable, it will avail little if you have bad sanitary conditions surrounding your hospital.

2739. Now you have told us that you think that the sanitary conditions of the Dunedin Hospital are unsatisfactory? Do you think that the defects which exist in its sanitary condition are trivial or serious?—I think that the defects are most serious. I know from time to time we have been urging on the Trustees to make extensive alterations, and, knowing the pecuniary difficulties that the Trustees have always had to contend with, we should not have thought of urging these changes if we had not thought that they were absolutely necessary, because we knew that the Trustees' difficulties are purely pecuniary ones. We have found that the Trustees are quite as anxious for these changes as we are ourselves, and that the only difficulty which has presented itself to them has been the pecuniary one. It has been simply a matter of pounds, shillings, and pence. I was connected with the Trust myself for twelve months, and I know the earnest way that the Trustees considered every question that was brought before them. During the period that I was a member of the Trust one of the best works in connection with the Hospital—the building of the operating-theatre—was carried out. That was the only creditable part of the institution, and the only place which we bring strangers to see. We are really proud of it, and the Trustees are proud of it, and it is a monument of which they may well be proud, yet we were abused up hill and down dale by the whole Press of the place. But I am pretty thick-skinned myself, and but for that I should possibly have been inclined to have left the Trust on account of the abuse we met with.

2740. Do you approve of the construction of the flooring and walls of the wards as they are at present?—As regards the flooring of the Hospital it should be made non-absorbent, and of the hardest wood.

2741. What about the state of the floors now?—They are full of holes, very rough, and not closed in any way as they should be.

2742. Do they discourage or encourage the collection of germs?—I should say that they are pretty well saturated with microbes—with pus-globules.

2743. And the walls?—The walls are very absorbent, with the exception of about four or five feet up from the floor that has been painted and varnished, but the rest of the walls have not been plastered.

27744. I suppose you agree with the general concensus of opinion which we have had during this inquiry, that the presence of pathological organisms in the atmosphere is a source of danger to the patients?—Yes, they always run a certain amount of risk.

2745. And that the more concentrated the germs are the greater the chance of infection is?—Yes.

2746. Now in the present condition in the Dunedin Hospital, with the system of ventilation that is in vogue there, with the fact that these absorbent walls have been standing there from twenty-four to twenty-five years, would you expect to find these organisms concentrated or diffused in the atmosphere there?—I should think that they would be found in the plaster on the walls, and probably in the ceilings.

2747. In what condition would you expect to find the air of the wards?—If the wards were at all crowded the air would be bad.

2748. Are the wards crowded?—Yes, there are too many patients in each ward.

2749. Have you formed any conclusion as to the amount of square space which each patient should have?—Some of the Hospitals at Home—Leeds Infirmary, for instance—have 3,000ft.

2750. What is the cubic space per patient?—I think that in surgical wards, that is, where burns and similar wounds are treated, it is well to have 3,000ft. cubic feet for each patient.

2751. And what is the superficial space which each patient should occupy?—From 100ft. to 120ft.

2752. What space do you think there should be between the beds? Have you thought about that?—3ft. or 4ft.

2753. I find that most of the authorities say that, including the bed itself, which is 2ft. 6in., the space between the beds should range from 8ft. to 10ft. Will you please look at the passage in "Buck" which I call your attention to? Now, in the Dunedin Hospital, we find that instead of there being from 2,000 to 3,000 cubic feet of air-space, the most that we can possibly get is 1,300ft. Is that at all sufficient under ordinary circumstances?—Certainly not, for a surgical ward. I see that "Buck" gives 8ft. per bed for ordinary cases and 10ft. per bed for surgical cases.

2754. We find that in the Dunedin Hospital there is only a bed-space of 5½ft., and that instead of from 100ft. to 130ft. of superficial space there is very considerably less. Ought they to be more or less particular about not crowding the beds, when the ventilation is so imperfect as these conditions show it to be?—They should certainly be most particular.

2755. Do you think that any of the surgeons can operate in the Dunedin Hospital at the present time with confidence?—During the past seven weeks I do not think there have been any operations at all.

2756. That might be since Dr. Batchelor has raised a scare among you all?—Not at all; It has been owing to the occurrence of erysipelas and a number of septic cases in the Hospital.

2757. We will talk about yourself then, and we have been told that you are the ablest surgeon here. For the last month or so, or for any time during the past eighteen months, have you operated with confidence in the Dunedin Hospital?—Well, any operations that I have performed have been done with the greatest precaution, always with regard to antiseptic treatment.

2758. Have you realised that there was additional danger of septic poison from the surroundings of the Hospital?—There is always a certain amount of danger if you have imperfect ventilation in a hospital built on the block system.

2759. Have you noticed in winter time anything about the smell of the wards?—On a very cold day, when the windows are nearly all shut, the air in the wards is always oppressive, and the same thing is noticeable at night or in the early morning, simply because the windows are all closed.

2760. Ought such a state of affairs to exist?—No. I think that the ventilation of the wards should go on both day and night, so that there should be a constant change in the air.

2761. Is that practicable here?—Certainly not, in cold weather.

2762. I suppose it necessarily follows that the dangers which arise from the present conditions are intensified in the winter time?—Yes, they are in the winter time. Besides, I think that we should have the ventilation quite as perfect at night as through the daytime—more so, in fact, as all the windows should be closed during the night.

TUESDAY, 2ND SEPTEMBER, 1890.

Dr. DERENZI sworn and examined.

2763. *Mr. Solomon.*] What is your name?—Arthur DeRenzi.

2764. What are your medical titles?—I am a member of the College of Surgeons, England, and a licentiate of the Society of Apothecaries, London.

2765. You are at present House Surgeon of the Christchurch Hospital?—I am.

2766. How long have you occupied that position?—For nearly three years.

2767. During your present visit to Dunedin have you had occasion to inspect the Dunedin Hospital?—I have.

2768. Have you inspected it on more than one occasion?—Yes, on one occasion before my present visit.

2769. Your present visit to Dunedin was for the purpose of giving evidence before this Commission?—Precisely so.

2770. Did you make your visit last night or this morning?—This morning.

2771. Will you please tell us what was the state of affairs you found there. In your opinion, is the Hospital satisfactory from a sanitary point of view?—I consider it is not satisfactory.

2772. Speaking generally, you found that there are defects?—I did.

2773. Are the defects which you found to exist trifling, or serious?—In my opinion, they are very serious.

2774. How does this Hospital compare with the Christchurch Hospital?—Very unfavourably, I think.

2775. In the first place, do you approve of the plan of construction of the buildings?—I do not.

2776. We have been told that the Dunedin Hospital is built on what is known as the block system, is that so?—It is.

2777. Do you consider that satisfactory at the present time?—No, I do not.

2778. I suppose you approve of the pavilion system?—I do.

2779. In the present construction of the building is there any efficient way of lighting the wards?—In my opinion, the wards are not properly lighted. There is not sufficient light in some of the wards.

2780. We have been told, for instance, that in each ward there is a blank wall along one side of the ward, is that objectionable?—I think it is objectionable.

2781. Did you notice the construction of the floors, walls, and ceilings?—I did.

2782. In your opinion, are they constructed so as to favour or discourage the collection of pathogenic germs?—The floors are certainly calculated to favour the harbouring of disease. The walls and ceiling, if properly attended to, and if distempered frequently, I should have no objection to.

2783. As to the condition in which you found them to-day, do you think that they are safe?—No, I do not.

2784. Did you notice the ventilation in the wards?—Yes.

2785. Perhaps at this stage it would be convenient if you let the Commissioners see the sketch that you have brought with you. [Sketch produced.] This sketch, I understand, is of one of the wards in the Christchurch Hospital?—Yes.

2786. *The Chairman.*] In which you consider that the ventilation is well arranged?—Yes.

2787. *Mr. Chapman.*] Is it a one-storied building?—Yes. The height of the ward is 22ft., and the windows, which are 2ft. 9in. from the floor, run up to 9ft. 11in. and to 10ft. 11in., so that the total height is a little over 13ft. The little square holes are ventilators, which connect directly with the "trunk." These ventilators are 18in. by 9in. Each of these "trunks" contain steam-pipes. The building itself is raised about 5ft. above the ground. The "trunk" lies immediately in the line of these ventilators, and the steam-pipes lie in the same line as the "trunk." The steam-pipes have open heads, consequently there is a low pressure which connects with the outside air. There is a slide-door between each of the beds, giving communication direct with the open air, as it may be found necessary to do so. This ward is twelve years old. The temperature of the ward falls according to the temperature outside. The temperature of the medical wards is kept at 64°, and of the surgical wards at 67°. There are twenty beds, ten on each side, and the space is 6ft. 8in. per bed. We keep the beds full, and last year we were overcrowded in these wards.

2788. *Mr. Solomon.*] Have you made any calculation what square and what cubic space you had?—Everything can be calculated from the plan.

2789. But you have not done so?—No; I had no reason to do it.

2790. You have spoken about having ventilators under each bed. What are these things down the centre of the ward?—They are ventilators, only they are much larger, and they run right down the centre between the beds. They are 2ft. by 1ft., and have steam-pipes just the same as the others. They can not only be cut off, but it can be done gradually. They are controlled very nicely. It is not at all necessary to use the windows as ventilators. The wards are perfectly ventilated by these means, and I find them perfectly fresh.

2791. *The Chairman.*] If it is necessary to use the windows, can they be used?—As a matter of fact, in fine weather days we have the windows open.

2792. *Mr. Solomon.*] I see that there is a window for each bed, on each side of the ward?—The upper window, which opens, is 8ft. by 2ft., and is divided into two.

2793. *The Chairman.*] That is 8ft. by 2ft., divided into two sections?—Yes. There are small lower windows, which do not open, which simply allow a patient to look out as he lies in his bed.

2794. These are below the large windows?—Yes. In the ceiling there is a large ventilator 6ft. square. There are several of them, and they are covered in by fretwork.

2795. How much is cut off: half the sectional area?—Not so much as that. There is a ventilator 12in. square at the closet end of the ward, and there is another one 18in. square. There is a flue 12in. by 6in., which goes into the belfrey. The waterclosets, which are cross-ventilated, are flushed automatically, and there is a special provision for the escape of steam from the baths, there being a ventilator 9in. by 6in., while there is a similar ventilator on the other side. The cost of this ward was about £3,000; but it was built at a time when timber and labour were very dear. Two wards exactly similar were built, but the one was cheaper than the other. The cheaper was of concrete. I do not know what it cost, but it cost very much less.

2796. It has been suggested here that the ward should be half as long again, and contain about thirty beds?—I would not like it. I prefer not to have the ward any larger than ours, which is quite large enough.

2797. In your opinion, does the plan which you have just explained provide a satisfactory system of ventilation?—It is quite satisfactory.

2798. I notice that in your ward you have ten beds in a total length of 68ft., which gives a space of 6ft. 8in. per bed. Do you think that that is sufficient?—Quite sufficient, with the ventilation that we have.

2799. It seems to be a complete system of ventilation that you have?—It is a very complete system.

2800. Did you notice the ventilation in the Dunedin Hospital?—I did.

2801. Do you think that it is at all satisfactory?—I do not.

2802. Is there any systematic plan of ventilation in the wards of the Dunedin Hospital?—There appears to be none.

2803. We have been told that the primary object of such a complete system of ventilation is that the air of the ward should be regularly renewed?—It should be renewed continually.

2804. Do you think that the system of ventilation in the Dunedin Hospital renders it at all possible that the air can be renewed?—From what I experienced to-day I should think not. All the available arrangements for ventilation appeared to me to be defective; and in my opinion the results are not satisfactory.

2805. At what time to-day did you visit the Hospital?—About 10 o'clock this morning.

2806. Were the wards fresh?—They were not fresh.

2807. At that time do you think that all the available ventilators were open?—They were, for I examined them carefully.

2808. You noticed how far the wards were merely not fresh, and how far they were offensive?—The smell was decidedly offensive in some of the wards.

2809. For instance, there was one ward in which there were only two or three patients: did you notice that?—In a large ward there was only one patient, and in another there was not an occupant.

2810. *The Chairman.*] Was that No. 5 ward?—I think it was.

2811. *Mr. Solomon.*] Was the air in that ward disagreeable?—It was very unpleasant.

2812. You noticed, did you not, that the principal mode of ventilation is by means of the windows?—Yes, they are the principal means, but there are other ventilators.

2813. Every one must know that the evils which you noticed must be intensified if the windows had to be closed?—I should certainly think so.

2814. Do you think it practicable, in a climate like we have in Dunedin, to open these windows in winter?—I should think that it is very undesirable to do so.

2815. Would any danger arise from doing so?—Particularly in the medical wards, where I should think that there would be considerable danger.

2816. For instance, to cases of phthisis, chest complaints, and so on?—It would be very injurious to such cases.

2817. Do you think that the atmosphere which you found to exist in these wards was a healthy atmosphere for patients?—I do not.

2818. Did you notice the appearance of the patients?—I did remark on their appearance.

2819. What was their appearance generally?—They appeared to have a more or less hectic appearance.

2820. Do you trace any connection between their appearance and the state of the wards?—The atmosphere which I found this morning would have a great deal to do with their appearance.

2821. Did you notice or inquire whether the wards were overcrowded or not?—Yes, I did. I observed the number of patients in each ward.

2822. Do you think they were overcrowded?—It appeared to me that the beds are far too close. There are certainly far too many, considering the small number of ventilators there are in the wards.

2823. Do you think that the evils which you have told us exist from the want of ventilation can be counteracted by putting a smaller number of patients in the wards?—I do not, because in one of the wards I went into, there was only one patient, yet I think it was the most offensive one I was in.

2824. Do you think, with a defective system of ventilation, that it is necessary that they should be more careful that the wards should not be crowded?—Decidedly so.

2825. What number of patients do you think it safe to put into the surgical wards of the Dunedin Hospital?—I do not consider, in the present state of the Dunedin Hospital, that you should put in any patients at all.

2826. But we know that we have had patients, and have got them there now. What is the number of patients which you can with safety put in a surgical ward of the Dunedin Hospital at present?—I cannot say "with safety," but I should think that nine patients would be quite enough.

2827. I mean with the present system of ventilation?—The air of the wards is very bad, and it is very difficult to say what number would make it absolutely poisonous.

2828. *The Chairman.*] Anything beyond nine might make the air poisonous?—It certainly would be very injurious.

2829. *Mr. Solomon.*] Do you think that with the Dunedin Hospital built as it is you can secure an efficient system of ventilation here at all?—I should hardly like to express an opinion on that, as to what might be done, but I should think that it would be difficult indeed to insure thorough ventilation in these wards.

2830. To do so one would necessarily be driven to the conclusion that it is impure air which would be driven into the main central hall?—I think so.

2831. Do you think that would be desirable in any view of the case?—Hardly; but it is a very difficult matter indeed.

2832. Do you approve of the position of the waterclosets?—I do not.

2833. Nor of the bathrooms, and so on?—Certainly not.

2834. Are they sources of contamination?—They are sources of danger to the patients, I should think.

2835. Did you also notice that there are no kitchens attached to the wards?—I did.

2836. Do you approve of that?—No.

2837. What do you think that there should be?—Every ward should have a small kitchen attached to it.

2838. What about the drainage system of this Hospital; did you go into that carefully?—Moderately so.

2839. Do you approve of it?—I do not.

2840. Did you notice whether the drains were open for inspection?—They were not.
2841. How does that compare with the system in Christchurch?—In Christchurch every few feet of the drains are open for inspection.
2842. Do you think that that is necessary?—I think it is absolutely necessary in a hospital.
2843. In case of anything going wrong with the drains?—So that they may be seen to at once and inspected.
2844. If they are not taken in hand they may become a source of danger?—Undoubtedly.
2845. Did you notice the back tower ward, and the position of the closet there?—Yes.
2846. Where is it?—It is situate in the ward.
2847. Not at the end of the ward?—No.
2848. *The Chairman.*] You mean the east tower?—Yes.
2849. *Mr. Solomon.*] That is the lock ward?—The closet is in one corner of the ward, and actually within the ward.
2850. *The Chairman.*] And the putting of it there is, you say, quite improper?—It is quite improper to have either a watercloset or a bathroom in a ward.
2851. Do you agree with the authorities who say that the presence in the atmosphere of pathogenic germs makes them a source of danger by infection?—Yes.
2852. We have heard that the more these germs are concentrated the greater is the danger, and the more diffused they are the less becomes the danger of infection. Do you agree that in any severe operation of abdominal section or gynecological operation there is always more danger of septic poisoning?—In every surgical operation there is danger; not only in abdominal and gynecological, but in all other operations.
2853. That is the danger which Lister's processes are used to obviate?—Yes, and they have done so to a great extent.
2854. Do you think that, in the present condition of the Dunedin Hospital—assuming the state of the wards to be what you saw, of general surgical cases being congregated there, of fourteen or fifteen patients being in the room—the risks which the patients there run of septic poisoning are materially increased by the surroundings in which they are placed?—I do.
2855. Would you be surprised to hear that from time to time various surgeons who have operated in the Hospital have found even simple wounds suppurating without apparent cause?—I can quite believe it from the nature of the atmosphere.
2856. Would you be surprised to hear that careful and experienced operators, though they have taken every precaution, have occasionally found after operation that septic trouble has arisen for which they could not account in any reasonable way?—I would not be surprised.
2857. Do you think that a surgeon could perform severe operations in our Hospital under present circumstances with anything like confidence as to results?—I do not. I would not like to have a surgical case there myself.
2858. May we take it from you that there is danger from the general surroundings—that there is serious danger?—Yes.
2859. The liability at any moment to produce septic poisoning?—Yes, certainly.
2860. Suppose you heard that although, in many of the cases I have told you of, some practitioners had found septic trouble, yet, notwithstanding this, that a great many cases had gone on all right; would that in any way alter your opinion that the surroundings were unhealthy?—It would not.
2861. Is that feasible?—Of course it is. I would not expect every case to be affected.
2862. One medical gentleman has told us that you might go on for months all right, and then get a run of cases with such results?—You might. But it is unlikely that you could go on in the present state of the Hospital without meeting with bad cases, particularly in operations of any magnitude.
2863. You could not go on for long without meeting with some bad results?—Yes.
2864. We have been told that there are two different sorts of operations—those of necessity and those of expediency, and that in the latter class of cases it may often happen that the doctor may think it is desirable, though not absolutely necessary, to operate; that he is called on to decide whether or not he should operate. Do you think that in the present circumstances of the Hospital he can come to a fair conclusion?—I should come to a conclusion not to operate in the present state of the Hospital, unless in cases of emergency.
2865. You say that you would not operate under present conditions, except in cases of emergency?—I would not.
2866. That being the case, do you think that a patient has got a fair chance while the doctor's hands are tied in that manner?—They cannot.
2867. Dr. Batchelor has also stated that there are some methods of treatment which in his opinion are highly desirable, but which he cannot avail himself of in the present condition of the Hospital, because they can only be used in good sanitary arrangements; and he illustrated his argument by mentioning the treatment by electrolysis. Do you recognise that treatment?—Certainly.
2868. He says it is a very valuable treatment, but that he cannot use it here because the surroundings of our Hospital would make it dangerous to use it, as to do so the patient would run considerable risk. Do you agree with him in that respect?—I do, in the present state of the Hospital.
2869. There is another view of the case which I shall present to you. I do not know whether you are aware of it, but there is attached to the Dunedin Hospital a medical school in connection with the Otago University. Do you think, under its present conditions, that this is a proper Hospital in which the practice of medicine can be taught?—No, I do not; certainly not.

2870. Do you think, with the surroundings of our Hospital, that the students who are turned out here will be likely to prove a credit to themselves and to us?—No, I do not.

2871. Do you agree with the authorities that have been quoted during the course of this inquiry that especial care should be taken with all the details of a hospital that has a medical school attached to it?—I certainly think so.

2872. Is the state of affairs which exists in our Hospital one that should pass muster, or do you think that it should be condemned?—I certainly think that it should be condemned.

2873. *The Chairman.*] That the Hospital in its present state should be at once condemned?—I think so.

2874. *Mr. Solomon.*] I may tell you that our Hospital has been in existence for over twenty-four years, in very much the same condition that it is in now. Would you consider after that lapse of time that with the state of affairs in the Hospital existing now it could be in anything like a healthy condition?—The Hospital at present is certainly in an unhealthy condition.

2875. Would the evils which at present affect the condition of the Hospital be likely to increase year by year, or remain much as they are now?—Be inclined to increase. I do not know that the life of a hospital ought to be so short as some people think. What I mean to say is that a hospital in a proper condition can live a much longer life than some people think.

2876. The objection to hospitals is not so much on account of the length of life as to the danger of their becoming impregnated with dangerous organisms. That is so, is it not?—So far as that goes there is very little to be feared if the surroundings are satisfactory.

2877. That is the reason which is suggested by authorities. Then you do not agree that so much force as some people attach should be given where the surroundings are unhealthy? Suppose that the surroundings are not healthy, or are such as you found in this Hospital, do you think that the remarks of the authorities which have been quoted to us would apply?—No, I do not.

2878. Do you think that it would be safe to have a long life in this Hospital?—No, I do not.

2879. *The Chairman.*] What I understand you to mean is this: that when a hospital becomes infected, then its life is done?—I do not exactly mean that. I think that a hospital that is infected can be purified to a very great extent. I know of the existence of hospitals at Home that have been condemned, but which are now in a thorough healthy condition.

2880. *Mr. Solomon.*] Do you think it is practicable, seeing the state of affairs which you found there to-day, to make a satisfactory hospital out of ours now?—I hardly think so.

2881. In the Christchurch Hospital are there special wards for special cases?—There are.

2882. For what classes of cases?—For abdominal sections there is always special wards reserved.

2883. Do you think that that is desirable?—It is highly desirable. In our Hospital there is a ward reserved for ophthalmic cases.

2884. Do you think it desirable to have special wards for special classes of cases?—I think it is certainly very desirable.

2885. You do not think that they should be treated in the same ward as ordinary surgical cases?—Certainly not.

2886. Nor do you think that gynecological cases should be treated in the same wards as ordinary surgical cases?—Certain gynecological cases I do not think will hurt much in the wards; but others ought certainly to have special rooms.

2887. Ovariotomy, for instance?—Certainly.

2888. You do not think it safe to treat these cases in a general ward?—I do not think it safe or desirable.

2889. We have been told of severe operations being performed in the Dunedin Hospital in which there was danger of a secondary operation becoming necessary; and we were told of one case in which hemorrhage set in, and of a second operation being necessary to stop that hemorrhage. We have also been told that there is no provision made for a patient being removed from the operating-room into an adjoining room where the secondary operation might be satisfactorily performed. Do you think that it is wise that a patient should, after a severe operation like this—in this particular instance it was a "Tait"—be carried along a corridor, up a flight of stairs, and taken to her bed in a ward a long distance off?—I think that it is very undesirable. The patient's bed should be brought alongside the operating-table; and immediately after the operation she should be transferred to it, and be kept perfectly quiet, and not be shaken in any way.

2890. Do you agree that the wards should be so fitted that, if a secondary operation becomes necessary, the patient should not have to be taken back to the operating-room?—It does not make much matter to take the patient back to the operating-room: there is no danger in that.

2891. If, a primary operation having been performed, it becomes necessary to perform a secondary operation, the patient being in an extremely critical condition, would it not be absolutely necessary to perform that secondary operation as expeditiously as possible?—Yes.

2892. Does or does it not follow that the surroundings of the place in which a secondary operation is performed should be of the best; and that the operator should have the best means near at hand?—They should certainly be close at hand, without having to remove the patient.

2893. You were asked a question about a light, and you referred to an incandescent lamp?—It is a Wenham lamp that we have in our operating-room.

2894. *The Chairman.*] It is a fixed light?—Yes.

2895. *Mr. Solomon.*] Suppose a patient in your hospital were to undergo a severe operation: is there any room into which he or she would be taken?—To a room adjoining the operating-room. It has folding-doors. The patient is transferred from the operating-table to the bed, that is brought alongside the table, and then taken into this adjoining room.

2896. Is there any danger from exposure during the process of removal?—None at all. The temperature is regulated.

2897. Dr. Batchelor suggests that in carrying patients from our operating-room, after a secondary operation, to the ward, there is a liability to dislodge clots of blood. That should be avoided?—Yes. If they are carried quietly it may be.

2898. If a secondary operation became necessary in your hospital where would it be performed?—In the operating-room.

2899. If we had here a similar plan to that which you have told us exists in your hospital you think it would be satisfactory?—I do.

2900. You have noticed that we have no suitable rooms adjoining the operating-room here? I have.

2901. And that here the patients have to be carried from the operating-room in the way I have described, to these wards?—Yes.

2902. Would you be surprised to hear that erysipelas has from time to time arisen in our Hospital, in different parts of the Hospital, but at the same time?—I would not be at all surprised to hear it.

2903. We have heard that five years ago the then House Surgeon reported to the Trustees that two or three cases of erysipelas arose in one week, and that he could not account for it. Is that surprising?—I do not think it is surprising, in the present state of the Hospital.

2904. What is your experience in Christchurch in regard to erysipelas?—It is very satisfactory now.

2905. I will put it in less general terms. Have you had an outbreak of erysipelas during your term of office?—I have had no outbreak of erysipelas.

2906. *The Chairman.*] How long has your term been?—Nearly three years.

2907. *Mr. Solomon.*] In the Christchurch Hospital have you any means of isolating erysipelas cases when they do arise?—There is a separate hospital—two wards, about one hundred and fifty yards away from the main building. These two wards are reserved for infectious cases.

2908. Are there any such means here?—Not so far as I have seen.

2909. *The Chairman.*] You have a special double ward?—Yes. One of the wards contains twelve beds, and there is accommodation in the wards for nurses. There is also a kitchen, and the food for the ward can be cooked there. There is no communication with the main building in any way. Suspicious cases are always removed before they show themselves.

2910. Do you disinfect in a particular way?—Yes, in every case with sulphurous acid gas.

2911. *Mr. Soloman.*] Did Dr. Batchelor point out to you the room in which he performed his gynecological operations?—Yes.

2912. What do you think of that?—I did not like it at all. I do not think it is a proper place.

2913. *The Chairman.*] That is No. 5?—No, it is the bath-room.

2914. *Mr. Solomon.*] There is a drain directly underneath it, is there not?—There is a drain-pipe underneath it, without a trap.

2915. It has been suggested that it is possible that very severe cases come into the Dunedin Hospital; and that other hospitals do not get nearly such severe cases. Might I ask if you get a fair share of severe cases in the Christchurch Hospital?—I think so, we get a very fair share.

2916. I notice that in Christchurch Hospital, out of one hundred and twenty-six cases, there were two deaths, and out of eighty-six cases in Dunedin Hospital there were six deaths, in 1889, under the subsection of "Violent Deaths." Do you think it reasonable that the surgical results in the Dunedin Hospital can be so good as they are in Christchurch, in view of the difference of the surroundings?—Certainly not. They could not be expected to be.

2917. *The Chairman.*] I see in the return for last year that in the Christchurch Hospital thirteen cases of erysipelas are put down?—But these cases were admitted as erysipelas.

2918. All of them?—Yes, they presented themselves as erysipelas cases.

2919. You think that the return is tolerably correct?—These are taken from the figures in the hospital books.

2920. In your opinion, are these statistics as published thoroughly satisfactory?—I consider them very unsatisfactory, and they are also very misleading.

2921. In what respects are they misleading?—Because the classes of individual disease become mixed up all together.

2922. What you mean is that the classification is imperfect?—Yes. Not only so, but the cases are so mixed up, that they are made to appear several times, and so become almost unintelligible. And you will find that one hospital will classify one disease under one head, while another hospital will classify the same disease under another head, and yet both hospitals will be perfectly justified in doing so.

2923. *Mr. Solomon.*] Do you get severe surgical cases in the Christchurch Hospital?—I should call them severe operations.

2924. Do you think that they would be up to the average?—I will give you a list of some of the surgical cases in the Christchurch Hospital. [Witness undertook to supply the Commissioners with a detailed list of these cases.]

2925. Do you think that a patient's stay in our Hospital can reasonably be expected to be longer or shorter than in your Hospital?—It must be longer in the Dunedin Hospital.

2926. Has it been your experience in the Christchurch Hospital that slight or comparatively slight injuries of the knee, such as we have had mentioned to us during the course of this inquiry, should, within a short time after the patient's admission, have become suppurated without any apparent cause?—No.

2927. Would you think such a circumstance suspicious?—Yes, I should. But it would be difficult to give a definite opinion without seeing each individual case.

2928. What about your abdominal sections: have you had septic results afterwards?—I have not had any since I have been in the Hospital.

2929. I mean operations which had septic results after operation?—I have had none whatever.

2930. We have been told by Dr. Batchelor that his experience has been of this character: in his private practice during the last seven or eight years he never had any death, though he performed about forty operations?—I do not say that we had no deaths.

2931. You are misapprehending my question. I mean deaths from septic poisoning. Dr. Batchelor had no deaths from septic poisoning in his private practice during that time, though he performed about forty operations; but in his hospital experience here he had eleven deaths that arose after operation, ten of them being accompanied by septic poisoning. Do you think, with the knowledge that Dr. Batchelor is a tolerably skilful and careful surgeon, as we have been told that he is, that that is at all consistent with proper conditions in the Hospital?—I think that it certainly corresponds with the conditions of the Hospital as I found them. I think that the patients are very apt to develop septic conditions in such an atmosphere, and in the general condition of the Hospital.

2932. *The Chairman.*] Does that confirm your opinion as to the unhygienic condition of the Hospital?—It does.

2933. *Mr. Solomon.*] Then, it would not surprise you under the state of affairs in the Hospital which you saw?—Certainly not.

2934. Another specialist in Dunedin has told us, in his private practice in Dunedin, he has never had one case of iridectomy accompanied by septic trouble, but that in the Hospital in one week two comparatively simple operations of iridectomy went wrong from septic trouble, while at the same time a severe operation which he performed outside got quite well. Do you think that the condition of the Hospital would have anything to do with that?—I do.

2935. Do you think that the performance of operations such as these in the Hospital would be fraught with danger?—Certainly I do.

2936. What has been your experience with regard to iridectomy?—I have had no cases of poisoning after an operation for iridectomy. Simple iridectomy cases without cataract we never expect to go wrong with us.

2937. They do well with you?—Yes.

2938. You do not think that they ought to go wrong in healthy surroundings?—No.

2939. But there is a liability for them to go wrong in our Hospital?—They would be liable to go wrong, but I do not say in every case.

2940. What about the temperature charts? Do they indicate that the average cases run the same course here as in Christchurch?—In medical cases it is much the same, but I observed that in the surgical cases the temperature is higher here than the average temperature in Christchurch.

2941. *The Chairman.*] But in medical cases they range about the same?—Yes.

2942. *Mr. Solomon.*] Do you know whether there are any cases in your Hospital that have been sent from Dunedin?—There are. I have one in now.

2943. Is it a severe case?—It is a very severe case indeed.

2944. Do you know whether it is a case of loving Cæsar more or Brutus less?—I cannot answer that.

2945. Would you be surprised to learn that for the last two years the death-rate in the Dunedin Hospital has been highest in New Zealand of the four chief centres of population?—I would not be surprised to hear that.

2946. So far as you know of New Zealand, is there anything in the surroundings of the districts to make the death-rates of our hospitals vary very considerably, other things being equal?—I think that Auckland ought to have the best record. I think it has a healthier site than any other hospital.

2947. *The Chairman.*] That is, the situation of the Hospital?—Yes.

2948. *Mr. Solomon.*] But I said all things being equal. Is there any reason why the death-rate should be higher or lower?—I should think that it would be higher in Dunedin than anywhere.

2949. From what cause?—The average temperature of the climate.

2950. Is the average temperature lower?—Yes.

2951. Do you think that in the present circumstances of the Dunedin Hospital we can fairly expect to get good mortality rates?—I hardly think that you can expect to have as good results as other hospitals on that account. I think myself that you are working at a great disadvantage.

2952. *The Chairman.*] Did you examine the kitchen to-day?—I did.

2953. How do the kitchen-arrangements here compare with those of Christchurch?—Unfavourably, in my opinion.

2954. In what respect?—Here it is in the main building and is underneath one of the wards. Our kitchen is entirely separate from the Hospital, with a corridor adjoining.

2955. Then, you do not think that it should be in the main building?—I do not think so.

2956. Anything else?—It is very dark.

2957. *Mr. Solomon.*] Did you notice the general management of the Hospital—its nursing system, for instance?—I had not much opportunity of noticing it. I just observed the nurses in the ward as I went in.

2958. Have you devoted any attention to what should be a fair death-rate in a hospital like ours?—I have not; but it appears to be a good deal higher than that of the other hospitals.

2959. Now, I want to ask you two formal questions: Dr. Batchelor alleges that "there are defects in the sanitary condition of the Dunedin Hospital." Do you agree with him?—I do.

2960. In the next place, he says, "that these defects are of so serious a nature as to be a source of grave danger to the inmates, and call for immediate remedy." Do you agree with that?—I do.

2961. *Mr. Chapman.*] I suppose your conclusion is that Dunedin Hospital is a very deadly place?—I think it is very undesirable in its present condition to have patients in it.

2962. And what would you expect? For instance, in the matter of the death-rate, would you expect to find that for a series of years it compared very unfavourably with Christchurch?—I do not know that I should altogether.

2963. What are the different conditions of your hospital from ours?—Our wards have been thoroughly ventilated.

2964. But that was done recently?—Three years ago. It has even been much improved during the last thirteen months in regard to ventilation and heating arrangements.

2965. Would you be surprised to learn, for instance, that in 1886 the death-rate in Dunedin was 9·7 while in Christchurch it was 9·4—practically the same?—I would not be surprised.

2966. And that in 1885 the death-rate in Dunedin was 9·5 and in Christchurch 9·11?—I should not be at all surprised.

2967. Or that, with an average for several years, the difference is slight?—I should not be at all surprised to find that.

2968. Can you find a reason why the death-rate at Wellington is lower than that of Christchurch?—I do not know.

2969. Why the death-rate of Wellington Hospital should be 1 or 2 per cent. less?—No; I do not understand anything about the Wellington Hospital.

2970. Suppose now that the death-rate of the Dunedin Hospital were 2 or 3 per cent. higher, would you attribute that necessarily and wholly to differences in the sanitary arrangements of this Hospital?—Not wholly; perhaps there might be other causes. Still, I consider the wards, in the condition in which I found them, are highly dangerous for patients to be put in them.

2971. Would you be surprised to hear that that has not apparently troubled the medical staff all these years?—I am surprised to hear that.

2972. You have spoken definitely as to the temperatures, as shown by the charts, being higher in surgical cases here than in Christchurch?—I have.

2973. Did you take notes when working out your averages, or is it merely a general impression?—I took cases at haphazard, which were pointed out.

2974. What sort of cases did you compare?—I did not compare any particular cases. I took a look round all the charts in the surgical cases.

2975. Then, it was not taken at haphazard?—Of course, where there was a very high temperature I made inquiries.

2976. The cases were pointed out to you?—Yes.

2977. By whom?—Dr. Batchelor.

2978. You were asked by him to look at his particular cases?—He showed me all his cases.

2979. What did you compare them with?—I compared them with our surgical cases—the average appearance of the charts in the Dunedin Hospital with the average appearance of surgical charts in Christchurch.

2980. You did not work out the figures?—I did not. I have the charts themselves in Christchurch.

2981. How long were you in the Hospital this morning?—About an hour.

2982. And it was in an hour this morning that you inspected these charts, saw the drainage-arrangements, and the various things you have spoken about?—Of course, I had not to look for these things; they were pointed out to me.

2983. You have stated that you would not like to operate in the Dunedin Hospital. Would you be surprised to learn that the medical staff of the Hospital have operated freely there?—I should be surprised to hear that they had agreed to operate, except in cases of more or less urgency.

2984. Would you be surprised to hear that the entire medical staff have operated on cases that were not of more or less urgency; and, even to take one single member of the medical staff, would you be further surprised to hear that Dr. Batchelor has from year to year performed an increasing number of operations in surgical and gynecological cases?—Yes, I should be very much surprised at him doing so.

2985. Is your knowledge of this Hospital what you have gained by to-day's examination of it?—No. I examined it fully two years ago. I made the remark at that time that the Hospital was a nice place for antiseptic treatment.

2986. To whom did you say that?—To Dr. Batchelor.

2987. Would you be surprised to hear that Dr. Batchelor has operated freely in an increasing number of cases since then?—Except it was in cases of emergency, I should be surprised.

2988. Look at this list [hands witness a return], for instance, of operations from January to August of this year?—It does not state the nature of the operations in each case.

2989. There are about thirty operations in that list. I suppose there is a fair number of abdominal sections and a fair number of operations of expediency there?

Mr. Solomon: Throughout this inquiry I have studiously refrained from attacking any one. In my opening I said I would endeavour to avoid personalities, and I have done so; but Mr. Chapman's last question is obviously for the purpose of attacking Dr. Batchelor.

Mr. Chapman: That statement is absolutely unfounded.

Mr. Solomon: I say it deliberately; that question was put with no other object.

Mr. Carew: The question goes to test the genuineness of Dr. Batchelor's evidence.

Mr. Solomon: If the Trustees think that they can meet a grave charge of this kind by casting dirt at Dr. Batchelor I am quite prepared to meet them.

2990. *Mr. Chapman.*] Are you a little surprised to hear that operations have been going on at the rate I have just mentioned—say, thirty-five operations between January of this year up to date—notwithstanding what you knew two years ago?

Dr. Batchelor: I say that that return is grossly exaggerated.

Mr. Solomon: Who made up that list?

Mr. Chapman: The house surgeon.

Mr. Solomon: Then, why does he not put it in as his own?

Dr. Batchelor: They are not my cases.

Mr. Chapman: I do not say that they are all gynecological cases, but some of them were.

2991. *Mr. Chapman.*] That list of operations seems to show that the surgeons have gone on operating pretty freely, and that they do not seem to have appreciated your objections?—But I see in this list a number of cases—as hysteria—that are not operations at all; a large number of these are not operations at all.

2992. You were asked some questions about the position of the wards and operating-room in your Hospital, and you told us that after a secondary operation is performed the patient is moved back into a room adjoining the operating-room?—Certainly not in all cases, but in abdominal cases, where it was necessary to have a secondary operation, the patient is moved back in the bed in the way I have already described.

2993. Then, in Christchurch Hospital you have such patients always handy?—Yes.

2994. And you have not to carry them any long distance?—No. I am talking now of these special abdominal cases.

2995. How is it in the London hospitals? Are patients carried long distances there?—No.

2996. In no case?—I do not know about every London hospital. I only know two London hospitals, and in them the patients were carried very short distances indeed.

2997. Are the patients told beforehand? It is generally a matter of surprise, is it not?—Yes. But I think a hospital should be ready for any emergency that may come about.

2998. Have you incandescent lamps?—No, we have gas.

2999. What lighting-arrangements have you if a secondary operation should be required?—Gas-jets. In the operating theatre there is a principal light.

3000. Is your operating-theatre similar to the one here?—Very similar.

3001. Is it a modern one?—It cost £600. But ours is not so large as yours.

3002. You have spoken of defects in the place where the gynecological examinations were to be conducted. Do you say that the drain from the bath is not trapped?—I did not see any trap.

3003. Did you examine for a trap?—I did.

3004. Could you see what the arrangements were?—That is what I complained about; I was unable to see what the arrangements were. I cannot tell you what is the condition of the drain which connects with the bath. I could find no evidence of a trap. I looked and asked for it, but nobody could tell me.

3005. Have you heard that the position of the operating-room was settled by the medical staff?—I have not.

Dr. Batchelor: That is not correct. We suggested another place altogether.

3006. *Mr. Chapman.*] Is the list of cases in your Hospital that has been handed in compiled from memory?—By going over the beds, as well as I can recollect them, but I do not think I shall be more than one or two out.

3007. You do not say how long the patients have been there?—No.

3008. Have you made any calculations to determine whether the stay is longer in Christchurch or Dunedin?—I have not, but I have read what the reports say on that subject.

3009. What reports?—The official reports of the Inspector-General.

3010. What does he say?—The reports say that the patients stay longer in the Dunedin Hospital than they do in Christchurch. To the best of my recollection that is so.

3011. I find that the proportion is this: Dunedin, 1888, 42·2; Christchurch, 37·43: Dunedin, 1889, 34; Christchurch, 35. There is not a very serious difference there?—No. But I should mention that in Christchurch there are a few chronics who have been in the Hospital for years.

3012. Might not that also be the case in the Dunedin Hospital?—But I was under the impression that there was a home here for such cases.

3013. For what class of cases?—Incurables. In Christchurch, at any rate, these cases have actually been in the Hospital for some years. There is no provision for them elsewhere. The chronics would operate in the matter of the death-rate quite infinitesimally, but the average stay in the Hospital would be affected very much.

3014. There has been a patient in the Dunedin Hospital, since October, 1885. Of course that case would spin out on an average?—We have had a man in for about eleven years, and he spoils our statistics every year.

3015. In speaking of cases that have been sent from Dunedin to the Christchurch Hospital, have you known of many such cases, or is it a particular one?—I do not know of many, but I know of some.

3016. Do you know of more than one?—Yes.

3017. Since when have you had the case that you referred to?—Since last month.

3018. Do you know on whose recommendation it was sent?—I do not.

3019. Sent direct from Dunedin to Christchurch?—Yes.

3020. For operation?—Yes.

3021. What sort of operation?—Radical cure of hernia.

3022. *Dr. Batchelor.*] Can you give me approximately the number of deaths you have had following operation?—During the last twelve months?

3023. Yes; following operation?—I had a death following an operation for removal of cancer from the tongue: do you mean a case like that to be included?

3024. Yes, take every case?—I could not be sure of the number within the twelve months, but I think we had five cases altogether.

3025. Now, in the past twelve months, how many cases of death following operation had you?—I can only recollect one such case.

3026. How many operations were performed during that time?—There is a record kept in the Hospital. Every operation is carefully noted.

3027. Can you give us any idea of the number?—Considerably over one hundred.

3028. Would you be surprised to hear that in the Dunedin Hospital, within the last eighteen months, the number of deaths in the Dunedin Hospital after operation have been somewhere about twenty-two?—I should not be surprised to hear it.

3029. *Mr. Solomon.*] I may mention that I have just got this list, though I asked for it almost three weeks ago. It shows that during eighteen months Dr. Coughtrey had 43 cases, with 6 deaths; Dr. Maunsell, 53 cases, with 6 deaths; Dr. Brown, 6 cases, with no deaths; Dr. Stenhouse, 1 case, with 1 death; Dr. Roberts, 1 case, with no death; Dr. Batchelor, 43 cases, with 4 deaths. [List handed in.] So that we find in the Dunedin Hospital, out of two hundred operations, in eighteen months, there have been twenty-four deaths. Do you think that that is at all consistent with a proper state of affairs in a hospital?—I do not; but I should like to know what these two hundred operations were.

3030. *The Chairman.*] Will you send down to the Commissioners a similar list of operations in the Christchurch Hospital during, say, the past two years?—Yes; and, if desired, will have it authenticated before the Resident Magistrate. I will send a certified copy of our operation-book.

Dr. F. Truby King sworn and examined.

3031. *Mr. Solomon.*] Your name is?—Frederic Truby King.

3032. What are your medical titles?—M.B., C.M., and B.Sc.

3033. Of Edinburgh?—Yes.

3034. You are at present in charge of Seacliff Asylum?—Yes.

3035. In the course of your medical studies, have you devoted any attention to the question of hygiene?—Yes; I am a Bachelor of Science in Public Health.

3036. Have you lately had occasion to examine the Dunedin Hospital?—Yes; I was asked to-day to see the Hospital, but the examination was a comparatively superficial one, occupying only two or three hours.

3037. *The Chairman.*] Are you well acquainted with the Hospital?—I have been in it several times before this morning, but for less than half an hour each time.

3038. *Mr. Solomon.*] I understand that you are in a position to give us a certain amount of information as to the Hospital?—In regard to any points upon which I shall give information I shall have satisfied myself.

3039. Do you consider that the sanitary condition of the Hospital, as you found it, is satisfactory?—No.

3040. Will you please tell us, generally, what are the conditions which you consider to be essential to a fairly satisfactory hospital?—I may give you a general reply. I consider that there should be a reasonable approximation to the conditions that have been ascertained to be essential for the perfect preservation of life and health in any individual. In addition, there are, of course, special requirements connected with hospital life, such as an efficient medical and nursing staff, &c.

3041. Do you consider that the Dunedin Hospital reasonably compares with the test which you say ought to be applied to hospitals?—It does not comply in all particulars.

3042. We will take, first of all, the subject of ventilation in the wards: do you consider that that is satisfactory?—No.

3043. Do you agree that it is essential to any form of ventilation in hospital wards that there should be what is known as cross-ventilation?—As ordinarily understood, no.

3044. You do not agree with that?—Well, we must see what is meant by the term "cross-ventilation" which is so much insisted upon. I think you mean ventilation from one side of a ward to another, from window to window, and in that sense I do not think it is essential. There should, however, be some means for maintaining currents of fresh air through the wards.

3045. What is essential, in your opinion, to an efficient system of ventilation? You have already told us that the ventilation in the Dunedin Hospital is not satisfactory; kindly tell us what are its defects?—Take the case of ward No. 7: apart from windows and doors, the proper outlet for air does not exceed a sectional area of 2 square feet — namely, 1 square foot about the centre of the ward, and——

3046. *The Chairman.*] Are you speaking of a lower or an upper ward?—The ward which was specially pointed out to me.

3047. *Mr. Solomon.*] That, I understand, was No. 7?—I am speaking of the upper ward, which was occupied by Dr. Batchelor's patients. I cannot speak so much in detail with regard to the lower wards. The centre extraction-shaft has a sectional area of about a square foot, and one has to reckon the chimney as equivalent to something under a square foot, regarding it as an exhaust. The chimney itself would not be sufficient, unless a fire were burning, for more than two people. The roughness of the interior causes great retardation of currents. My estimate of the extraction-area as equivalent to nearly 2 square feet is too high unless a fire were burning. The central extraction-shaft would provide for six patients at 24 square inches per individual, which is regarded as a fair allowance—that is to say, that the whole of the air-extraction is not enough for more than eight persons.

3048. *The Chairman.*] You mean 24in. of respiration?—I am calculating 3,000 cubic feet per individual per hour.

3049. I understood you to mention 24 cubic inches per patient?—I said 24in. of inlet per individual; 24 square inches is a fair inlet.

3050. And at that rate, you say, sufficient air would be provided for only eight persons?—Yes.

3051. That is without a fire?—Yes.

3052. And with a fire?—Probably one might count the fireplace sufficient for four or five persons.

3053. That would be thirteen in all?—No; ten or eleven.

3054. *Mr. Solomon.*] Will you kindly tell us something about the inlets?—One must count the ventilators quite apart from windows and doors. There should be a sufficient minimum of outlets and inlets provided apart altogether from windows and doors. I do not think there is any difference of opinion about that. With regard to the inlets, so far as I could ascertain there is not sufficient area provided for one person.

3055. Do you mean in the whole of the ward?—Yes, in the whole ward. There are two inlets which open off the large central space; these are the only special inlets that I could see. They are possibly 8 x 4 inches each—that is to say, a superficial area of 33 square inches each and 64 square inches for the two. There is so much grating in connection with these openings that, allowing for actual blocking out and for increased friction, I do not think one could reckon an effective area of more than one-quarter the total, or, say, 16 square inches.

3056. *The Chairman.*] So that both openings suffice for only two-thirds of one person?—Yes. Further, it must be understood that the air which is admitted by these inlets is always partially vitiated, because it comes from the central hall.

3057. *Mr. Solomon.*] That brings me to another question. This Hospital is built on the block system is it not—the wards opening into a central hall?—Yes.

3058. Do you approve of that?—That is a very broad, general question.

3059. Do you prefer the pavilion system, which gives complete isolation to each ward, instead of the wards opening into a central hall as here?—The pavilion system is certainly preferable.

3060. *The Chairman.*] This Hospital is built on a kind of block system, is it not?—It is. I should certainly advocate the pavilion system if it were a question of building a new hospital.

3061. *Mr. Solomon.*] Do you consider that the wards at the present time give enough room to the patients?—May I speak of one ward in the meantime, in order to simplify matters?

3062. Well, we will speak of No. 7 ward in the meantime: did you consider the patients you saw in that ward had enough room?—There were none there.

3063. How many patients should the ward hold to prevent overcrowding?—Under existing circumstances it would not hold more than eight; that, of course, means nine or even ten persons, because you have to make allowances for nurses, &c.

3064. *The Chairman.*] You stated that the indraft provides for only two-thirds of a person and the outdraft at the utmost for eleven persons?—Yes; but I am now allowing for the use of windows as inlets, not, however, counting on the fire for extraction.

3065. You mean that the ward would then suffice for eleven people?—Yes, if the fires were allowed for; but it would not be a satisfactory arrangement, because no diminution in the number of patients in a ward will compensate for a defective system of ventilation. It is very difficult to give a definite answer to a question of this kind. Where the provisions for ventilation are so imperfect it is hard to say whether it would be right to put any number of patients in a hospital ward.

3066. Do you mean it is not safe to put even one patient in?—I do not like to say anything so sweeping as that. I think I have already sufficiently indicated my meaning—viz., that there is sufficient proper inlet provided for only two-thirds of one person.

3067. *Mr. Solomon.*] Do you think that the ward which you examined to-day could be occupied by fifteen patients—I believe there are sixteen beds in it—by fifteen surgical cases, with anything like safety to the patients?—No, I do not.

3068. Do you think that the risks which the patients run are material risks or trifling risks?—I consider they would be material risks.

3069. When you visited the wards this morning, did you notice the position of the waterclosets, lavatories, and bath-rooms?—I did.

3070. Did you notice, in the case of the waterclosets, there is a door opening from the ward, and that the watercloset itself has another door?—I did.

3071. Are you satisfied with that arrangement?—No.

3072. *The Chairman.*] They are not satisfactory?—They are not; decidedly not.

3073. Are they decidedly unsatisfactory?—They are.

3074. In what particular?—There is no proper provision to insure that the air from the closet shall not enter the ward. The whole of the waterclosets should be cut off by some system of cross-ventilation, and there should be provision for warming.

3075. You mean cross-ventilation in a corridor between the wards and the closets?—Yes, but not necessarily by means of open windows. I am using the term "cross-ventilation" in a broader sense. An effective cut-off could be provided by erecting two partitions across the ward, say, at 9ft. and 12½ft. from the end. These partitions would not need to be more than 8½ft. and 8ft. high respectively, and the space could be securely roofed in lean-to fashion, the upper edge of this roof being below the upper row of windows. In this way the light from the end of the ward would be only partially obstructed, and the partial through ventilation at present obtained for the ward by means of the upper lights would not be interfered with. Further, ample closet, urinal, lavatory, and bath space would be afforded. By placing a small stove at the inner end of the disconnecting corridor, and opening a window at the opposite or outer end, a constant cross-draught would be established, which would effectually prevent closet and other effluvia gaining access to the ward. The plan I suggest is practically a modification of the one shown in Florence Nightingale's well-known sketch.

3076. But there are other things that would have to be considered in determining whether it would be advisable to adopt that plan, such as the length of the ward, the number of beds, and the expense of nursing?—I think that the wards are admirably adapted for hospital purposes, in the

sense that their structure is exceedingly accommodating. I suppose the whole length to be about 120ft.

3077. That is, the whole length of the building? Then, you have ceased to consider No. 7 ward alone?—It is necessary to break into the other wards in answering the question as to length of ward, number of beds, expense of nursing, &c. I take the whole length of the three upper wards —two large wards and tower ward—to be about 120ft., and the width about 25ft. The Hospital was originally built for an exhibition, and the rooms opened into one another by large open archways—in fact, they were all one, and have since been subdivided, by erecting thin brick partitions in the archways. If these were taken down you would have a large hospital ward of typical size, or, if only one were taken down, there would be a medium sized and a small ward.

3078. The plan you suggest would make one ward of the typical size?—Yes; the length, width, and height would all be well-proportioned and satisfactory for a large ward. In the Lariboisiere Hospital, in Paris, the wards, including closet-space, are longer. In the Herbert Military Hospital, which may be taken as a type of a good and fairly modern hospital, the wards are, I think, about 120ft. long, including closets. The ward I have suggested would provide accommodation, if properly ventilated, for a maximum of about twenty-seven patients.

3079. With proper ventilation?—Yes; twelve patients for each of the main wards and three for the tower ward are what I consider to be the maximum numbers of patients that should be placed in the wards. Any number from twenty to thirty-two per ward is considered satisfactory for economical considerations, because one night-nurse can attend to as many as thirty-two ordinary patients.

3080. *Mr. Solomon.*] We have been told in the first place that there should not be anything like what exists here—a blank wall and these windows: do you agree with that opinion?—I think it is a bad arrangement.

3081. Has such a wall as that any effect on the wards?—Yes; but some of the outer windows could be provided with double glass, and there is no reason why windows should not be placed in the blank wall at intervals. It would be a very easy thing to do.

3082. Do you think that you can get efficient ventilation in these wards, situate as they are adjacent to a central hall?—Certainly I do.

3083. How can that be done without structural alteration?—I think that probably the simplest and most efficient plan would be to put a large central shaft in the middle of the hall, with a fire at the bottom, and ventilate the wards into that by means of extraction-pipes or shafts led from each ward.

3084. *The Chairman.*] Your proposal would require air to come from the central hall?—No; it is a question of extraction; you extract the air by means of a large central shaft, the air supplied to the fire being received directly and solely from the wards.

3085. Your plan requires the central hall to be used as an extraction chamber?—A shaft would have to go through it from the basement—a shaft such as is used for the House of Lords and the House of Commons at Home, for the New Free Library in Edinburgh, and many other recent buildings of large size. The fire at the bottom of the stack would serve also for heating a boiler connected with a system of hot-water pipes traversing all the wards. It is impossible in winter to ventilate efficiently without adequate provision for heating. One ordinary open fireplace has practically no effect in a Hospital of 20,000ft. capacity.

3086. *Mr. Solomon.*] Do you approve of the composition of the walls, the floors, and the ceilings in the Dunedin Hospital?—Please take them one at a time.

3087. Well, we will take the walls of No. 7 ward?—I think that the walls are of brick, simply covered with whiting or lime, and in some parts possibly with cement. I do not consider whitewashed brick a satisfactory substance; it is not smooth enough; it is too irregular, and, moreover, the brick and mortar are too absorbent.

3088. *Mr. White.*] I think that the walls are sized also?—That is rather objectionable, because it is organic.

3089. *Mr. Solomon.*] What about the floors?—I think they are exceedingly unsatisfactory. I do not know that I have ever seen such bad floors in any other Hospital. The material which has been used is one of the worst kinds of wood for such a purpose, because it is very soft and open-grained, and tears up into long threads when you wash it. The boards are too wide, and in many places not closely enough joined.

3090. What about the ceilings?—While speaking on the subject of floors, I ought perhaps to say that, in my opinion, the wards should be entirely refloored throughout.

3091. *The Chairman.*] You say that before No. 7 ward is used again it should be entirely refloored throughout?—Yes; kauri flooring would be perfectly satisfactory, especially if polished with bees-wax, or by ironing solid paraffin into it [specimen shown].

3092. *Mr. Solomon.*] As to the ceilings, are they satisfactory or do they require amendment?—They are made of lath and plaster, but I do not know that there is any special objection to them. They might with advantage be rendered smoother and less pervious.

3093. Are the walls and flooring pervious?—No doubt the air can pass through them.

3094. *The Chairman.*] Would germs pass through?—They might.

3095. Would there be any danger in that?—There might possibly be.

3096. *Mr. Solomon.*] Do you think the flooring, as you found it in No. 7 ward, favourable or unfavourable to the collection of possible germs?—The floor is washed, not varnished or polished, which is highly unsatisfactory; the cracks get filled up with filth, and this must be a perfect nest for micro-organisms.

3097. *The Chairman.*] Did you see any oilcloth or examine it?—I did not.

3098. *Mr. Solomon.*] I think that you stated that these places would be perfect nests for micro-organisms?—It must be so, as the floors are frequently washed; further, the frequent washings are injurious to patients, owing to the coldness and dampness which result.

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 Seacliff?—Yes, as regards the liability to siphoning of traps, but there were far more serious defects in the drainage arrangements at Seacliff 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 Seacliff. 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 diagramatic 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

important to note that serious leakages existed in connection with the drainage-arrangements of most of the other wards, but no such obvious ill results followed, owing, no doubt, to the fact that all the closets, with the one exception before mentioned, were more or less perfectly disconnected from the wards. The main drain was locked up by unventilated traps, and, owing to the fall being slight and flushing-arrangements inadequate, sand and other *débris* had almost completely filled up the traps, leaving less than 2in. visible. Behind these obstructions large accumulations of paper and excreta gathered. The ward drains entered directly into the main drains, without traps or disconnections.

3115. *Mr. Solomon.*] You have explained to us how an unsatisfactory state of affairs at Seacliff Asylum was attended by an outbreak of erysipelas of a terrible character: do you consider it would be surprising, in the state of affairs which you have yourself seen at the Dunedin Hospital, that it should be attended from time to time by erysipelas?—No, I do not.

3116. *The Chairman.*] Would you expect that there should be erysipelas?—I will not say that I should expect it, but there exists a state of affairs which would be liable to lead to erysipelas—which would, in fact, increase the risks. Vitiated air and wet floors both tend in the same direction.

3117. *Mr. Solomon.*] Is it surprising, with the conditions which exist at the Hospital, that surgeons should from time to time find comparatively simple operations attended with suppurations which they could not account for?—I think it is not surprising.

3118. Do you think that the persons operated on for severe abdominal section, or for gynecological operations, such as Taits's or Emmet's, &c., run an increased risk of septic poisoning from the condition of affairs which exists in the Dunedin Hospital?—Certainly they do.

3119. Suppose that you were engaged in Dunedin Hospital as a surgeon, and were called on at any time to exercise a discretion as to whether or not you should perform an operation on a patient, such operation not being an absolute necessity in order to save the patient's life: could you, in exercising that discretion, honestly exclude from your mind the risk of septic poisoning that exists owing to the unhealthy state of the Hospital?—Certainly not. It would be a foremost consideration—the first consideration.

3120. Do you think that an operator, in a serious case of abdominal section, can operate in the Dunedin Hospital with the confidence which he ought to have in a fairly good hospital?—Certainly not. By the way, may I mention now a point in connection with the ventilation of ward 7 which struck me as being very extraordinary, and which is certainly a serious risk: there is a man-hole in the ceiling more than 2 square feet in area; this is covered by a movable grating, and has been regarded as a means of ventilation, being supposed to serve either as an inlet or an outlet for air, according to circumstances. When I examined it there was no definite current either way, but it must evidently serve as a principal inlet when a fire is burning. On getting through this man-hole into the attic I found immediately beside it an open wooden trough-gutter running through from one side of the attic to the other. The mud in this was more than an inch deep, consisting partly, no doubt, of the excreta of birds washed from the roof. The aperture of entrance to this gutter was close to the man-hole. How long this gutter has been there, and what object it serves, I cannot say, but I suppose it carries water from the central roof to the outside gutter.

3121. *The Chairman.*] How did the place smell when you got up there?—Close.

3122. *Mr. Solomon.*] How do you think our mortality rates in New Zealand should compare with those at Home?—I think they should be lower. You mean, in the general community?

3123. No; I mean in the Hospital?—I meant in the community. I do not know about the Hospital.

3124. Other things being equal?—I do not think there is any necessary connection between the general and hospital death-rates. The death-rate of the community should obviously be lower in a young country which is growing and has a smaller proportional infant population than in an older country.

3125. What do you think would be a fair death-rate in a good hospital in this colony? Can you form an opinion?—I cannot without going into the whole of the facts.

3126. Under present circumstances, do you think it possible that the death-rate of the Dunedin Hospital could be satisfactory?—I should say that the conditions which I have seen there tend to make the death-rate unsatisfactory.

3127. *The Chairman.*] You mean that it would tend to increase the death-rate?—Yes.

3128. *Mr. Solomon.*] Does that apply to patients who have to undergo severe operations and who frequently run an increased risk?—Certainly.

3129. Does it follow that the unsatisfactory results should be apparent at once?—Not necessarily.

3130. Could they go on for a long time without being found out?—Certainly; take the case of the Wellington Hospital, the circumstances of which were, it seems to me, parallel with this to a certain extent. So long as the lead pipes remained intact, or did not give way, in specially dangerous situations, no obvious harm resulted from the defective drainage-arrangements; but directly the cement cracked away, and leakage occurred under the children's ward, the evil manifested itself in the severe epidemic of sore throat which I have already described. To illustrate the condition of lead piping which has been in use for many years I may show you these samples of pipes recently taken from Seacliff Asylum. [Sample shown of lead pipe distorted and thinned by hot water and heavy flushes; junction torn away by sinkage of soil-pipe; cracked seams; portions of lead piping gnawed through by rats; unduly light material, 5lb. lead being used where it should have been 8lb.]

3131. *The Chairman.*] Are you aware what the piping at the Hospital is made of?—Yes, of lead. The soil-pipes should be carried up outside the building. The material is too light. I understand it is 5lb. or 6lb. lead, whereas it should be 7lb. or 8lb.; moreover, the method of seaming used

in the colony is an element of weakness, and has been abandoned in good work at Home. There solid down-pipes are used almost universally. Here is a sample of sheet lead with soldered seams.

3132. Of course, that is liable to be warped by extension and contraction?—Yes; it would, in my opinion, be much more satisfactory to have cast-iron soil-pipes carried down the outside of the building.

3133. *Mr. Solomon.*] In the month of July Dr. Batchelor performed an ovariotomy operation at Seacliff Lunatic Asylum?—Yes, he operated on an Asylum patient.

3134. Were you present at the operation?—Yes; but it was performed in a cottage at some distance from the Asylum.

3135. Did you find him careful in the use of antiseptics?—Yes.

3136. He practised the utmost carefulness?—Yes.

3137. Was there any septic trouble in that case?—No; the wound healed by the first intention, excepting a small portion of the lower end of the incision.

3138. It was a severe operation, was it not?—Yes.

3139. What was it?—Double ovariotomy and removal of tubes and clitoris. With regard to the portion of wound that did not heal immediately, I may say that the patient was extremely restless, and, being insane, would not keep still; further, I think I removed the lower stitches rather too soon; however, the whole wound healed well; there was not a trace of suppuration, and at the end of three weeks the patient was up.

3140. Do you think that if a patient who was about to be operated on in the Dunedin Hospital were put in a ward that was in the condition of the one you examined this morning for a week prior to operation, and put back there immediately after the operation, that she would have a proper chance of recovery?—I do not think it would be satisfactory.

3141. Would you be at all surprised to learn that operations of a much simpler nature than the one you saw at Seacliff, which Dr. Batchelor had performed during the same week in that same ward that you saw in the Hospital—viz., No. 7—were attended with septic poisoning?—I should not be altogether surprised, because the conditions of the ward would increase the risk of septic poisoning.

3142. To put the matter in a formal way, do you agree or do you not that there are defects in the sanitary condition of the Dunedin Hospital?—There are defects.

3143. Do you also agree that these defects are "of so serious a character as to be a source of grave danger to the patients, and call for immediate remedy"?—Yes.

3144. *Mr. Chapman.*] In connection with the latter question, as to the defects which you have pointed out in the ventilation and drainage systems, what remedies do you propose for them?—I have already indicated in a general way a means by which the wards could be ventilated through a central extraction shaft; suitable inlets could easily be provided. As to drainage, the defects could be remedied upon the lines pursued at Wellington Hospital and Seacliff Asylum [*vide* description and diagrams supplied].

3145. You say that there is very little alteration needed in regard to the drainage?—Yes; I cannot speak about the conditions of the drains beyond the gully-traps, but I fancy they are not ventilated there.

Mr. White: The doctor is mistaken in that.

3146. *The Chairman.*] You did not examine the outside drains?—I did not examine them beyond the gully-traps.

3147. *Mr. Chapman* (after calling witness's attention to plan).] Does that appear to you to cut off the drain from sewer?—It cuts off the soil-pipe from the sewer, but that form of trap is exceedingly unsatisfactory; it gathers filth, and has been severely condemned.

3148. *The Chairman.*] It is a cesspool in fact?—Yes, it has been generally condemned.

3149. Would it be a particularly expensive matter to run up another shaft?—No; the shaft is in the wrong place.

3150. Is it satisfactory at present?—It is not.

3151. *Mr. Chapman.*] You were asked some questions about cases, whether you would be surprised if a number of cases went wrong under certain conditions. Suppose a case of this sort occurred: A woman on a night before operation had a temperature of 101°, and it was stated to you that there was a yellow discharge from her vagina, and that she was subject to rigours and shivering, would you not eliminate these facts before operating?—Yes.

Mr. Solomon: That is an unfair way of putting it. That is the first time that such a thing has been suggested.

Mr. Chapman: The question is put as a general one. I have not told the witness what the operation was.

Witness: Might I know the particular operation that was performed?

Mr. Chapman: It was an Emmet's operation.

Mr. Solomon: Neither do we admit the temperature.

Mr. Chapman: I am putting a suppositious case for the purposes of my question.

Mr. Solomon: Then, you will need to leave out the rigours, as we know nothing about them.

Mr. Chapman: If Dr. Batchelor says that is a mistake there is an end of it.

Dr. Batchelor: That is the first time I have heard of it.

3152. *Mr. Chapman.*] Suppose a temperature of 101° before operation, the fact that the woman was suffering from something which caused a yellow discharge from the vagina, that the conditions were what I have mentioned to you, would you consider these things in considering whether she had suffered from anything septic in the Hospital? Would you eliminate these things before condemning the Hospital?—I do not quite grasp your question.

3153. You have been asked a question, certain conditions being put to you as to whether under these circumstances you would be surprised at an operation going wrong in the Hospital?

Mr. Solomon: I did not ask about one operation. I instanced three operations.

3154. *Mr. Chapman.*] Well, in none of these cases is the operation said to have been a surgical failure, but that septic trouble has arisen. Do you attach any importance to the fact, if it be a fact, that the temperature was 101° before operation?—Certainly.

3155. If you had had a simple operation (such as we have been told an Emmet is) to perform, would you have performed it with a temperature as high as that?—Certainly not.

3156. What would that suggest to you?—It would suggest that there was possibly or probably some inflammatory condition going on; of course, the rise of temperature might have been due to a common cold. What was the patient said to be suffering from?

3157. She was said to be suffering from something which caused an Emmet operation—not to be a necessity—to be rendered expedient to be performed some day?—If that were so, she might possibly have been suffering from sub-acute or acute inflammation of some of the pelvic viscera.

3158. But if such inflammation were acute, would you undertake to operate at that time?—No.

3159. You would treat the operation as one of expediency which might be performed a month or three months hence?—Yes.

3160. If you were a surgeon who was approaching every operation in fear and trembling, such things would be a sufficient indication to you not to operate?—Yes.

3161. Now, in a general way, you say that erysipelas has arisen at Seacliff: have you ever known any hospital where erysipelas did not arise at times?—I have not.

3162. Even in hospitals in the best condition?—Even in hospitals in the best condition. But it is only fair to state that I have never seen it arise previously in any establishment in anything like the number of cases in which it has arisen at Seacliff Asylum; nor have I ever seen such an epidemic of hospital sore throat as occurred in the ward of the Wellington Hospital which I have mentioned. In other public institutions I have met with occasional sporadic cases, so to speak, of erysipelas, which will occur in any hospital, and may, as often as not, have existed before the patient came in; but if a large number of erysipelas cases occur in any institution it is an indication that the place is in a very unsatisfactory state with regard to sanitation.

3163. You have been asked some questions with reference to a particular week in the Dunedin Hospital. Now, supposing you were informed that at that time, and prior to it, immediately about it, and even for some months previously, a number of serious gynecological cases had made perfectly good recoveries?—Do you mean in the Hospital.

3164. I mean in the same wards, and even in the same beds in succession. From that fact what conclusion would you form, in a general way, as to the state of the Hospital?—I could not form any conclusion from particular cases. I mean to say that patients may be placed in insanitary surroundings and yet escape infection. One sees that constantly; and it does not follow because 95 per cent. of cases are apparently unaffected by insanitary conditions that the 5 per cent. of affected cases would not be quite enough to render it undesirable that you should have an unhygienic condition in your hospital.

3165. Now, as to statistics, you have given us an expression of opinion on that subject: I suppose that without analyses of the classes of cases, the number of cases treated in the Hospital, &c., you cannot come to any reliable conclusion?—I consider statistics absolutely valueless unless you know the factors bearing upon them; necessarily that must be the case with all statistics.

3166. You say that a comparison of our Hospital with the general average of other hospitals is of no value?—I consider it of no value unless you know the factors in the different cases.

3167. You have pointed out in the course of your evidence a number of things in the way of improvements, such as a ventilating-shaft, alterations to the floors, walls, &c.: do you think that if these alterations were carried out the Dunedin Hospital could be made a satisfactory hospital?—Other improvements would also be necessary—for instance, I consider it would not be at all satisfactory unless you had some proper provision for heating. With regard to heating, I found that in the Wellington Hospital—and of course Wellington has a higher temperature than Dunedin—throughout a large portion of the year the temperature was far too low. I had the temperature taken regularly in different parts of a large ward for three weeks in the winter of 1888, and found that, except in the immediate vicinity of the fireplaces, there was no appreciable warmth from the two open grates; in fact, the general temperature of the ward rose and fell with that of the outside atmosphere, tempered only by the enclosure of the space and the animal warmth of the inmates. It was often as low as 45° Fahr. throughout the greater part of the ward, and several times it fell to 42°; and these low figures were reached in spite of the fact that ventilation was somewhat restricted in order to prevent too excessive chilling of the patients. The patients complained bitterly of the cold, and cases of rheumatism and chest complaints were often aggravated. There must be a similar state of affairs in the Dunedin Hospital.

3168. What would there be available for warming in connection with the ventilating-shaft?—The fire at the bottom of the shaft would serve to heat one or more boilers connected with a system of hot-water pipes traversing the wards.

3169. Then, the fire would be in the basement?—It would have to be.

3170. With these improvements, and others which suggest themselves to you, the present Hospital might be made a satisfactory hospital: do you think so?—Yes; with some additional minor improvements.

3171. There is one matter of detail the Commissioners have noticed. Have you inspected the kitchen?—Yes.

3172. That is unsatisfactory?—Yes, I think it should be better ventilated. More extensive ventilation might be obtained by means of a large shaft without any extra heat, because there is plenty of heat generated down there. By the way, in my answer to your previous general question, as to whether the present Hospital could be rendered satisfactory, I did not mean to preclude the erection of such additional wards, &c., as might be required; I merely meant that, so far as the

building itself was concerned, I could see no reason why it could not be rendered satisfactory as a hospital at a moderate cost.

3173. What is the most satisfactory position for the kitchen? Is its present position satisfactory?—I think its present position is satisfactory in some respects, because you can readily raise and distribute the food by a lift; there is, of course, an advantage in having a kitchen higher up, so that the fumes may not penetrate into the wards; but efficient ventilation would get rid of that, especially if a double ceiling with a ventilating space between were adopted.

3174. You spoke of additional wards just now: do you mean special wards, or additional wards of a general kind?—I have not considered that matter carefully enough; in fact, I have not had time to grasp sufficiently what the requirements are, or what available space there is; but, in any case, it is certainly desirable to have some extra rooms and small wards for special patients—rooms to hold one, two, or three patients each, and small wards for isolation of fever or other infectious cases. I consider that for the latter purpose there should be a pavilion entirely separate, and at some distance from the rest of the Hospital, but included in the Hospital grounds.

3175. For any other classes of cases?—I have seen the subject of a gynecological ward mentioned, but I have no figures with regard to the number of cases. I should think that it would be desirable to have a small ward for gynecological cases, with perhaps a separate room attached to facilitate the isolation of individual patients.

3176. And for the others which would require separation, and which, if you liked, you might multiply indefinitely. We have been told, for instance, about ophthalmic cases, phthisis cases, mania cases, and so on?—I have no facts or figures before me, and therefore it is utterly impossible to deal with the question.

3177. *Mr. Solomon.*] Suppose that it has been suggested that several cases of a gynecological character as abdominal sections got well in No. 7 ward without septic trouble, would it alter your opinion that the ward is now in an insanitary condition?—No.

3178. *The Chairman.*] You have told us that you think twelve persons would be the maximum number that the present wards should hold if properly ventilated: if the partitions were taken down, and the wards thrown into one, how much accommodation would be provided per ward?—For twenty-seven patients.

3179. Then, they would not hold so many as at present?—Oh no! the average numbers now are about fifteen for the ordinary wards and four for the tower wards.

3180. That would be a practical objection, would it not?—I do not think so; there is apparently a misunderstanding.

3181. How far would that plan render the Hospital insufficient for the purpose for which it is at present used? Would it admit of the proper subdivision of the work of the Hospital?—I am of opinion that it would; no doubt you would need wards of different sizes, according to the classes of cases; if you like, I will look into the question and give you a reply to-morrow.

3182. You think that the position of the kitchen is satisfactory if the ventilation of it were increased?—Yes, I think it would do.

3183. Are we to understand that you think the position of the furnace and boilers where steam is generated, right underneath a ward the partition of which is a wooden floor, is a proper or healthy thing?—No, I do not.

3184. Is it a proper place for food to be cooked in? Is it well lighted?—No; if it can be avoided it is not desirable to have the kitchen there, because it should not be on the ground-floor. It is certainly not a good place for a kitchen.

3185. *Mr. Solomon.*] We have had reference made to the great difficulty in seeing how to perform delicate operations at night; is it not the practice at Home to have incandescent lamps, usable in such a way that their light can be brought to bear in any position for examining a wound or making an examination?—One kind of lamp which is used at Home in operating-rooms is a lamp with the lower end of a large cylinder incandescent.

3186. I do not mean a fixed lamp, but a portable ward-lamp?—Yes, it is usual to have a portable lamp on an adjustable stand furnished with a reflector, or else to have gas-fixtures with universal joints.

3187. Should not this Hospital be provided with an incandescent lamp?—I think it would be desirable.

Mr. White: As a matter of fact, one has been ordered from Home, I believe.

Dr. Truby King cross-examined.

3188. *Mr. Solomon.*] We have heard Dr. DeRenzi state how this Hospital compares with the Christchurch Hospital: will you please tell us how the Dunedin Hospital compares with the Wellington Hospital?—It would be impossible to state from memory. I really cannot tell you, and there is no use in trying to do so without analysing the statistics.

3189. You do not understand me. I am not asking you about the mortality; but how does the Dunedin Hospital compare with the Wellington Hospital? In whose favour is the comparison?—In favour of Wellington.

3190. Is there a considerable difference between them?—A great difference.

3191. *Mr. Chapman.*] You have answered that question in general terms?—Well, the building and its internal details are very different, and there is an enormous difference with regard to the nursing arrangements.

3192. Then, you say that Wellington Hospital is superior to Dunedin?—Most undoubtedly it is.

3193. Now, with regard to the results of cases, you say that you cannot speak with any degree of certainty?—As to the statistics, the cases that I have heard read certainly indicate a large per-

centage of deaths after operations in Dunedin; but it would be necessary to go into the matter very carefully before one could form an opinion of any value without analysing the figures. I would not venture to give a definite answer. It would be absurd to attempt to do so.

3194. Did you go into the cases referred to in this list [handed to witness] ?—I read over some of the cases.

3195. There are four cases: did you compare them with the entries in Dr. Batchelor's book?—I compared these that are marked in pencil, but did not compare the others. I may have misunstood the book, for there were many cases in the *précis* that I could not find in it. Some cases in the book were pointed out to me, and I compared those with the ones marked with crosses in the *précis*.

3196. Did you read them in that book [Dr. Batchelor's private case-book]?—I did.

3197. You compared these cases in the book with these in the *précis*?—I did.

3198. Do the statements in the *précis* compare fairly with what is written in that book?—I do not think so.

3199. In how many cases does that occur?—In three or four cases.

3200. It is very short in the *précis*, is it not, and given in great detail in the book?—Yes.

3201. Do you say that that *précis* does not fairly represent what is in that case-book?—Yes. The first case is that of William M——. It is stated in the *précis* that "suppuration followed" —that is, suppuration after operation; but it does not state suppuration already existed before the operation. In the case of G—— there is a statement that "matter formed," but there is no statement that suppuration existed before the operation. In P——'s case the statement is "leg amputated;" "chronic blood-poisoning ensued." This appears to have been a case of strumous periostitis. There is no evidence in the case-book that chronic blood-poisoning ensued. It may be there, but I could not discover it, and I read the case from the book. I say that there is no evidence, as far as the case-book goes, of chronic blood-poisoning.

3202. Have you compared any of the other cases in the *précis* with the case-book?—I also read S—— M——'s case, but did not make any notes concerning it. If you wish to ask me any questions about that case I shall require the book. [Case-book handed to witness.] I have evidently only read part of this case. I was shown a description of S—— M——'s case in another number of the *New Zealand Medical Journal;* not in this one. I will read the paragraph which Mr. Chapman has marked: "To me there seem several points of unusual interest in this case: after a simple and straightforward operation, septic matter finds its way into the system by an unusual and unexpected channel. There was an entire absence of any peritoneal symptom for the first forty-eight hours, and the acute tenderness of the cervix and uterus, the pains down the front of the thighs, the pain in the back (*sacral*), and the fœtid discharge from the uterus, together with the *post-mortem* appearances, leave little room for doubt but that septic metritis or endometritis was the starting-point of the disease. From the rapid onset of the symptoms, the rigour occurring within three hours of operating, would almost seem as if the removal of the ovarian tumour by its mechanical relief to the circulation allowed of the more ready absorption of septic material.

3203. *The Chairman.*] Where is what you have been reading taken from? It is from something Dr. Batchelor has written?

3204. *Mr. Chapman.*] It is from an article in the *New Zealand Medical Journal*, and is written by Dr. Batchelor. [To the witness:] Do you recognise from that extract that that case was one of blood-poisoning owing to the condition of the Hospital?—Certainly not; but that is a very awkward question to answer.

3205. You do not recognise it, from what I gave you to read, as a case of blood-poisoning on account of the condition of the Hospital.

The Chairman: You say that it is a case of blood-poisoning in the ward.

Mr. Chapman: So I understand; that is Dr. Batchelor's account of it, I believe.

Mr. Solomon: I strongly deny that we have said that this was a case of blood-poisoning caused by the ward. I say that it might be caused by the ward.

Mr. Chapman: I will read a little further: [Mr. Chapman here quoted from the *New Zealand Medical Journal* for September, page 34.]—I am of opinion that a case of such rapid septicæmia would not have been directly caused by the condition of the ward, though the Hospital might be an indirect cause, being responsible to some extent at least for the presence and frequency of septic disease in the building.

3207. *Mr. Solomon:* That is all we say. That is the most that we have ever contended for. I may possibly have conveyed a wrong impression?—I am of course going mainly upon the reports made by Dr. Batchelor which have been submitted to me. I will read this sentence: "The question necessarily arises, was the operation undertaken too soon after the confinement. The patient was delivered on 22nd June, and was operated on on 29th July, or thirty-seven days afterwards," *et seq.* (*New Zealand Medical Journal* for September, 1887, page 34.)

3208. *The Chairman.*] I understand you to say there are two inconsistent accounts given of the same case?—The statement in the *précis* is too bald; it states that septicæmia took place, but it does not convey the fact that the woman was also in a specially receptive condition.

3209. *Mr. Chapman.*] The summary does not convey that?—No; however, in order for septicæmia to occur something must be introduced into the system which should not gain access, and which should not be in the surgical ward of a hospital.

3210. Did that indicate that the operation was performed too soon, or that it was performed at a time when it should not have been?—That is acknowledged in the book. It comes to be a question sometimes between two dangers—whether, for instance, a patient ought to be allowed to remain with a tumour, or whether, and if so when, an operation should be performed. This appears from the book to have been the case here; it is a matter of time and judgment; a case of two evils and choosing the lesser.

3211. Without reading or knowing the whole case can you tell that?—I have read what has been submitted, and the whole argument seems to indicate that.

3212. Did I understand you rightly to say that when you were in the Hospital you made some tests with the watercloset traps, before you gave your evidence yesterday, something about siphoning?—Yes.

3213. Did you find that they siphoned out?—No. My tests were made to ascertain whether any of the traps became siphoned when a column of water descended the soil-pipe.

3214. And you found?—That none of them became siphoned. It is, however, a recognised law that rainfall water from the roofs should not empty into the soil-pipes—that is a recognised canon of hygiene.

3215. But that will depend on the number of down-pipes, will it not?—The effect would vary according to the number of down-pipes. However, the conditions are essentially similar, so far as I could ascertain, to those which I have found by experiments elsewhere to be attended by danger—at Seacliff, for instance. In any case the arrangement of pipes in the Dunedin Hospital is wrong.

3216. *The Chairman.*] You found the conditions to be similar in practice to what you had at Seacliff?—Yes, to a certain extent.

3217. And which have been remedied there?—Yes, partially. The work is not completed yet.

3218. *Mr. Chapman.*] The closet traps did not siphon out?—No; and the explanation is simple, because the building has only two stories, and the soil-pipes below the lower flat pursue a very angular course, in some cases turning twice at right angles in a distance of 6ft. The resistance caused by this negatives the effect of the down-flowing column of water, as regards the first flat. There are no flushes above the upper flat, except during rain.

3219. *The Chairman.*] In fact, you cannot test the soil-pipe in the upper story except by water from the roof?—No. As regards the lower flat, pressure upon the seals, and not suction, took place at Seacliff when water was discharged into the soil-pipes from above. Aspiration resulted only in connection with the middle and upper story.

3220. *Dr. Batchelor.*] Would you expect a scientifically accurate report, or simply a report giving my own impressions of such cases, to be laid before a public body; you must remember that I was not reporting to a body like a medical association, but to a body of unscientific men, who would be more likely to take in the striking points of the case. Taking that view of the matter, is my report to the Trustees a consistent one?—No; in these reports you certainly convey quite a different impression from what I have formed myself from reading the cases in the case-book. I can only say that I should not express myself in such terms if I wished to convey my views regarding these cases in popular language.

3221. In regard to these cases of knee-joint, it was a strong point with me that, in cases of simple synovitis, suppuration or inflammation should have taken place in the Hospital?—I do not agree that in the cases of M—— and G—— simple synovitis ever existed; at least the reports in the case-book indicate that the affections were strumous or tubercular from the first. If you will hand me the case-book I will read out the points from which I formed this diagnosis. [Witness here read extracts from the case-book.]

3222. But if you found within three weeks after admission a case of slight injury to the knee-joint developing suppuration, would you not consider that that pointed to a defective condition in the Hospital?—I do not think so, because the injury was followed up by pain, and an apparently slight injury to the leg gave rise to tubercular or strumous trouble.

3223. From the fact of suppuration taking place, which I had never met with in my private practice, was I not justified in ascribing it to the unhealthy condition of the Hospital; or, I will put it in this way: is it not more likely that suppuration would supervene, if the condition of the Hospital were defective hygienically?—What I have been reading now does not convey that impression; I think that there was something more remote than that, if you go by this *précis*. You state the case, but do not state the general kind of disease.

3224. Would not simple synovitis in unhealthy surroundings be apt to take on a tubercular aspect: is that not its general history?—What about bone at the head of the tibia?

3225. Is that not consistent even with synovitis in the first instance?—It is, especially in cases of synovitis; but your notes do not seem to indicate synovitis.

3226. You will admit, at any rate, that under unhealthy conditions it develops into a tubercular condition. Now in my experience in my private practice I had never seen similar results, and therefore was inclined to ascribe it to the unhealthy condition of the Hospital. But the boy was twenty-one years of age?

The Chairman: That is stated in the *précis*.

Witness: But Dr. Batchelor omits to state there that there was suppuration before operation.

Dr. Batchelor: It is certainly not stated in what I sent to the Trustees, because I did not think it would be understood.

Witness: The points I rely on are mainly these: There was the patient's age; the fact that he had sustained only slight injury—he had jumped down from off a bank, and fell upon the upper end of the tibia; and that he was treated as one would treat a case of strumous knee.

3227. *The Chairman.*] In your opinion, the fact that there must be some more direct connection with the bad state of the Hospital than is given by these cases as they really existed, must be established, before such an opinion can be entertained?—Yes.

3228. You were in charge of Wellington Hospital in 1888?—Yes.

3229. *Mr. Solomon:* I notice in the statistics for that year that you had twelve septic cases in Wellington, and that six of them died. There were five cases of gynecology and one death; two cases of pyæmia and one death, and five cases of septicæmia and three deaths. Can you explain that?—I remember the cases of pyæmia. They both occurred in urinary cases. It was very

doubtful whether the operation should be performed, because the bladder was in a very septic condition. It was not unnatural that death should occur from septicæmia in these cases.

3230. You do not refer to the period when the building was in a bad condition?—Those erysipelas cases were getting on very well; but I think they were for the most part bred in the place.

3231. I mean, was that at the time that the drains were in the faulty condition that you described yesterday?—I cannot remember exactly, but it was about the end of the same year. You see that when once erysipelas takes place in a hospital, it will go on and break out here and there for a time, even after the defects are remedied. I remember a child having a perfectly simple operation performed on it and dying from erysipelas.

Dr. MAUNSELL recalled.

Witness: I wish to make a short statement in regard to the list of deaths after operations that has been produced in evidence. Among them is the case of a man who shot himself, the bowel being torn across in several places.

3232. *The Chairman.*] Is that one of the cases of suicide that are put down?—Yes.

3233. You say it should be eliminated?—Yes. In another case the bowel was found to be in a gangrenous condition, and he was admitted in that state into the Hospital. Where a patient comes into the Hospital with his bowels black and gangrenous, the surgeon looks for the worst results; yet such cases are put down in that list as deaths from operation. Let me begin where I ended the other day. I said that I was in favour of a pavilion hospital, with double walls, as being the very best system that you can have, and that the building should not be put up to last more than twelve or fifteen years. The basement must, however, be permanent. Now, with regard to the defects of the Dunedin Hospital, I may tell you that they are mostly the effect of the Hospital having been built on "the block system." In the first place, there must necessarily be deficient ventilation, deficient sunlight, deficient exposure, and deficient isolation; and, as all the wards open into a central hall, there must be a common "hospital" air. The floors are all old, partly rotten, absorbent, and washed instead of polished. The walls are also absorbent, and the tops of the windows and doors would be better if they were rounded off. There is a line of beds arranged along a dead wall, and that is objectionable. There is only one window to every four beds; while they should be completely shut off from the wards with a lobby and cross-ventilation. Each bed should have at least 1,500 cubic feet, and a superficial area of from 100ft. to 120ft.

3234. *Mr. Solomon.*] In surgical cases, how many cubic feet ought you to have?—Where you have open wounds, such as burns, &c., you should have 3,000 cubic feet to each patient.

3235. *The Chairman.*] But you stated 1,500ft. just now?—That was in medical cases. In the Dunedin Hospital there is one closet for every fourteen or fifteen patients, while there should be one for every eight or ten. There are no urinals in the main wards. There should be a small range, with a gas stove, in each ward, and accommodation for the chief nurse. There should be special wards for contagious, infectious, and delirious cases. There should be isolated wards for lapirotomy cases, which should be isolated, away from the main building. The basement of the present building is used for the kitchen and for stores. Now, that is unanimously condemned by all authorities on hospitals. In the Dunedin Hospital they have what is called a "fallow" ward. That is a very good thing to have in a hospital where you have ample accommodation; but where accommodation is somewhat limited, as here, there is a tendency to crowd the other wards, which are already overcrowded. I may say that the present Hospital is looked after remarkably well by the house steward and secretary, Mr. Burns. He is a most energetic secretary. He is always going round the place, seeing where improvements can be effected; he is, in fact, an excellent man.

3236. Is it possible to keep the Hospital sweet?—It is kept as clean as it possibly can be with the present accommodation. I think that with the existing accommodation it could not be kept in a better state than it is. I am satisfied on that point.

3237. You consider that the state in which it is kept is very satisfactory?—Yes.

3238. Do you think that it is practicable now, after carefully considering the subject and hearing the various suggestions which have been thrown out during the past few days as to patching-up the Hospital, to so alter it as to make it satisfactory?—Well, some two or three years ago the medical staff drew up a report showing that the building could be greatly improved if towers were put up at the ends of the wards. These towers were to be shut off from the main building by a lobby with cross-ventilation; and the towers were to contain waterclosets, lavatories, accommodation for nurses, and a small range, together with a storeroom. But even these changes did not take into account the renewal of all the floors—*i.e.*, the pulling up of all the floors and putting them down in close-grained wood, and covering the walls with Parian cement.

3239. Would it have done very well then?—Fairly well. But that would have cost a a very considerable sum of money.

3240. *Mr. Solomon.*] Still you have not answered my question. Leaving out of consideration the money point of view just now, for it is generally agreed that some changes will undoubtedly have to be effected, I want you to assist the Commissioners by giving them the best advice you can. Looking at the matter from a patients' point of view, I ask you whether you think it is now practicable to patch up the building so as to make it satisfactory?—I do not think it is advisable to do so. I have changed my views on the subject, and now consider that the best thing which can possibly be done is to convert the present building into the administrative or departmental portion of the Hospital. Wards should be run out on the pavilion system, and be connected with roofed asphalt walks. I have come to the conclusion from what I have read on the subject that the only permanent portion of a hospital should be the administrative portion, and that this should be the

only portion which should be built of stone, brick, or concrete, all of which substances or materials are apt in the course of time to become saturated with septic matter.

3241. I ask you whether you think it is advisable that in the present Hospital the practice of treating gynecological cases in the same ward as ordinary surgical cases shuld be allowed to remain as it is?—I do not think so. I think that that point has been settled since the days of Baker Brown, who was the first to show the advantages of isolation in all these cases. He had most extraordinary success through isolating his ovariotomy cases.

3242. It is especially necessary, is it not, that in ovariotomy, or what we may call uterine operations, there should not be increased risk of septic poisoning?—Yes.

3243. That these operations should be as free as possible from that risk?—Yes, because it involves a deadly complaint, which is called peritonitis.

3244. Now, we have heard of the passage of germs from the vagina into the peritoneum?—Yes. Septic matter may pass by continuity through the fallopian tubes to the peritoneum and cause peritonitis.

3245. I suppose that, under the circumstances, a patient should be kept in a pure atmosphere both before and after operation?—Yes.

3246. It is the fact, is it not, that certain wounds give off septic matter?—Yes; especially large suppurating burns.

3247. And such cases are a source of danger to the other patients in a general surgical ward?—If there is a large suppurating surface there is a constant danger.

3248. Dr. Batchelor has told us of one case in which he was about to perform an operation, and was surprised to find at the last moment a woman lying in the next bed to that of his patient who was suffering from purulent bed-sores, which fact deterred him from operating; and he has told us further that that is a state of affairs which may happen at any time. Is that so?—Yes. When the Hospital is crowded, and no special ward can be obtained to put the patient into.

3249. An Emmet operation, for instance, or a simple operation for the removal of a labial cyst. These cases are extremely liable to septic poisoning, are they not?—They may be.

3250. For them to get fair treatment they must get good, pure air, must they not?—Yes.

3251. Do you think it proper that such cases should be put in a general ward where such a risk as I have mentioned exists?—There is always a risk.

3252. Do you think that it is a material risk which can be safely allowed to remain?—No, I do not think that it can be safely allowed to remain so.

3253. Does that remark apply to ophthalmic cases also?—It does.

3254. You have already told us that you do not operate with confidence in the Dunedin Hospital, and that you always fear some danger?—Well, I take extra precautions.

3255. You rely on antiseptic treatment to counteract that danger?—Yes.

3256. And antiseptic treatment has during the past few years almost completely removed the danger of septic trouble after operation?—Yes. In some hospitals it has practically banished the danger for a time.

3257. Now, suppose that a man is as careful as a practitioner ought to be, but given the surroundings which exist in the Dunedin Hospital: with all your precautions, and with all your skill, can septic poisoning always be avoided?—I think there is always a certain amount of danger.

3258. No matter what precautions you may take?—Yes, no matter what precautions you may take.

3259. *The Chairman.*] You say that in the Dunedin Hospital, in its present state, there is a certain amount of danger or risk, notwithstanding all the precautions you may take?—Yes. The air which pervades one ward pervades the whole building, and that is objectionable.

3260. *Mr. Solomon.*] Do you think that it is proper to have a medical school connected with a hospital as defective hygienically as our Hospital is alleged to be?—It is not necessary to get the best results for the purposes of a medical school. Medical students often learn most from bad results.

3261. Dr. DeRenzi has told us that, in his opinion, it was very improper to have a hospital to which a medical school was attached in the hygienic condition in which the Dunedin Hospital is at present, because the students do not get the best teaching where a hospital is so unhygienic?—I certainly think that it would be well if every hospital which has a medical school connected with it were built on the most modern plan of construction, *i.e.*, on the pavilion system. It should especially have proper ground-floor for each bed.

3262. Some authorities tell us that there should be no outbreak of erysipelas in a properly-ventilated hospital, while other doctors have told us that it is impossible to absolutely prevent it always. With which view do you agree?—I think you may have isolated cases under any system.

3263. *The Chairman.*] Arising in a hospital?—It may be introduced there but not generated, *de novo*, as it were, in the institution.

3264. *Mr. Solomon.*] Now, about erysipelas in the Dunedin Hospital?—What has been your experience on that point?—During the last two months I have seen six or seven cases there.

3265. Arisen *de novo* in the Hospital?—It may have been from contagion, or from other causes.

3266. Were these cases brought in from the outside, or did the erysipelas attack patients sent in with other complaints to the Hospital?—They started in the Hospital.

3267. Is that a normal or abnormal state of affairs?—It is an abnormal state of affaits.

3268. If the hygienic condition of the Dunedin Hospital were reasonably satisfactory, do you think that such a state of affairs could exist?—I do not think so. I do not think that we ought to have had as many cases as we have had.

3269. *The Chairman.*] Is it surprising, considering what you know the state of affairs in the Dunedin Hospital to be?—Looking at the faulty construction of the Hospital it is not surprising.

We have had evidence of it, in spite of all the care of the secretary in keeping the whole institution as sweet as possible under the circumstances.

3270. *Mr. Solomon.*] During your twelve years' experience outside of the Hospital, how many cases of erysipelas have you seen?—Only one case outside, and I do not think that it lasted more than a few days altogether.

3271. But that was not within the last two or three months, was it?—It was not.

3272. How much would you say is the length of stay of patients in the Hospital affected by the condition of the institution?—I cannot state that absolutely.

3273. It has been suggested that this Hospital cannot be in a bad state, because, even supposing that there have been three or four cases which have gone wrong from septic poisoning, there have been a very great many cases which did not go wrong. Is that any answer to the fact that cases have gone wrong from septic poisoning?—No. Since the introduction of antiseptic treatment hospitals that are in an unsatisfactory condition may have cases go on splendidly for a time and then septicæmia may occur.

3274. For a while cases may go on splendidly, and then septic trouble may break out in an unaccountable manner?—Yes; but by taking every care you may minimise the danger.

3275. I understand you to mean that under present circumstances you may go for a long time and have everything go on all right, and that then you may have a run of bad cases?—I was extraordinarily successful for a long time in all the cases I operated upon. I do not remember a single case that I operated on in which there was septicæmia.

3276. *The Chairman.*] In the Hospital?—Yes.

3277. You never had a case go wrong?—I have had cases of compound fracture which have suppurated which ought not to have suppurated, but I do not remember a case in which there was septicæmia.

3278. *Mr. Solomon.*] Do you still say that the condition of the Hospital produces a risk of septic trouble?—What I say is that you have the conditions there which may generate it.

3279. *The Chairman.*] But I understand you to say that your precautions have proved sufficient to overcome and control the unfavourable conditions of the Hospital?—Yes.

3280. *Mr. Solomon.*] But it would only be fair to say that notwithstanding these precautions bad results may occur?—They may.

3281. Supposing that the sanitation was satisfactory, do you think that the same results may occur, notwithstanding that skilful operators have taken every proper precaution?—No; there is little or no danger then. Besides, if there were good sanitary surroundings you need not take the same precautions.

3282. Have you noticed any cases of injuries of the knee-joint that have developed symptoms like what we have been discussing after being brought into the Dunedin Hospital?—I remember one case of excision of the knee-joint some months ago which did remarkably well; it healed by first intention; and some five or six weeks afterwards the child got septic sore-throat, and then erysipelas in the limb.

3283. That happened in the Hospital?—Yes. I was just about to turn the child out of the Hospital because it was getting strong and well; the wound in the limb was sound when the child got septic sore-throat, and then it got erysipelas in the limb.

3284. That would be septic poisoning?—There is no doubt about that.

3285. Was there anything in connection with that case to account for what happened, or do you think it was due to unhealthy surroundings?—At that time the ward was in an unhealthy condition. Three of the patients had sore throats, and the head nurse had a sore throat, the latter afterwards getting pneumonia.

3286. Was that Miss C——?—It was the nurse who was attending the boy.

3287. That was nearly two months ago, was it not?—It was about that time.

3288. It is perfectly plain, in these cases at any rate, that the nurses and patients were poisoned in that ward?—I cannot say absolutely that the erysipelas arose in that ward, though the child had been well for some months there.

3289. If the ward had been healthy, was that a surprising state of affairs?—It was.

3290. But if a hospital were in a state that it should not be in, would the state of affairs then be surprising?—No. It was not a properly-constructed ward where the child was.

3291. Then, the result which you found there was not surprising?—It was not surprising to me.

3292. Do you remember the case of a man who came down from Lawrence into the Hospital suffering from a wound in the leg?—I recollect a case that was in the Lawrence Hospital for some months.

3293. That is the case. What happened to him within a few days after his admission?—He was affected with erysipelas in the leg.

3294. He had apparently nothing the matter with him when he came into this Hospital?—I think he had a slightly open wound at the time.

3295. But it was a healthy wound?—I cannot say. He was attended to by another surgeon.

3296. Was it surprising to hear that he should have been attacked with erysipelas?—It did surprise us at the time.

3297. *Mr. Chapman.*] What was the name of that patient?—H——.

3298. And the name of the boy?—R—— F——.

3299. *Mr. Solomon.*] That boy is in the Hospital now?—Yes. He was just going out when he was attacked with erysipelas.

3300. How long had he been in?—Between two and three months, and was just about to leave when he got the erysipelas.

3301. In what condition is he now?—He remains in with a residual abscess still discharging.

3302. How long is it now since he came into the Hospital?—He came in on the 25th March.

3303. Then, he has been over five months in the Hospital?—Yes. The plaster-of-paris had just been taken off his leg when he was attacked.

3304. Do you remember the case of a man named B——?—Yes.

3305. It has been referred to as a typical case of hospitalism. Will you tell us what happened to that man?—That was a very bad accident. A brick-kiln in the North-East Valley fell in, and B——'s comrade was killed. B—— himself had both his legs smashed. One of them was a compound comminuted fracture.

3306. Suppuration set in, did it not?—The case was submitted to thorough antiseptic treatment. The bones were turned out, thoroughly washed out, and placed in position. Some five or six weeks afterwards signs of suppuration appeared round about the fracture.

3307. I suppose you meet Dr. Batchelor continually?—Yes.

3308. He is careful in his operations and in his antiseptic treatment, is he not?—Very careful indeed. He is more careful than I am myself.

3309. He is a skilful surgeon, is he not?—Yes; especially so in the department in which he is specialist.

3310. Dr. Batchelor has told us almost exactly what you have stated to-day, about the use of antiseptics, and the dangers to be avoided. Would you be surprised to learn that in many cases in the Hospital Dr. Batchelor, notwithstanding all the precautions he has taken, has had septic results in abdominal cases which have puzzled him to account for?—I think one always runs a risk unless he performs these operations in an isolated ward.

3311. Could all his skill and precautions prevent the danger?—Not always.

3312. I shall put to you two formal questions which necessarily follow on what you have already told us. Do you, or do you not, agree with Dr. Batchelor that "there are defects in the sanitary condition of the Dunedin Hospital?—Yes, I do; and I think that the whole of the staff are agreed on that subject. The Trustees have always recognised the defects of the Hospital. It is merely a pecuniary matter with the Trustees. They have not had the money to enable them to rectify these things.

3313. Do you also agree with Dr. Batchelor that "these defects are of so serious a character as to be a source of grave danger to the inmates, and call for immediate remedy"?—Yes, I think so. Especially we should have isolated wards.

3314. Can it be fairly said that these statements of complaint are "grossly exaggerated"?—No, I do not think so.

FRIDAY, 5th SEPTEMBER, 1890.

Dr. ROBERT GORDON MACDONALD sworn and examined.

3315. *Mr. Chapman.*] What is your name?—Robert Gordon Macdonald.

3316. What are your medical qualifications?—I am a Licentiate of the Royal College of Physicians, Edinburgh, and a Licentiate of the Faculty of Physicians and Surgeons of Glasgow.

3317. Have you been duly registered in New Zealand?—Yes.

3318. Are you a member of the Honorary Medical Staff of the Dunedin Hospital?—Yes.

3319. How long have you been a member of the honorary staff?—About three years.

3320. How long have you been in practice altogether?—Since 1876.

3321. Most of that time in New Zealand, I suppose?—Yes.

3322. Did you hold any position in the Old Country?—Yes.

3323. What was it?—Resident Surgeon for five years in a workhouse and asylum in Glasgow.

3324. Was that a large establishment?—Yes.

3325. How many people?—It had two thousand beds. It was a general hospital; but we had everything in the institution—workhouse, infirmary, asylums, lying-in institution—all the requirements which go to make a large general hospital.

3326. That would be one of the largest hospitals in Scotland, or even the United Kingdom?—It is the largest institution in Scotland.

3327. In Dunedin you have seen a good deal of general practice, have you not?—Yes.

3328. In the Old Country did you see anything of gynecological practice?—Yes, in the Glasgow Royal Infirmary and Western Infirmary.

3329. When you saw that, what was your connection with the Glasgow Infirmary?—A student simply.

3330. When you were a student there, where were the gynecological cases treated?—Professor Leishman simply had one-half of the surgical ward, with an anteroom attached to it for examinations, or for any special cases.

3331. What was the size of the general surgical ward there? How many beds had it?—Twenty-four.

3332. *The Chairman.*] Do you mean that the whole ward contained twenty-four beds?—Yes.

3333. *Mr. Chapman.*] Has Professor Leishman a high position in this particular branch of work?—He has.

3334. He is one of the most distinguished living gynecologists, is he not?—During my time as a student he was, but I do not know what other men have come to the front since.

3335. Is he a text writer?—Yes, he has written a book.

3336. What is it styled?—"Principles and Practice of Midwifery and Diseases of Women."

3337. Do you know whether he has made a statement that such cases can be properly treated in an ordinary ward?—I am not familiar with it.

3338. Supposing he has made such a statement, would you agree or disagree with it?—Judging

by my former experience as a student I should agree with it, and I see no reason to disagree with it now.

3339. Have you yourself performed abdominal operations in the Dunedin Hospital?—Yes, several.

3340. Recently, or spread over a time?—Spread over a time.

3341. Spread over the three years that you have been on the staff?—Yes.

3342. Have you had good results?—Yes.

3443. Then you have had reason to be satisfied with the results?—Quite satisfied with the results.

3344. We have been told that abdominal operations are more liable to septic mischief than any others—that the vagina is more liable to take up septic mischief than any other part. Is that your opinion?—I do not clearly understand you.

3345. Are abdominal cases more liable to septic mischief than other classes of surgical cases?—No; provided that you use due precautions while the operation is being performed.

3346. Precautions such as what?—Clean instruments and clean hands, and taking every possible care from getting any infection.

3347. Do you regard septicæmia as an infectious disease, or a contagious disease?—Well, I think that the bulk of opinion—I mean of modern opinion—is coming round to the idea that it is largely a disease of contagion—that the poison would be carried direct to the person.

3348. Not from the air but by contact, you mean?—There is a little element of doubt about it, but, given ordinary hygienic conditions, infection from the air is very remote.

3349. You have just told us that modern opinion is tending in the direction of regarding septicæmia as a disease of contagion? Have you any particular authority on that subject?—There are various opinions tending in that direction, but I cannot lay my hands at this moment on the authority that states that positively, but there are various opinions which lead me to think in that direction.

3350. Will you suggest an authority?—Erichsen (vol. i., eighth edition, p. 942), says: "Septic infection from another patient is seldom observed in surgical practice." And Dr. J. Flugge, in his book on "Micro-organisms" (Sydenham Society Publications, vol. cxxxii., p. 744), says: "Hence we have given up the former views that bacteria can pass readily into the blood, and from thence into the organs of the body through the intact lungs or the normal intestine: on the contrary, the body of warm-blooded animals nowhere offers a surface permeable by infective agents so far as is yet known."

3351. The opinion has been expressed by authority that erysipelas never occurs in a proper, well-ventilated hospital?—Do you mean to ask if it is found in all hospitals?

3352. Do you know any hospital in which it does not occasionally occur?—No. It occurred in the Royal and Western Infirmary, Glasgow, and the Royal Infirmary of Edinburgh, and both of these are comparatively new institutions. This is what Hirsch, in his work on "Pathology" (Sydenham Society Publications, vol. cxxii., p. 411), says: "Even in hospitals that are admirably constructed—says Volkmann—that have been made salubrious to the point of luxury, and are perfectly ventilated, even in these there have occurred epidemics of erysipelas of the severest kind, and the most scrupulous cleanliness and care have not succeeded in putting a stop to them." Ample confirmation of this is afforded by the London hospitals, which, as Fergusson says, are never free from erysipelas, notwithstanding the extreme cleanliness practised in them, and despite the most abundant ventilation. In the Hospital St. André, at Bordeaux, which is highly prized as a "model institution," it appears from the statements of Pajos that even the cleanest and best-constructed wards do not escape erysipelas. Ollier records that, for a long period previous to the year 1867, the severest operations had been performed at the Lyons Hospital without erysipelas occurring, but from that date onwards the larger number of the cases operated upon were attacked with erysipelas, although no cause could be found for it in the condition of the place. But the non-dependence of erysipelas upon the above-mentioned factors is proved best of all by its epidemic occurrence outside hospitals, among village populations at large, and not infrequently in coincidence with the development or intensification of the disease in the hospitals. This fact confronts us on a large scale in the North American epidemics, in which the most remarkable circumstance was that the disease was prevalent in country districts much more frequently and much more extensively than in large and populous towns.

3353. Now, as to the Dunedin Hospital: I suppose, like those who have been connected with it, you recognise along with your colleagues of the medical staff that it is not perfect?—That is true.

3354. And you agree with many of the objections that have been made to it?—Yes.

3355. These matters are, I suppose, common ground to a large extent?—Yes.

3356. What do you regard as the imperfections of the Hospital?—What struck me most was the arrangement of the waterclosets and the bath-rooms, the block system of the building, and natural sequence of events which more or less flow from such a system.

3357. I suppose you noticed that the floors and the walls are not altogether what they should be?—They are not.

3358. Did you ever know a hospital in which these things were quite perfect?—No.

3359. Did you hear or read the opinions expressed or suggested by Dr. Truby King as to the wards and waterclosets?—Yes.

3360. His suggestion of throwing two of the wards into one?—Yes; virtually to make two wards into one.

3361. And what about his suggested alterations to the waterclosets?—I think it would suit the purpose. Still there would be faults, as there must be in all human institutions.

3362. But do you regard Dr. King's suggestions as an improvement?—Yes.

3363. And in that way, and the way in which he has suggested, do you think the present building can be satisfactorily dealt with and utilised?—Yes, so far as that can practically be done.

3364. You have spoken about the defects that follow on the fact that the building is built on the block system. We have had some strong opinions expressed about ventilation. What in your opinion is the present condition of matters so far as ventilation is concerned?—It is imperfect.

3365. Do you consider that the building deserves the very severe condemnatory expressions that have been used towards it?—No, I do not.

3366. *The Chairman.*] It should not be condemned?—I may qualify that answer. There is nothing to condemn very severely, but there is ample room for improvement in the institution.

3367. *Mr. Chapman.*] We have been told by one gentleman that in going into a ward, early one morning, so stuffy was it that it made him retch. Have you ever experienced anything like that?—Never.

3368. That is possibly an exaggerated statement, is it not?—I should be inclined to think so.

3369. Have you been very often into the wards yourself?—Yes, at all hours of the day—from 9 o'clock in the morning till 2 or 3 o'clock the following morning.

3370. The Hospital has been spoken of by one gentleman—possibly by more—as being in such an insanitary condition that its condition has largely influenced the surgeons in abstaining from operations. Has that been your experience?—No, it has never stopped me from operating when there was occasion to operate.

3371. Do you know if it has stopped any one else?—I cannot say that I do.

3372. I am, of course, excluding these last few weeks. You say that you do not know that it has stopped any one from operating?—I do not.

3373. You have been a colleague of Dr. Batchelor. Have you beome aware that it has stopped him from operating?—Only from his statement recently.

3374. That is within the last few weeks?—Yes.

3375. Have you formed an opinion as to whether the Hospital is more insanitary than most private dwellings for the performance of operations?—It is a vast improvement on most dwellings for the purposes of operations.

3376. You have been present at consultations when operations have been discussed: that is to say, when the propriety of performing an operation in a particular case has been discussed by the medical staff?—Yes.

3377. Have you been present on many such occasions?—Yes.

3378. In such cases have you known the insanitary condition of the Hospital to be brought up as an element in deciding the question whether an operation should be performed?—No; I do not think I ever heard that question raised at a consultation.

3379. You say that it was never brought into consideration as an element in deciding whether an operation should be performed or not?—It was not. The state of the Hospital was never an element in deciding such a point.

3380. Do you know of any case in which the condition of the Hospital has been an element in a discussion of that sort?—No.

3381. You have been present at consultations at which Dr. Batchelor was present?—Yes.

3382. To any number?—Yes, a large number.

3383. Do you know anything about S—— M——'s case?—Yes; I sent her into the institution.

3384. Then she was a patient of yours?—Yes.

3385. Under what circumstances was she sent into the Hospital by you?—I had attended her in her confinement. Immediately afterwards she drew my attention to an abnormal enlargement of her abdomen, and on further inquiry into her case I discovered that there was an abdominal tumour, which, on still further inquiry, I found out to be an ovarian tumour. Then I informed her husband of the nature of the disease, and said that an operation would require to be performed, but that before anything could be done I should require to have a consultation. I suggested that Dr. Batchelor should be called in, as he is possibly the man in Dunedin most familiar with operations for that kind of disease. The husband consented to my doing so, and went to Dr. Batchelor himself. We had a consultation at her house, and it was ultimately agreed that she should go into the Hospital. That was about a month after her confinement.

3386. Was there a consultation with the staff after that?—I was not on the staff at that time.

3387. Then you lost sight of her?—Except from inquiries from her husband and from Dr. Batchelor.

3388. Do you know when the operation was performed: about the thirty-ninth day after confinement apparently?—It would be about that time.

3389. Have you formed any opinion as to whether or not that was done too soon?—A difficult element enters into that question, because various circumstances may modify it, such as urgency. But failing urgency, it would be desirable to postpone it.

3390. Failing urgency, you say that it would be desirable to postpone it longer than that?—Yes.

3391. Why? What evil results might follow?—The liability to inflammatory or to septic mischief.

3392. Where was the liability to septic mischief in such a case?—From the uterus being still enlarged, and more or less *débris* being discharged from it.

3393. If that were her condition, and with the data you know of, do you think that it is a fair conclusion to attribute her death to anything arising from the state of the Hospital?—No. I think it would be an exceedingly unfair thing to say.

3394. What would you be inclined to attribute it to?—To shock in the one case, to liability to inflammatory mischief, and finally to septic mischief in the then condition of the uterus.

3395. Conditions within the patient?—Yes.

3396. Do you know whether any consultation was held in this case within the meaning of the by-laws, excepting of course the consultation between Dr. Batchelor and yourself?—No.

3397. You know the provisions of the by-laws?—Yes.

3398. Is there anything unreasonable in the provision that a consultation shall be held before operation?—No.

3399. Do you anything of the case of Mrs. A——?—Yes.

3400. Have you had anything to do with her?—Yes, she was my patient.

3401. She came from Seacliff?—Yes.

3402. She was an insane patient?—Yes.

3403. And is so still?—Yes.

3404. What is her condition?—She came in with scrofulous disease of the knee-joint. Then she had tubercular ulcers of the sternum. For about twelve months she was pretty well, and then pelvic abscess set in.

3405. There was a consultation in that case, was there not, in which Dr. Batchelor took part?—Yes.

3406. I understand that he differed from the other medical gentlemen who were present as to what was the matter with the woman?—Yes, there was a difference of opinion.

3407. The operation proved pelvic abscess, did it not, and the woman is still in a bad condition?—Yes.

3408. How was the existence of pelvic abscess proved, do you know?—By the insertion of an aspirating needle.

3409. Was it operated on?—Yes, by cutting it open and examining it.

3410. Then operated on?—Yes.

3411. She has had a long stay in the Hospital?—Yes.

3412. Has her prolonged stay in the Hospital been due to anything in the condition of the Hospital?—No.

3413. To what has it been due?—To disease in the woman herself.

3414. Have you seen her chart, and are you familiar with it?—Yes.

3415. What is she actually suffering from now?—Tubercular disease, with a very variable temperature.

3416. *The Chairman.*] What is the form of her insanity?—She has delusions that she has wealth, but cannot get hold of it, and was incarcerated to allow others to squander it.

3417. Is that usual?—It is very unusual. We wanted several times to get her away, but could not.

3418. *Mr. Carew.*] Where did she come from originally?—From the Christchurch or Timaru district.

3419. How did she get out from Seacliff?—Dr. King sent her down here.

3420. *Mr. Chapman.*] Is the temperature which this woman has fully accounted for by her disease?—Yes.

3421. May her disease be described as chronic?—Yes.

3422. Do you know in which ward she was?—During all the time that I had to do with her she was in ward No. 7.

3423. Do you know what patients were alongside of her?—There were a great number. They change beds often by fresh patients.

3424. During the last few months, did you notice particular patients alongside of her?—There were a number of patients, but, none of them being my cases, I did not take any notice of them. As they were strangers to me I did not take any interest in them.

3425. Do you know if a suggestion was ever made to isolate her?—There was none.

3426. Mrs. S—— was a patient of yours before her admission?—Yes.

3427. You had been treating her outside?—Yes.

3428. In her own house?—Yes.

2429. And you recommended her to go into the Hospital?—Yes.

3430. To go under Mr. Batchelor's care?—Yes.

3431. What was she suffering from?—Chronic metritis, laceration of the os, and ovarian pains. When she came to me she complained of pain, and an unhealthy uterine—or you may call it vaginal, if you like—discharge.

3432. Any other symptoms?—Attacks of feverishness and occasional rigours.

3433. Anything else?—Not that I can remember.

3434. *The Chairman.*] How long was that before she went into the Hospital?—Up to immediately before going in. I had had her for a month or so under treatment outside.

3435. *Mr. Chapman.*] You had examined her, and found what was the condition of her uterus?—Yes.

3436. And you then advised her to go into the Hospital and undergo this operation?—Yes.

3437. Were you present at the operation?—No; I came in when Dr. Batchelor was about finishing it.

3438. *The Chairman.*] Did you suggest the nature of the operation, when you advised that she should undergo it?—I explained to her the the probable cause of her illness, and suggested that she had better consult Dr. Batchelor as to whether he would perform an Emmet's operation or not.

3439. *Mr. Chapman.*] Had you any idea that the Hospital was a dangerous place in which to perform such an operation?—No, I had seen several such operations performed there with no ill effects.

3440. You have seen her chart, have you not?—No, I cannot say that I have. I saw it from a distance, as I was passing from one ward to another, but I did not inspect it particularly.

3441. You did not inspect it closely?—I did not.

3442. Assuming that her temperature was 101° on the night before operation, and 100° on the morning of operation, and knowing what you do of her condition, would you consider it safe to operate under these circumstances?—No.

3443. Why not?—Because such a temperature means that there is some mischief of some description going on internally.

3444. That would be sufficient to warn you?—Yes.

3445. And the presence of the discharge you have spoken of?—Yes.

3446. *The Chairman.*] Just before we leave the matter of the temperature I should like to ask you if you can give any explanation why, on this occasion only, the temperature should rise in the evening and drop in the morning?—I do not think that absolute reliance can be placed on these temperatures. They are generally correct; still, I would not rely on them absolutely.

3447. You do not think that great reliance can be placed on them?—You can rely on them generally, but I would not pin my faith absolutely on their correctness. Various little mistakes may occur. She was liable to have ups and downs of temperature, as she had several rigours while at home.

3448. *Mr. Chapman.*] Now, as to the discharge which has been spoken about: would that have any effect in your mind in determining to operate?—Yes, it would.

3449. In what way?—In preventing me—at all events, in deterring me—from operating.

3450. Supposing you found such a discharge present, you would not operate?—Not until the discharge was corrected.

3451. You would endeavour first to correct it, and then operate?—Yes.

3452. If you knew, as you did know in this case yourself, that the woman had shivering fits, you would connect them, would you not, with the temperature and the discharge?—Yes.

3453. We have heard that Dr. Batchelor was not in the ward on the morning of the operation, and that he did not see the patient until she was brought into the operating-theatre. Do you usually see your patients on the same day before you operate?—That would depend on the gravity of the case. If it were a grave operation, I should, but if it were a trifling operation I should not.

3454. Where do you draw the line?—If I thought that the operation might possibly affect the life of the patient I would go and see her before she was moved out of the ward, but in a trifling case, as the amputation of a finger, I would not. Of course, every man is a law unto himself on matters of detail like this.

3455. Do you take any trouble yourself to ascertain the condition of your patient?—Certainly. I satisfy myself that the patient is in a proper condition to be operated on.

3456. How do you ascertain from the staff what details have been attended to? If you have not seen the patient, do you make any inquiry?—That will depend on the nature of the operation. If it is a major operation I would make all inquiries myself, but not in minor operations, as I trust to the nurse,

3457. You mean that you would risk a finger, but not risk life?—Exactly.

3458. Dr. Batchelor has himself said that the nurse did not inform him that there had been any rise of temperature?—She ought to have done so.

3459. Suppose that she did not, is there any other way of ascertaining it?—He could go himself and make inquiries.

3460. Walked to have seen the chart?—Yes.

3461. As the nurse who attended her was in attendance in the operating-room, I suppose that we may conclude that that would have been easily possible?—Yes.

3462. This patient died after the operation. Now, knowing the condition of the discharge from the uterus and vagina, and assuming that this high temperature, indicated by the chart, existed, would it be surprising to you that fever should have set in?—It was likely enough to have occurred.

3463. Were you present at the *post-mortem*?—Yes.

3464. Did you actually take any part in it?—No, I was merely there as an onlooker.

3465. It was found at the *post-mortem* that she died of septicæmia, was it not?—Yes.

3466. Did you form any opinion yourself as to how that occurred?—Yes.

3467. What was that opinion?—That septicæmia was caused by septic matter travelling from the uterus along the tubes into the peritoneal cavity, or along the lymphatics.

3468. Did you form any opinion yourself as to the origin of that septic matter?—Yes. That it had arisen from causes within the woman herself, intensified by the operation.

3469. That was your opinion then?—Yes.

3470. Dr. Batchelor has stated in his letter to the Trustees: "I most positively assert that I consider that Mrs. S——'s death was entirely due to unhealthy influences." Are you of that opinion?—No.

3471. Can you see any grounds for saying that Hospital influences had anything to do with the case?—No.

3472. Dr. Batchelor further says: "I am convinced that if this unfortunate patient had been operated on in a healthy ward with healthy surroundings she would now be alive and well." Is that your opinion?—The probabilities are that operating on the same conditions the same thing would have occurred.

3473. However, she was operated on?—Yes.

3474. We have been told about the case of a Mrs. P——. Do you know anything of that?—I saw Dr. Batchelor operate on her.

3475. Mrs. P—— was in the ward discharging pus at the time of Mrs. S——'s and Mrs. T——'s illness. Did you know of that?—When Dr. Batchelor operated on her there was pus. I

saw him attending to her several times afterwards, but I did not take any interest in or notice of her case, as she was not a patient of mine.

3476. If it had continued up to that time would it have any possible connection with these deaths in that ward?—I do not understand your question.

3477. Do you know whether there was a continuing discharge of pus at this time or not?—I do not.

3478. Can you tell us that from her chart? Can you form any opinion of that from her chart?—Her chart is one from which you would reasonably suspect that there had been pus discharging.

3479. Up to what date?—To August.

3480. If there were grounds for that assumption, would you place an Emmet's case alongside of her?—Yes; under antiseptic conditions.

3481. What sort of person was Mrs. S——: was she a strong, robust woman?—She was not strong, but she was fairly healthy. Though by no means strong, I should say that she was a woman in ordinary health.

3482. Do you remember the general question of the sanitary condition of the Hospital being raised at any meeting of the medical staff since you joined it?—We had several meetings for that purpose.

3483. Since Dr. Batchelor made his complaint?—Since his return from Melbourne.

3484. But prior to that, do you remember at any meeting of the medical staff the question of the alleged insanitary condition of the Hospital being brought up?—No, I do not remember. It is possible that it may have been, but I do not remember it.

3485. *Mr. Solomon.*] You have told us that you saw some gynecological operations in your practice as a student. Are you of opinion that gynecological cases should be treated in the general surgical wards of a hospital?—From what I saw, they can be treated very well there.

3486. That is not an answer. In your opinion, ought gynecological cases to be treated in the general ward of a hospital?—No person would say it ought to be, unless it is a matter of compulsion.

3487. Is it desirable, in your opinion—I will put in that way—that gynecological cases should be treated in the same ward as general surgical cases?—They can be treated quite well there.

3488. I must press for a better answer. Is it desirable, in your opinion, to treat them in the same ward as general surgical cases?—I see no objection to it.

3489. Do you recognise Lawson Tait as an authority on this subject?—Yes.

3490. Do you know what his opinion on the subject is?—Yes.

3491. Do you disagree with it?—All specialists are apt to run their subject off its legs.

3492. Are you a specialist in any subject?—No.

3493. Do you agree with Tait that it is highly undesirable that such cases should be treated in a general surgical ward?—No.

3494. Do you think that ophthalmic cases should be treated in a general surgical ward?—That would depend largely on the kind of cases.

3495. Such as would come under the care of any specialist in the Dunedin Hospital. Should they be treated in an ordinary surgical ward?—That again would depend on the kind of cases.

3406. Do you think it good policy that the Hospital should remain without a special ward for ophthalmic cases?—I should say that ophthalmic cases can be treated in an ordinary ward perfectly well.

3497. Do you see any objection to ophthalmic cases being treated in an ordinary surgical ward?—There are objections.

3498. Would you recommend that a special ward should be given for them?—For certain cases, I should.

3499. Are there any means of treating ophthalmic cases in a separate ward in the Dunedin Hospital?—There is a special ward allotted for special cases.

3500. Where is it?—One of the vacant wards.

3501. Which are the vacant wards?—They vary from time to time.

3202. Which is the vacant ward now?—I do not know.

3503. You do not think that, as a general rule, there is any necessity for having a separate ward for ophthalmic cases?—What I say is that many ophthalmic cases can be treated perfectly well in an ordinary ward, but there are some cases which might be better for having a special ward.

3504. Is there a special ward in the Dunedin Hospital in which ophthalmic cases are taken separately?—Yes, there is.

3505. As a general rule?—The specialist has a special ward for himself.

3506. In which there are no other cases?—I do not know that. But he has a special ward for himself.

3507. Do you mean to tell me that the ophthalmic cases are taken in a special ward?—I do not know that all are, but he has a special ward.

3508. I suppose you mean that he has a ward for female cases only?—Yes.

3509. Has he one for males only?—I do not know.

3510. Do you think that there should be?—Yes, I think it would be a good thing.

2511. *The Chairman.*] Do you mean for general cases?—Yes; but I still say that many ophthalmic cases can be treated perfectly well in a general ward.

3512. *Mr. Solomon.*] Is there any necessity for amending the Hospital regulations in that direction?—Yes, I think there should be a ward for special cases. As I said before, there may arise special cases which it would be better to have treated in a special ward; but the very same question applies to all branches of medicine, and not to ophthalmology alone.

3513. You have performed abdominal operations in the Dunedin Hospital with varying success, have you not?—Yes.

3514. We are only dealing with the past eighteen months, you understand. During that time how many operations have you performed in the Hospital?—I cannot say.

3515. If you will kindly look over this list [handed to witness] you will find, I think, that you have performed only one abdominal section?—I cannot say at a moment's notice. I should want time to pick them out.

3516. According to that list you have only performed one abdominal section during that time?—I think there are more: [after a pause] Yes, I opened a hydatid cyst in one case, and strangulated hernia in another; and I am certain other cases also.

3517. Would you call them abdominal operations?—Yes, because the abdomen was opened. It does not matter what the operation was for, as any opening of the abdomen is an abdominal section.

3518. In that list there is only one case of abdominal section?—That list is wrong then.

3519. At all events, in that case the patient died, after becoming delirious, from exhaustion?—That was a case of cancer in the intestines, and the woman was *in extremis* in any case.

3520. I understand that you do not agree with all the reforms urged by Dr. Batchelor?—Not with them all. Many of them are correct.

3521. May I ask, on what terms are you with Dr. Batchelor?—On good enough terms.

3522. For instance, do you speak to him?—Yes, when I am spoken to.

3523. Is it or is it not the fact that in this matter there are in the Hospital at the present time three gentlemen who have systematically opposed Dr. Batchelor on this question: Dr. Coughtrey, Dr. Jeffcoat, and yourself?—That is untrue.

Mr. Carew: In what matter?

Mr. Solomon: Hospital reform.

3524. *Mr. Solomon.*] I suppose that I shall not be going outside the mark when I say that the relationship between you and Dr. Batchelor is strained?—Well, so far as I am concerned, it is not in the slightest degree strained.

3525. Have not such remarks as "scoundrel" passed between you?—Many remarks have passed between us.

3526. Did not such remarks as "scoundrel" pass between you at a meeting of the hospital staff?—That is possible.

3527. Have you spoken together since then on friendly terms?—Yes.

3528. Do you approve of the system of ventilation now in the Hospital?—So far as it goes it is fairly good, but it may be improved.

3529. Is it in accordance with the principles of modern sanitation?—It is certainly not up to present ideas.

3530. Is it fairly up to them?—Yes, it is fairly good.

3531. Did you hear what Dr. Truby King said when he was in the witness-box?—No.

3532. But you say that the ventilation is fairly up to modern requirements?—Yes.

3533. Is it a requirement of modern ventilation that there should be a continuous current of pure air through the wards in which the patients are placed?—Yes.

3534. Is there any system here of securing such a current of air?—There is a system.

3535. How is it secured?—By means of openings and ventilators over the windows, and over in the blind wall on the opposite side of the ward.

3536. What is the size of the ventilators in the blind wall?—I do not know.

9537. Do you not think it necessary to know that, in order to give an opinion?—No. It simply strikes me that the condition of the atmosphere as I go into the wards is fairly good.

3538. Supposing that the windows are closed, is there the requisite current of air?—No.

3539. Do you think it possible to keep these windows open in the winter time for the purpose of ventilation?—It could be made perfectly possible to do so.

3540. Could it be done at the present time?—No.

3541. You have just told us that if these windows are closed there is not room for the admission of a proper current of air, and yet you say that the ventilation is fairly up to modern requirements. Is that correct or not?—You are twisting the matter.

3542. If so, you have twisted it yourself. Is it or is it not a requirement of modern ventilation that there should be a continuous current of air throughout the wards?—It is.

3543. Is there any system of procuring a free draught from the windows if the windows are closed?—No.

3544. Is it possible in our climate during winter time to keep these windows open without danger to the patients?—Yes.

3545. Are they kept open day and night?—They can be kept open perfectly well.

3546. In the stormy weather that we have in the winter can they be kept open without any danger of draught?—They may be.

3547. Suppose that the windows were kept continually open, in your opinion would there then be sufficient ventilation?—I can only give you an idea of how it strikes my nose on entering the room.

3548. Do you, as a modern physician, mean to tell me that you consider it is sufficient knowledge of how ventilation is to say that you tell it as how it strikes your nose?—Well, I have not gone into the matter further than how it strikes one's nasal organs.

3549. What is the ventilation-space?—Fourteen hundred cubic feet per patient.

3550. Is that sufficient?—Quite sufficient.

3551. In surgical cases?—Yes.

3552. Then, you disagree with these authorities who say that 2,000 cubic feet is a minimum?—They vary from 1,500ft.

3553. Can you show me any authority who says that 1,400 cubic feet is sufficient in surgical cases?—I think Park says 1,500ft. is enough.

3554. I was asking you for the ventilation—not the space per patient?—I should want you to tell me the area to be ventilated.

3555. What are the modern requirements in regard to ventilation: how many windows should there be to a patient, or how many patients to a window?—These are matters of detail which I have not gone into.

3556. Do you know what is the most approved method of ventilation in modern times? I suppose you have heard of cross-ventilation? Is it not the generally accepted theory?—Yes.

3557. Is there any system of cross-ventilation in the Dunedin Hospital?—Yes.

3558. Is the system not a direct contravention of the modern principles of ventilation? Tell me what is the ventilation by window-space, and how many patients per window there are?—I tell you again that that is a matter of detail which I have not gone into.

3559. Do you know anything about it?—No.

3560. Do the authorities say that it is either a wise or proper thing that the means of ventilation in a hospital should be by means of the chimneys and windows? Do you think that the authorities admit that?—No. I think that there should be other means.

3561. Are there other means here?—There are windows, chimneys, and holes in the blind wall.

3562. Yet you say that the existing ventilation is fairly up to modern requirements. On what do you base that statement?—On how it strikes myself.

3563. And you have already told us that your nose is the only thing by what you come to that conclusion?—I think it is a very good test.

3564. Though there is no cross-ventilation, though the window-space per bed is only half what it should be, and though the only practical means of ventilation is by the windows, which cannot be kept open at certain times of the year, you still mean to say that the ventilation is fairly up to modern requirements?—Yes.

3565. Though it violates all the principles of modern science, you say that it is fairly up to what is required?—I do.

3566. Dr. Truby King is one of the modern school, is he not?—Yes, he is a modern physician, so far as coming lately from college is concerned.

3567. He is one of the modern school who have devoted more attention to these subjects than the older ones?—I do not know.

3568. Would you be surprised to hear that, according to Dr. King, by the system of ventilation here there is only sufficient fresh air introduced into the wards of the Dunedin Hospital for nine patients at the outside. Can you contradict that?—No.

3569. Are you still of opinion that the ventilation is fairly sufficient?—I still express that opinion, as being how the thing strikes me.

3570. I tell you again that Dr. King says that, under the present system of ventilation, that the wards are not sufficiently ventilated for more than nine patients each. Will you contradict that?—I cannot swear that. I can only speak of the thing as it strikes myself.

3571. I do not ask you to take that responsibility in the meantime. Dr. De Renzi states that the wards are not sufficiently ventilated for more than eight persons. Will you contradict him?—I will not venture on any contradiction.

3572. Well, we will drop the ventilation. Are you satisfied with the walls?—No.

3573. What is wrong about them?—They have uneven surfaces.

3574. Which are calculated to favour the reception of micro-organisms?—Yes.

3575. Do you approve of the floors?—No.

3576. Are not the floors in direct contravention of what is required by modern principles?—The floors are not good.

3577. Will you please answer my question?—It is a very difficult question to answer.

3578. Do not modern requirements say that the floors should have a very smooth surface, and be constructed so as to specially reject germs?—Yes.

3579. Are not the floors of the Dunedin Hospital of such a character as to specially favour the retention of germs?—Yes.

3580. And as to the waterclosets: are they not in direct opposition to what all authorities on the subject say they should be?—They are not good.

3581. Are they not very bad?—They are certainly not good.

3582. I ask you again: are they not very bad?—And I repeat that they are not good.

3583. That is not an answer. Are they not very bad?—They are not.

3584. Is it not the position taken up by all writers on the subject of sanitation that waterclosets ought not to open directly into the wards?—Yes.

3585. Is not that universally admitted?—I do not know.

3586. Can you show me one modern authority to the contrary?—No.

3587. Do not the closets in the Dunedin Hospital open directly into the wards?—Virtually, but not actually, they do.

3588. Is the position of the baths satisfactory?—No.

3589. Are they too not opposed to the opinions of modern writers on the subject?—They are not good.

3590. And the lavatories, are they not in the same position?—Yes; they are in a bad position.

3591. Now, as to the general construction of the Hospital, is it in accordance with or opposed to modern requirements?—It is opposed to modern requirements.

3592. Do not all modern writers on the subject say that the wards should be built so that the sunlight shall come into them all day long, if possible?—Yes.

3593. And that is quite impossible in the Dunedin Hospital?—Yes.

3594. Is that a matter practically of no importance?—It is a matter of very great importance.

3595. Is faulty ventilation a matter of much importance?—It is.

3596. Is it a matter of very great importance?—It is.

3597. Are the matters of the walls being specially made to prevent the absorption of germs, the waterclosets, lavatories, and baths being in better positions, also of importance?—Yes.

3598. Then, in all these things may we say that this Hospital contravenes all modern principles?—Yes, to a degree.

3599. Can there be any question of degree as to the position of the waterclosets?—There might no doubt be improvements in the position of the waterclosets.

3600. What about the number of patients in a ward?—I do not know how many there were.

3601. Is the Hospital overcrowded at the present time?—No.

3602. Nor any of the wards?—No. There is not a large number of patients in them just now.

3603. You have misunderstood my proposition. I meant to ask how many patients can be placed in a surgical ward without contravening the acknowledged requirements as to bed-space, and so on?—I should allow one patient for 1,500 cubic feet of space.

3604. Can you tell me how many patients occupy these wards?—Do you mean according to that proportion?

3605. Well, how far ought the beds to be apart?—How many feet one bed should be from another?

3606. Yes.—That again I would not say. It would depend on the floor-space.

3607. Cannot you say how far apart they should be?—Giving each bed 72ft. of square space?

3608. How far should the beds be from one another?—I do not exactly know, but I should say from 5ft. to 6ft.

3609. How far apart are they in the Dunedin Hospital?—I do not know. I have never measured them.

3610. Yet you told Mr. Chapman that you cannot say whether they are too close together or not. Have you never formed a conclusion on that point?—No.

3611. Should you be surprised to hear that there is not more than 3ft. between the beds in the Dunedin Hospital?—I should be.

3612. And that in the case of a great many beds there is only 18in. between them?—Yes, I should be surprised. If that is so, it is too close.

Mr. Chapman: Whose evidence was that?

Mr. Solomon: Dr. Closs's.

The Chairman: That was what he called the touching distance.

3613. *Mr. Solomon.*] How much square space per patient is necessary do you think?—From 70ft. to 100ft. is the space mentioned.

3614. What is your opinion?—I am no authority on the subject. I merely take it as the authorities give it.

3615. Can you go nearer to it than saying from 70ft. to 100ft.?—No. I am merely guided by the opinions in the books, and none of the men who have given evidence here on the subject know anything about it themselves. They have merely taken their evidence from the books.

3616. You were a member of the medical staff when this report was sent in?—Yes.

3617. I find this paragraph in that report: "We repeat our main contentions that a floor space of 70 square feet in the large wards and of 62 square feet in the towers per patient is insufficient, and should be increased to 100 by reducing the number of beds; that a cubic space of 1,030 cublic feet of available air in the large wards, and of 872 cubic feet in the towers, per head is also very insufficient and should be increased to at least 1,200; and that there is no satisfactory system of ventilation to insure the purity of the air in the wards, but that such a system could readily be applied at small expense, and might easily be combined with a good heating arrangement."

Witness: Who said so?

Mr. Solomon. The medical staff, of which you were a member.

3618. *The Chairman.*] First of all, do you acknowledge that report?—Is that Dr. Lindo Ferguson's report?

3619. [Mr. Solomon again reads the previous quotation.]—Yes, that is Dr. Lindo Ferguson's report. There, again, you see Dr. Ferguson gets his information from the books.

3620. That was the unanimous report of the staff?—I do not know that I ever signed it.

3621. Was it not considered by the staff?—That is quite possible.

3622. Is it correct?—I do not know.

3623. Do you say, despite that paragraph, that it was not agreed to by the staff?—I think that paragraph is reasonable enough.

3624. Can you tell me, now, whether you gave your assent to that report?—I do not know.

3625. Do you remember anything about it?—I forget details, or whether I assented to it or not.

3826. Do you know whether that report was sent in to the Trustees as the unanimous report of the staff?—I forget all the details of the matter.

3627. I must press for a more definite answer. Was it or was it not sent in as the staff's report?—I do not know.

3628. *The Chairman.*] Were you present at the meeting at which that report was adopted?—I was present when it was read, but I do not know whether it was put in as the unanimous report of the staff.

3629. *Mr. Solomon.*] There was a resolution passed at that meeting unanimously adopting that report?—Oh, that is very easy in a matter of this kind; but you require to be a member of the staff before you can understand it.

3530. Do you agree with this: "As, practically, there are only two walls available for beds, one of which in each ward is broken up by the chimney-breast and a doorway, the beds are necessarily placed too close to each other for either the health or comfort of the patients"?—Yes, I think that is true.

3631. So that in the Dunedin Hospital at the present time the beds are placed too close together for the health or comfort of the patients? And you say that that is a true statement?—It is, provided always that the facts are correct.

3632. Are they correct or not?—I do not know.

3633. Yet we find you, a member of the staff, taking part in the consideration of that report, and now saying that you do not know whether the report was correct or not? I will read you the minute of the staff bearing upon the matter:—"Dr. Lindo Ferguson read a paper, and showed a plan prepared by him containing suggestions whereby the present hygienic defects in the ward-construction of the Hospital might be amended. The late hour prevented any discussion thereon, which was postponed till next meeting. Dr. Ferguson was thanked for the trouble he had taken in the matter, and the secretary was directed to convey the following resolution to the Trustees:—'That the honorary medical staff are engaged considering and preparing a report dealing with the present defects in the hygienic condition of the Hospital, and embodying suggestions by which these may be obviated.'" At that meeting I notice that Dr. Gordon Macdonald was present. At the next meeting, when Dr. Gordon Macdonald was not present, this resolution was passed: "Dr. L. Ferguson's suggestions for remedying the existing hygienic defects came up for discussion. Those present were unanimous as to the main contentions therein contained, but some difference of opinion prevailed as to the details of their being carried out. The Secretary was requested to see such members of the staff as were absent from the meeting, and—if they were unanimous as to the main contentions—also to forward copies of the suggestions to the Trustees, and to add a paragraph to the effect that they were unanimous as to the main contentions, but were not entirely agreed as to the methods of carrying them out."—As I thought, I was not present when the report was adopted. Perhaps you will now see your way, Mr. Solomon, to withdraw the hard strictures that you have passed upon me.

3634. I did not make any strictures, but I withdraw anything which may have offended you. Then you were not a party to that report?—I was not.

3635. Was it ever brought to your attention?—Yes.

3636. Did anybody ask you for your assent, in writing, to it?—No.

3637. Did you ever disapprove of it in writing?—No.

3638. Do you disapprove of it?—I do.

3639. Did you express any disapproval?—There was no use disapproving. The fact is, there are two parties on the staff—a University party and a non-University party, and what the University party want they carry with a high hand.

3640. Now, it is said there are two parties on the Hospital staff—a University party and a non-University party—and that if one party wants one thing the other party vote against it. Can you tell us the members of these parties?—No, I cannot.

3641. Are you of the University party?—No.

3642. Are you of the non-University party?—Yes.

3643. Is Dr. Coughtrey?—He is not attached to the University.

3644. Is Dr. Jeffcoat?—No.

3645. Is Dr. Maunsell?—Yes.

3646. And Dr. Batchelor, Dr. Roberts, and Dr. Lindo Ferguson are also lecturers there?—Yes; and I may say that whatever these men say is law, and whatever the other men say is not law.

3647. Yes; whatever these men say, Dr. Coughtrey, Dr. Jeffcoat, Dr. Macdonald, and Dr. Stenhouse say the opposite?—No; they do not say anything, they remain silent.

3648. Have they a majority?—They had at one time, but apparently they have not now.

3649. Well, is it not a fact that, from the time Dr. Lindo Ferguson's report was brought up, you four have been in vigorous opposition to Dr. Batchelor?—That is not true; it is a lie.

3650. You are a member of the opposing party, at any rate?—There is no opposing party to hospital reform.

3651. Well, of the non-University party?—Yes; or at any rate, they say so.

3652. Do you not know what Dr. Stenhouse is?—I never asked him. Let him answer for himself; I have quite enough to do to answer for myself.

3653. Do you not know that a report was sent in by the medical staff?—No.

3654. Did you approve of the recommendations in this report? Were you a party to it, or were you not?—That was the University-party's business.

3655. But it is a report by the medical staff?—It is a report by Dr. Lindo Ferguson.

3656. Do you not know that when it was sent in to the Trustees it was sent in as the report of the medical staff?—No.

3657. *The Chairman.*] Did you ever receive a copy of the resolution of the staff?—No.

3658. *Mr. Solomon.*] Whether you were a party or not, do you agree with this statement: "The beds are necessarily placed too close together for either the health or the comfort of the patients"?—That, of course, will depend on the cubic space.

3659. Never mind about the cubic space. Do you agree that the beds in the Dunedin Hospital, as they are at the present day, are necessarily placed too close together for either the health or comfort of the patients?—It is possible enough, but it is not a matter of how close the beds are together if there is proper cubic space.

3660. Now, a thorough system of ventilation is essential to the life of patients in a Hospital?—Yes.

3661. And there is considerable risk from there being no such proper means of ventilation?—There is.

3662. Well, you have admitted to us it is possible the beds are too close for the health of the patients, that the system of ventilation is imperfect, that the Hospital contravenes modern principles as to construction, that the waterclosets and so on are where they should not be. Do you contradict the statements of all the witnesses who have been called on Dr. Batchelor's side who say that on account of that the patients run a material risk?—If all these things are true, they do run a risk.

3663. Do they run a material risk?—Yes, they do.

3664. Will you tell us the extent to which they run a risk?—Well, all the matters you have mentioned are matters of degree, and the degree of risk they run depends on the things you have stated being all true.

3665. Do they run a material risk in consequence, if these things are true?—Certainly they do.

3666. And you have said yourself that they are true?—Well, to a certain extent they are all deficient, and to a certain extent the patients run a risk in consequence.

3667. Do you think that under those circumstances things should be allowed to remain as they are?—No, I think improvements should be made.

3668. You have said that in consequence of the defects you have pointed out the patients run a material risk. Can you deny that the defects are of so serious a character as to be a source of grave danger, and call for immediate remedy?—To a certain extent that is correct.

3669. Can you or can you not deny—Yes or No, and then explain if you like—that this proposition is true: that the defects in the Dunedin Hospital are of so serious a character as to be a source of grave danger to the inmates, and call for immediate remedy?—I do not agree exactly with the wording of it.

3670. Do you agree with the spirit of it?—The spirit of it is correct.

2671. *Mr. Chapman.*] Is it exaggerated?—It is.

3672. It is a matter of degree?—Yes.

3673. And you have not found any appreciable evils result?—Not in my experience. I have had no ill effects from patients being in the Hospital, and have had no such effects among patients I have had to deal with. They got on perfectly well.

3674. You have been asked about special wards, and you admit that in some cases it would be better to have them?—Yes.

3675. What are the special conditions of an ophthalmic ward?—A particular arrangement of light.

3676. And in that it differs from other wards?—Yes.

3677. *Mr. Solomon.*] In my examination I omitted to ask a question. It was this: Were you present at a discussion by the staff on this question of special wards, when Dr. Maunsell said: "Of late years surgery and medicine had progressed by leaps and bounds, so that now they were compelled to specialise in such branches as ophthalmology, gynecology, and special surgery, for it was impossible for one man, no matter what his energy and ability, to grasp the whole range of these subjects. The sooner, therefore, that they recognised that they must have special wards here the better. To his mind there could be no advance in surgery or medicine unless they specialised. Dr. Gordon Macdonald agreed with Dr. Maunsell in regard to specialising, but he did not approve of going on with additions to the present building. He would much rather see a new building altogether." Is that correct?—Yes.

3678. *The Chairman.*] What date is that?—March of last year.

3679. *Mr. Chapman.*] That was after the suggestion to spend £8,000 in some particular way, was it?—I really forget.

3680. Supposing you had an opportunity of getting special wards, in what order of urgency would you take them—for what classes of cases first?—Eye diseases would be one, abdominal diseases would be another.

3681. And what would be the others?—I would really require to think them over before giving an answer.

3682. That is, isolating patients for their own sake?—Yes.

3683. Are there cases which you would isolate for the sake of others?—Yes.

3684. What are they?—Erysipelas, hospital gangrene, patients suffering from phthisis, and patients suffering from pneumonia. If I was to go on I think I should really come to give every disease a separate ward.

3685. That is, give each disease a separate room?—Yes; there is no end to it.

3686. In what order of urgency would you take them, supposing your funds were limited?—I would take first those in which there were danger of infection. The most urgent of any would be erysipelas and hospital gangrene cases; then eye diseases; next, abdominal cases; and then would come the separation of phthisis, and pneumonia.

3687. In the report Mr. Solomon read Dr. Batchelor is reported to have said: "By the expenditure of £8,000 the building can be made a perfectly good hospital of itself—a sample hospital for the colony." Do you remember that?—Yes.

3688. Then there were several other speakers, after whom Dr. Maunsell is reported to have said that "the sooner, therefore, that they recognised that they must have special wards here the better; to his mind there could be no advance in medicine or surgery unless they specialised." The report also says: "Dr. Gordon Macdonald agreed with Dr. Maunsell with regard to specialising, but he did not approve of going on with additions to the present building. He would much rather see a new building altogether"?—Yes; and I think that is true still.

3689. You did not reckon with the taxpayer at that particular moment?—No.

3690. You appear in the matter of hospital reform to have outdone Dr. Maunsell and Dr. Batchelor?—Yes.

3691. Now, you were asked whether you would give an opinion upon certain matters of construction and so on. You said you had no original opinion, but you referred to books. The reason that you rely on authorities in such matters is that you have not crammed up authorities about it? —That is so. There is really nothing to cram up. Any man here who pretends to be an authority has merely cribbed his information out of the books.

3692. *The Chairman.*] You said you did not care how close the beds were as long as there was sufficient cubic space? I suppose there is a reason for the authorities fixing a certain distance between the beds?—Yes; that is a matter of detail. It is for the easy working of the institution.

3693. If the surgical beds were close the nurses' dresses might touch first one bed and then another?—That would be objectionable.

3694. Or if a patient getting out of bed touched another bed?—That would also be objectionable.

3695. So that really it does matter how close the beds are together?—Well, they should not be too close.

3696. What would be a reasonable amount?—I have not gone into the matter specially, but 5ft. would be a fair amount.

3697. But if you were putting two infectious cases near one another, how far apart would you put them?—That is a matter entirely for the ratepayers.

3698. But if you were looking after the health of the patients, would you think them too close together?—Yes, I would.

3699. Would you say it would not be right?—It would not be right.

3700. That would be the ratepayers' guide. But suppose you have a ward, and you have two cases—one infectious and one you would be afraid would be infected?—Certainly infectious cases would be required to be placed as far from one another as possible; but I would be compelled to be guided by the ratepayers.

3701. Then, if you had to put them closer than what you think would be right, would it be a satisfactory state of things?—No; I think it would not.

Dr. MAUNSELL re-examined.

3702. *Mr. Chapman.*] Do you remember the case of S—— M——, the case operated on by Dr. Batchelor, and mentioned in the *New Zealand Medical Journal?* Tell me the history of the case?—[After looking at entry in the case-book] Yes; I remember it now.

3703. I suppose you saw her from time to time?—Yes. I believe she was in the same ward as a case that had been operated on a few days before.

3704. Would you have put down her case, which was in the same ward as ordinary cases, as one of septic poisoning due to the Hospital?—As well as I remember that case was not in the ward in which that case of mine was. If I remember rightly, this case was in No. 7 ward with a number of septic cases for a week or two before operation. It was after the operation that it was removed down to ward No. 3, which was a separate ward in which my patient was, and she was put alongside of her.

3705. Were you aware that she had been operated on before she had recovered from her puerperal period?—No, I do not remember that. I had not learned her previous history.

3706. Do you consider that her case was due to the air of the ward, or to septic trouble?—I think she may have got it in No. 7 ward, but I am certain she did not get it in No. 3.

3707. Did you attribute it to that at the time?—I do not remember.

3708. Was it attributed to that by anyone at the time?—I do not remember the particular circumstances of that case, so that I cannot state with absolute certainty.

3709. Do you remember the case of J—— F——: the case of a sloughing tumour?—How long ago is it since that case occurred?

3710. In October, 1887?—What was her age, and where did she come from?

3711. She was sixty-three years of age, and came from Milton. Do you remember her?—No, I do not remember her by name.

3712. I see she died from "intestinal perforation and peritonitis," and that Drs. Batchelor, Maunsell, Davis, and Colquhoun, were present at the consultation?—That must have been a long time ago—possibly three years.

3713. Then you do not remember it?—No, I do not. I might if I heard the whole of her history.

3714. You spoke the other day about a man named H——. He came from Lawrence, did he not?—I was asked some questions about him.

3715. That was a case of yours, was it not?—No.

3716. Then it was a case of Dr. Brown's?—Yes. I was merely asked a question about it.

3717. Do you remember Dr. Brown lecturing to his students on that case, and telling them that it was a case of erysipelas from exposure in bringing the man down country?—It may have been that.

3718. Was that Dr. Brown's account?—It may have been the correct account.

3719. Do you remember the case of B——?—Yes.

3720. Did he make any complaints to you after his admission to the Hospital?—No.

3721. Do you remember Mrs. T——'s case: the case of an operation of the womb, a secondary operation having to be performed, and the woman ultimately dying?—Yes.

3722. Were you present at that operation?—I was.

3723. Did you notice her condition immediately after the operation?—Well, her condition immediately after the operation seemed to be fairly good. There certainly was a fair amount of

bleeding during the operation, and as the bleeding was rather free at the time it was decided to use a long glass drainage-tube.

3724. Then it was not virtually stopped?—Yes it was; because I particularly observed that all the dressings were absolutely dry. We watched the tube for some time, and found that there was no welling up. We thought it would be safer to leave in the tube, as, if there were any oozing, the blood would at once become apparent through the dressings; that was the decision we arrived at at the time. We thought it would be absolutely safer to leave the tube in, in order to guard against any bleeding.

3725. Do you remember stating that the bleeding had not stopped?—No. We knew that it was absolutely dry when she left the operating-table.

3726. Knew what was dry?—The dressings and the tube. The tube was covered with absorbent wool, and the slightest oozing of blood would be apparent right through that in a couple of seconds.

3727. We have had it stated that the nurse found a quantity of blood, but that the dressing and bandages were still dry?—Perhaps.

3728. Would you expect to see that?—No.

3729. But the nurse has told us that she has never seen anything at all, but nevertheless she found a large quantity of blood underneath the patient. What do you think of that?—I should say that it was improbable, because I particularly watched the tube before the woman left the table, and I am positive that there was not the slightest oozing from the tube.

3730. Do you remember Mrs. Burton meeting you on the stairs and you telling her that the bleeding had never stopped?—No.

3731. Did you tell her that the woman was bleeding in the operating-room?—No. The tube was absolutely dry before she was sewn up. There was no oozing whatever from the tube.

3732. Have you had great success with your cases in the Hospital?—Yes, I have had fairly good success with my cases.

3733. You have been a surgeon operating there for a number of years?—For about twelve years.

3734. And have done perhaps as large a number of operations as any one in Dunedin?—Yes.

3735. And are constantly operating?—I have been operating constantly, except during the last six or eight weeks.

3736. But up to that time you had had fairly good success?—Yes.

3737. Had you anything to complain about want of success?—No. The only thing was that we found——

3738. Please speak about yourself?—I always operated with extra caution in regard to antiseptics. That is the only thing that I can say.

3739. And with extra caution you got on pretty well?—Yes.

3740. You operated freely and with confidence, taking these precautions?—Yes, taking these precautions.

3741. Have you had to complain of deaths in septic cases?—No. I do not remember any deaths from septicæmia.

3742. In your hospital practice?—No; not that I could say with absolute certainty were due to septicæmia.

3743. Have the Trustees ever refused any moderate or reasonable demand by you?—No. They have never done so. As a matter of fact, I have found them very anxious to do all they possibly could to improve the condition of the Hospital. When I was a Trustee myself, I found that all my co-trustees were quite as anxious as myself to improve the condition of the institution, and recognised that certain things wanted improvement. The only difficulty in the way was financial difficulty.

3744. While you were on the Board as one of the Trustees, did the profession as a body, or did the honorary staff, make these complaints as to the unsatisfactory state of the Hospital—complaints which we have heard of since?—I am not sure whether it was done before then or not; but I know that every year the staff have brought up recommendations before the Trustees as to the necessity for improvements in the Hospital.

3745. Can you say whether the Trustees have adopted as far as they were able to do the recommendations or advice of the staff?—Yes, as far as they were able to do so. I know that when I got on the board of Trustees myself I intended to do great things, but I found out as soon as we completed the building of the operating-theatre that our funds were practically exhausted, and we were in debt—in fact, our hands were tied through want of funds, and therefore we could not make any further improvements.

3746. We have heard from some sources of wholesale and sweeping condemnations of the Hospital. Were these matters brought up at any time before the Trustees by the profession?—No; they never made sweeping condemnations of the Hospital.

3747. You say that such a thing as a wholesale and sweeping condemnation of the Hospital was never heard of until quite lately?—Most assuredly not.

3748. And that such a condemnation has not proceeded from the profession as a body?—It has not. The block system, on which our hospital is built, is, however, universally condemned.

3749. I am not speaking about systems of construction, but about its condemnation on the ground that it was in an unsatisfactory condition. I ask you, was it ever brought before the Trustees that this Hospital was in an unsatisfactory condition?—It was reported by the honorary staff on several occasions that it wanted improvement in several of the departments.

3750. That was about the extent of the complaints, so far as you were concerned?—Yes. In regard to the nursing, I may mention that while I was a Trustee the then Chairman (Mr. Hough-

ton), who was a most energetic member of the Trust, assured me that he had collected over £1,000 for the purpose of putting up a nurses' home, and having a radical change in the existing nursing system. And I was perfectly satisfied that the change would be carried out.

3751. Did the question of the insanitary state of the Hospital ever come up before the medical staff?—Yes; in regard to ventilation. and several other improvements.

3752. Can you show me any minute by the staff on the subject?—I do not remember exactly when it was; but I know that from time to time we were constantly making recommendations for improvements.

3753. *The Chairman.*] Were they made verbally or in writing?—In writing. We made recommendations in regard to the several departments which we knew would, if carried out, have the effect of improving the whole sanitary condition of the institution.

3754. Can you show us any minute of the staff adopting these recommendations?—They are to be found in the minute-book.

3755. Then, I understand you to say that such a thing as a wholesale condemnation of the Hospital as being in an insanitary condition did not proceed from the staff?—Most assuredly not.

3756. Can you point out to me anything definite proceeding from the staff to the Hospital Trustees indicating that, in their opinion, the Hospital was in an insanitary state?—Yes. There is the report of a number of cases reported by Dr. Batchelor, and the recommendations of the medical staff after considering that report.

3757. That was last year, was it not?—Yes.

3758. But, prior to that, can you point to anything?—Nothing further than the different improvements which we recommended should be made in the several departments of the institution.

5759. These improvements, I understand, were an alteration of the nursing system and the building of an operating-theatre?—Yes; and the building of separate wards, which is a most essential thing, especially for lapirotomy cases.

3760. And it was suggested, you having had your choice, that the operating-theatre should be built first?—Most assuredly so. Previously to this we had an operating-theatre with only one side window in it, and we were operating in the dark.

3861. And the staff decided to recommend that the operating-room should be proceeded with first.

3762. *Mr. Solomon.*] In your opinion, as a duly-qualified professional man, is the Hospital in its present state in a sanitary or insanitary condition?—I think no hospital that is built as the Dunedin Hospital is built can be kept in a perfectly sanitary state.

3763. I must have a more direct answer from you, if you please?—If a septic case occurs in one ward it is not possible to prevent it from spreading and so contaminating all the wards. It is impossible in a hospital built, like ours is, on the block system, to keep in in a good sanitary condition.

3764. I ask you, is the Dunedin Hospital at the present day in a sanitary or an insanitary condition?—I should say that during the last two months it has not been in a sanitary condition, because we have had evidence that it is not so. We have had several cases of septicæmia and erysipelas, which proves that the Hospital is not in the sanitary condition it should be.

3765. I find that a report was sent in by the honorary medical staff, at the early part of last year, complaining of want of bed-space, imperfect ventilation, state of the bath-rooms, closets, and so on. Were the honorary staff unanimous in making that report?—I think so.

3766. In your opinion, is there any difference in saying that the Hospital requires amendments in those respects and in saying it is in an insanitary condition? Does it not really amount to the same thing?—Yes, I should say it does, to a certain extent. If the closets are not perfect, if the ventilation is defective, if there are faults with the lavatories, etc., and if the bed-space is deficient, the wonder would be how it could be in a satisfactory condition, because all that has been written on the subject of "hospitalism" by the very best authorities would be worth nothing.

3767. You agreed with that report, I suppose?—Yes.

3768. Was it signed by the members of the staff, or agreed to by them?—I think it was agreed to by all those who were present at the meeting when it was brought up that it should be adopted and forwarded to the Trustees.

3769. Do you consider it safe to the inmates of the Hospital to allow things to remain as they now are?—I do not.

3770. Since that report, or list of complaints, have not the number of beds been reduced, and alterations made in the closets?—There may have been.

3771. The number of beds has been reduced, has it not, to the number asked for in that report?—I do not think so.

3772. Assuming that the number of beds has been reduced?—I think it has been reduced to fifteen. But I should like to mention that there have been a great number of improvements made in the Hospital during the last ten years; in fact, it is something wonderful the improvements that have been made.

3773. Then, may we say that the improvements have been constantly progressing?—Yes, When I first went to the Hospital the whole of the foundations were in a sort of a swamp—there was quite 3ft. of mud—and the drains were put underneath the institution.

Dr. COPLAND, sworn and examined.

3774. *Mr. Chapman.*] What is your name?—George Anderson Copland.

3775. You are the House Surgeon of the Dunedin Hospital?—Yes.

3776. Your qualifications?—I am M.B. of the University of New Zealand.

3777. And you received your medical education in Dunedin?—Yes.

3878. You are registered as a practitioner in New Zealand?—Yes.

3779. How long is it since you received your registration?—It was at the beginning of 1889.

3780. Did you take your place then as House Surgeon?—Yes, in January, 1889.

3781. You have charge of the Hospital, have you not, and are responsible, so far as your functions go, for the cases there?—Yes.

3782. The admissions all come through you, on the recommendation of the different members of the medical staff or the Trustees?—Yes, or medical men who are not connected with the Hospital. Recommendations come from a large number of people, sometimes from clergymen.

3783. What assistance have you in the Hospital? I mean professional assistance, apart from the staff?—There is an assistant house-surgeon, but at present he is an unqualified man—a fourth-year student.

3784. *The Chairman.*] What is his name?—E. J. Roberts.

3785. *Mr. Chapman.*] Last year it was Dr. Barclay?—Yes, and a portion of this year it was Dr. Fooks.

3786. Who was promoted to Seacliff?—Yes, he was promoted to Seacliff.

3887. Some three months ago?—He left in the beginning of May.

3788. Now, what is the nursing staff?—There are four day-wardsmen and three night-wardsmen, five certificated nurses, a matron, and six probationers.

3789. Then, when there is any stress you get in nurses from outside, do you not?—Yes. We have one in from outside just now—not that there is any stress though.

3790. Do you keep returns of all cases?—I do.

3791. Classified?—I classify them at the end of the year for the Registrar-General.

3792. In accordance with the Registrar-General's framed schedule?—Yes.

3793. *The Chairman.*] The schedule is supplied?—Yes.

3794. You do not really classify them?—No; we just enter them in the schedule. The term is from the 1st January to the 31st December.

3795. *Mr. Chapman.*] Now, at present, what is the number of patients in the Hospital?—I could not say exactly.

3796. What is the number of beds?—There are about 112 beds.

3797. And about how many patients are there in now?—There are ninety-two to-day.

3798. And is that about the number there usually are?—That is about it, and sometimes it runs up over 100, while at others it is down to eighty. It is rarely over 100.

3799. And can you give the numbers in the several wards?—In No. 1 ward to-day there are thirteen, but I am not sure; I think there are two beds vacant. No. 2 is the same, I think. Nos. 3 and 4, I cannot say whether there are any vacant beds in them. No. 5 has one patient in it. No. 6 has twelve beds. No. 7 is vacant. In No. 7 tower there are three. In No. 8 there are about twelve or thirteen. In No. 8 tower there are three. Then in the children's ward there are nine, I think.

3800. You have made up this return, showing in 1888, 1889, and half of 1890 the number of persons who died on each of the first seven days after admission, in comparison with the total death-rate for each of the years' death-rates?—Yes.

3801. There seems to me a large number of cases which came in and died very soon?—There were five died on the first day.

3802. Can you give any idea of the causes of death in those cases within the week?—Yes, I can tell the causes of death in the whole of them.

3803. Does this table show them?—Yes, the whole of them for the two years and a half.

3804. They seem to be under a great many different causes. Then, this return shows the whole of the deaths occurring within one week in the two years and a half?—Yes.

3805. There seems to be a great accession this year of cases dying in the first day. Where are those?—Several of them were fatal accidents. The first was a man brought down from Palmerston, a case of extensive burn, the whole of the trunk, face, and arms being burnt; died within sixteen hours. Then there was the case of a man admitted one afternoon, suffering from peritonitis and also from Bright's disease; he died the same night. Another man was brought in from the Volunteer encampment; he was the officer's orderly; he suffered from Bright's disease and had inflammation of the lungs, and died within an hour. The next was a man with a ruptured aneurism. It happened at the gate, and he died within twenty-four hours. The next was a Chinaman, who was sent in suffering from tubercular meningitis. He was suffering outside, and died the same night. The next case had an extensive scalp wound and fractured skull, the patient dying the same night. The next one was croup; tracheotomy was performed, and the patient died twenty-four hours after admission. The next case occurred while I was away. The next was the case of a young men who fell between two railway-trucks—a young man named F——. The next one was the case of a boy, twelve years of age, who met with an accident at the Ocean Beach, Michael K—— by name; he had a scalp wound, fractured clavicle, internal injuries, and was badly bruised as well; he died within a few hours. The next one was the case of a fractured skull; died two hours after admission. These are ten deaths occurring within twenty-four hours. This year there were twenty-three died within the first week.

3806. Out of a total of fifty-four admitted. Last year, I see, there were thirty-two out of eighty-eight, and in the previous year thirty-two out of 102.

3807. *The Chairman.*] Only one could possibly be a chronic case, sent in to die?—The chronic cases.

Mr. Solomon: I suppose we have the same thing in all hospitals.

3808. *Mr. Chapman.*] Do you have many cases of accidents arising in this town?—Yes; most of the accidents I referred to have occurred about town. [Report handed in: Exhibit xxxix.]

3809. Have you many cases coming in of people brought in in a moribund condition, other than accident cases?—A considerable number come in.

3810. Brought in apparently to die?—Yes; they die within two or three days—generally old people.

3811. Not brought in with any hope of being cured?—That is so; they frequently have not the least hope.

3812. And from any distance?—Not a large number, but we get them occasionally. We have had three within the last three months sent in in a moribund condition from a distance. One was that of the man J——.

3813. This is a summary of the deaths in the four hospitals for last year?—Yes.

3814. It shows the causes of death?—Yes; I prepared it.

3815. It is summarised from the reports, is it not?—Yes, from the Registrar-General's reports. Most of the deaths come under the heading "Constitutional."

3816. Last year there were thirty-five out of the eighty-eight deaths under that heading?—Yes.

3817. And in Christchurch only fourteen out of ninety-six were brought under that head?—Yes.

3818. What is the number of deaths in Christchurch?—Fourteen out of sixty-seven deaths.

3819. And in Wellington?—Nine out of fifty-seven deaths, and nine out of 118 cases; and in Auckland, nineteen out of 141 cases, and nineteen out of ninety-two deaths. [Return put in: Exhibit xl.]

3820. What is this return?—This is a list for one month of patients who have been more than two months in.

3821. Under your by-laws, patients ordinarily should not remain more than two months in the Hospital. [Handing document to witness.] This is a list for one month of patients who have been for more than two months in the Hospital?—Yes. [Document handed in: Exhibit xli.]

3822. This is a return of amputations for 1880 and half of 1890?—Yes. [Document handed in: Exhibit xlii.]

3823. This is a list of operations in No. 7 ward and No. 1 ward in May, June, and July, and a description of the class of cases operated on; also the result?—There are two or three names in No. 7 ward who were not actually operated on in the ward, but who were taken from it to the operating-room, and then taken to another ward, and a week or so afterwards brought back to No. 7. [Document put in: Exhibit xliii.]

3824. This is a return of operations during 1888?—Yes; it is an old one.

3825. Does it show all the operations?—All I could get together out of the books. There were two operations in January, 1888, which were not put down. It is copied from the reports. [Document handed in: Exhibit xliv.]

3826. This document is a list of operations for the last eighteen months by the different members of the staff?—Yes.

3827. *The Chairman.*] Are they not published in the annual reports?—No.

3828. *Mr. Chapman.*] This is a list of gynecological cases for the first half of 1890?—Yes; they are Dr. Batchelor's cases, but there are other gynecological cases that are not in here. In this return the operation cases are marked red. [Document handed in: Exhibit xliv. *(a)*.]

3829. This is a list of all cases of diseases peculiar to women during 1888?—Yes. [Document handed in: Exhibit xlv.]

3830. This is the result of the *post-mortem* on and certificate in Mrs. S——'s case?—Yes. [Document handed in: Exhibit xlvi.]

3831. These are copies of charts in several cases?—Yes. The first one is the copy of the chart of Kate W——, from the date of admission to the 24th July; the second is Mrs. S——'s chart, from date of entry to date of death—Mrs. S—— was the patient next to Kate W——; and the third is Mrs. T——'s, from the date of admission for several days afterwards. [Documents handed in: Exhibit xlvii.]

3832. Now, there are one or two matters that I want to speak to you about. I do not want to inquire too particularly into your private affairs. It has been suggested that you were ill from living in the Hospital?—I was ill.

3833. How long ago?—In February.

3834. What was the matter?—Influenza—the result of influenza, at any rate.

3835. Have you reason to think you have been suffering from living in the vitiated atmosphere in Dunedin Hospital?—I suppose I have suffered to some extent from the confinement.

3836. But from any conditions of the atmosphere?—I have no reason for thinking so.

3837. We have been told that the nurses in the Dunedin Hospital are anæmic—I suppose we may say sickly—from the conditions under which they live in the Hospital?—I do not think any of them are specially so. One or two certainly are, but they were like that when they came in. Two only might be singled out as being anæmic.

3838. Are they weak now?—No; I do not think so. One certainly is. She rather broke down the other day, but she is the last appointed. I think no one could say the other one was sickly.

3839. Apart from those two, are the nurses in good health?—I think most of them are at present. One or two of them were ill some time back.

3840. Have some of them had influenza this year?—Several of them had influenza at the time it was about, but since then one or two have been ill.

3841. Nurse Caffyn was mentioned as being ill?—Yes; she was laid up.

3842. She went to Melbourne?—Yes; and is back on duty to-day for the first time.

3843. What caused her to go away?—She had a sore throat—an attack of acute tonsilitis—pneumonia, and it was also said she had meningitis.

3844. Do you attribute her illness to the bad air of the Hospital?—No. I attribute it to the state of the lavatory in the children's ward. The boiler there had no cover, and the steam used to rise to the roof and condense, and was constantly dropping down. It was like going into a shower of rain, and the nurses complained of getting their shoulders wet. They also used to go out at nights.

3845. Has that matter been remedied?—Yes, it has.

3846. The steam is covered in?—Yes; a pipe leads it outside.

3847. Now, do you remember the case of Mrs. T——?—Yes.

3848. Were you present at the operation?—Yes.

3849. You gave the anæsthetics?—Yes.

3850. You always attend to give the anæsthetics?—Yes.

3851. I want you to describe what you saw after the operation?—Well, I saw very little of the operation. She was a bad subject for anæsthetics, and it took me all my time to look after her; she was very weak. After she was dressed she was lifted off the operating-table on to a stretcher, wrapped up in blankets with one or two hot-water bottles beside her, and carried by two men up the stairs, along the corridor, and to the bed. I went up with her and saw her put into bed. I remained a little time with her.

3852. Did you remain until she recovered from the chloroform?—I remained for ten or fifteen minutes with her and then went away. That was some time between 4 p.m. and 4.40 p.m. At 4.40 p.m. I saw her again, and then at 5 p.m. I was sent for, as she was said to be bleeding badly.

3853. And what was the condition of affairs you found?—The whole of the bed was soaked with blood, and she was in a blanched, weak state, with hardly any pulse. I took the dressings off, and I seemed to get the bleeding to stop. I telephoned for Dr. Batchelor, but he was not at home and I left word for him to come. I then asked for Dr. Maunsell, but before he arrived Dr. de Zouche came in, and we got the instruments ready, as we thought it might be necessary to open the patient again. There was no recurrence of the bleeding from this time.

3854. When you took the dressings and bandages off what was the condition?—The lower part of the dressings and the back part were soaked, the bed was soaked, and the lower edge of the dressings in front. The blood had trickled down between the woman's thighs, and the reason was that there was a drainage-tube, with an indiarubber dam round it, that caused it to so flow.

3855. *The Chairman.*] There was blood coming from the wound?—Yes; running down the woman's thighs on to the bed.

3856. *Mr. Chapman.*] Then, looking at the bandages, it would not be very apparent, I suppose?—No, it was not; in fact, you could not see the extent of the bleeding until you turned the clothes down and took away the pillow that had been placed beneath her knees. Dr. Batchelor arrived at 6.30, and about 9 p.m. he changed the dressings and everything, and about 9.30 he left for the night. The patient was much better then. I went back and forward to her until 12.30 p.m. At that time she rallied to a considerable extent. There was no fresh bleeding, only a little oozing from the tube, but no more than you could expect. Between a quarter to 3 and 3 o'clock I saw her again, and she was faint. There was no blood coming from the tube. In about twenty minutes she seemed to rally and the pulse improved. I then left her. Between 4.30 a.m. and 5 a.m. the bleeding started again. I attempted to stop it, and telephoned for Dr. Batchelor and Dr. Maunsell. Dr. Batchelor arrived about 5.30 and Dr. Maunsell at 6. About 6 or a quarter-past 6 the patient was put under ether, and the abdomen was opened a second time. So far as I could see, the whole abdomen cavity was full of clots. This was partly washed out and partly scooped out, and after about an hour and a half's work—I do not know exactly what happened during the whole of the time—the bleeding point was ligatured, the abdomen cavity closed up again, and the clothes put on. She rallied a little after the second operation and spoke to the nurse. She died between 10 and 11 o'clock that forenoon.

3857. Were you present when the wound was opened after death?—Yes.

3858. And were you able to see then what had been the source of the bleeding?—A large vein down the left side of the pelvis had been torn.

3859. During the secondary operation, who was present?—There were Dr. Batchelor, Dr. Maunsell, Mr. Roberts, two nurses, Mrs. Burton, and myself. I think the two nurses were there all the time, or at any rate the greater part of the time. Mrs. Burton was there from a few minutes after 6.

3860. These nurses were required from time to time to get water from the lavatory?—Yes.

3861. Was everything in working-order there?—I think so.

3862. What length of time does it take to run to the lavatory?—It would not take a minute to go there and fill the basin and come back.

3863. And was the supply kept up?—Yes.

3864. Dr. Batchelor has said that the want of promptitude in fetching the water threw him back half an hour.

Mr. Solomon: He never said anything of the sort.

Mr. Chapman: Well, what reference was made to half an hour?

Mr. Solomon: He said that the operation, instead of lasting an hour, lasted an hour and a half.

3865. *Mr. Chapman.*] Then, as to the light?—There was light overhead—a gas-jet.

3866. Dr. Batchelor was asked if, at the surgical operation, he said, "Put on the dressings, and chance it." Do you remember him saying that?—I do not.

3867. Do you remember Mrs. S——'s case?—I believe some complaint was made in this case about the light, but Dr. Batchelor asked for nothing additional in that way.

3868. Before the operation he did not ask for anything?—No he did not ask me

SATURDAY, 6th SEPTEMBER, 1890.

Dr. COPLAND resumed.

[Witness handed in a return showing the number of patients in one of the wards on the 5th September, 1890, and on the 22nd July, 1889: Exhibit xlvi.]

3869. *Mr. Chapman.*] What is the usual number of patients in, say, No. 7 ward during the months of May, June, and July—what number of beds would be ordinarily placed there?—About thirteen or fourteen.

3870. *The Chairman.*] How many beds are there altogether?—Sixteen.

3871. When you have a ward vacant for cleaning purposes, do you leave the beds in?—It is left entirely vacant until the beds are put back.

3872. The beds are moved from ward to ward?—Yes. I do not think there are beds sufficient to fill the whole of the wards. I think there are extra beds enough to put in thirteen extra patients.

3783. *Mr. Chapman.*] Do you fallow the beds pretty often?—Several times a year. The bedding is disinfected with dry heat.

3874. I want to ask you a few questions about one or two of the cases that have been referred to. Do you remember Mrs. A——'s case?—Yes.

3875. Was she placed in No. 7 ward?—She was. I think that was on the 14th of November of last year. She was in No. 7 tower ward when I went to the Hospital first, but how long she had been there before that I cannot say.

3876. Was she placed there before or after she was operated on?—Shortly after she was operated on, but I am not sure of the date.

3877. If you look at this you will see that the date was October, 1887?—That must be when she was admitted. I know nothing about that, which took place long before I came to the Hospital. I think she came from Seacliff originally.

3878. I see she was operated on in November, 1887?—Yes, that will be about the date.

3879. Do you remember the consultation? Were you present at it?—I do not remember much about it. I was on the surgical side then. I know there was a consultation, but I cannot remember anything about it now.

3880. Were you present at the operation?—I must have been.

3881. Where was she placed after the operation? In what part of the ward?—I think she was placed in the same bed.

3882. Will you mark it on that plan [produced]?—Bed No. 13.

3883. Looking at that plan, can you say what cases were alongside of her in the months of June and July?—There were Mrs. V——, Mrs. S——, Mrs. B——, and Mrs. A——.

3884. What was Mrs. S——'s case?—A case of retaining portion of the placenta.

3885. She was admitted when?—On the 10th June, and went out on the 16th June.

3886. Did she make a quick recovery?—Yes. There was an operation. The uterus was dilated, and the placenta removed.

3887. Was that a short or a long stay for such a case?—A very short stay.

3888. What was Mrs. B——'s case?—An Emmet's operation was performed upon her.

3889. On the 12th June?—Yes. She was in this bed for a few days afterwards.

3890. From the 17th June to the 20th June?—Yes, that is right. Then, on account of the want of light, she was shifted to the opposite bed, which was occupied afterwards by Mrs. S——.

3891. And she was shifted afterwards, when Mrs. S—— died, and put alongside of Kate W——?—Yes.

3892. You say she was shifted on account of the want of light. What was more light wanted for?—For the dressing of this case. She was previously in a corner that was rather dark.

3893. Did she make a good recovery?—Yes.

3894. I see she was twenty-seven days in the Hospital?—Yes.

3895. *The Chairman.*] Do you say that that is a short time?—Yes, for one of these cases. They usually stay four weeks, and sometimes five weeks.

3896. *Mr. Chapman.*] Was twenty-seven days her total time in the Hospital?—Yes.

3897. How long after the operation did she remain?—About twenty-one days.

3898. *The Chairman.*] Did she go out thoroughly cured?—I think so.

3899. At all events, she did not come back again?—No; I have never seen anything of her since.

3900. *Mr. Chapman.*] Now, Kate W—— has been spoken of as having been the original cause of Mrs. S——'s trouble. On the 20th June, the date Mrs. B—— was placed in what subsequently was Mrs. S——'s bed, what was her temperature?—About 105°, I think.

3901. I see it was 104·5°?—It was very high, and I see there was some remark made about it.

3902. She was moved over, and Dr. Batchelor was not alarmed?—No.

3903. *The Chairman.*] Did Dr. Batchelor object to her being removed?—I rather think she was removed at his request. At all events, it was not done by my order. I think the reason for it was, as I have just stated, the want of light. Mrs. B—— went over to the other side of the ward into the corner bed.

3904. *Mr. Chapman.*] Alongside of Kate W——?—Yes.

3905. Kate W——'s temperature fell from the 25th onwards till it became practically normal?—Yes.

3906. You have mentioned Mrs. A——. Was hers a case of ovariotomy?—Yes.

3907. Just tell us shortly the history of her case.—She was treated in No. 7 for a week or ten days, and then operated on for ovariotomy. She was then treated in No. 5 for a week or eight days.

2908. The operation was on the 6th June?—Yes.

5909. And she was in No. 5 from the 7th June to the 14th June?—Yes, and then she was taken back to No. 7. She was in No. 12 bed, next to the one occupied by Mrs. ——. Mrs. B—— and Mrs. A—— simply changed places.

3910. I see that Mrs. A—— was twenty-nine days in the Hospital, and for three weeks after the operation?—Yes.

3911. Is that fair time?—I think it is very good time.

3912. Do you know anything about Mary J——?—Yes. She was in No. 14, on the other side of Mrs. A——. She was admitted on the 8th May, and discharged on the 28th May.

3913. What was her case?—Retroversion. There was no operation—nothing beyond several examinations.

3914. And Mrs. V——?—She occupied No. 14 after Miss J——.

3915. And what was her case?—Cancer of the cervix of the uterus.

3916. Is that a kind of case liable to infection?—It is liable to a certain amount. It was a very stinking kind of case to begin with. Afterwards she was operated on, and had the growth scraped away.

3917. She was in from the 28th May to the 19th June, twenty-two days altogether?—Yes.

3918. What was the case of Margaret M'I——?—She was admitted on the 20th June and discharged on the 8th July, nineteen days altogether.

3919. Do you remember the case of Mrs. T——?—Yes.

3920. She was admitted on the 14th July, suffering from a labial cyst, and was operated on when?—On the 19th July.

3921. By whom?—By Mr. Hogg, under Dr. Batchelor's supervision. He used the Hospital instruments.

3922. What happened in this case? How did her temperature go?—On the night she was operated on her temperature went up.

3923. I see it rose to 102°?—Yes.

3924. *The Chairman.*] It was not up after the operation?—No.

3925. *Mr. Chapman.*] Where about was she put?—In the corner, No. 9 on the left, two beds from Mrs. S——.

3926. On the morning of the 20th I see her temperature was 101°, and on the 21st 99°?—Yes; on the morning of the 21st I gave her chloroform and Dr. Batchelor opened up the wound again. On the morning of the 21st when the second operation was done it was 99°, and at night it reached 101°.

3927. *The Chairman.*] The stitches were taken out and her temperature rose to 101°?—Yes. It came down after that and remained perfectly normal.

3628. *Mr. Chapman.*] In how many days was she practically well—that is, able to sit up?—She was sitting up in bed in a few days; but her wound has not completely healed yet, it is granulating very slowly.

3929. *The Chairman.*] It is healing then?—Yes; it has only got to get the skin over it now.

3930. Do you consider it was a septic case?—At any rate there was suppuration—the result of inoculation of some kind. There was pus there the morning that the wound was opened up again.

3931. Why had it refused to heal?—There was a large cavity left by the cyst, about the size of a walnut, and this cavity was slowly filling up with granulations.

3932. *Mr. Chapman.*] Looking at the original chart of Mrs. S——, you will see that the first one has been carried to a certain point and then abandoned, and that the figures are rewritten on this paper (chart No. 2). Can you explain why that was done?—There seems to have been some bungling here, some mistake. They have attempted to take the temperatures at several periods of the day and putting them all down into the one space.

3933. It appears to have been bungled then, through attempting to take in too much on the same day?—Yes.

3934. This one (No. 1) was re-copied from a certain point on to this one (No. 2), and then carried out?—Yes.

3935. Whose work was it; the nurse in charge?—Yes; Nurse Weymouth.

3936. How long has she been in the Hospital?—About eighteen months.

3937. Is her chart work generally correct?—It is generally correct.

3938. Do you watch these temperature charts yourself?—I do not always. I saw this one the day before, I think, and, noticing it was normal, I did not look at it again.

3939. As to the temperature immediately before operation, I suppose you cannot speak excepting from the chart?—I cannot speak from my own knowledge, but I have no reason to doubt its correctness. The night before operation I was not in the ward at all; it was Mr. Roberts who went round then.

3940. When was your attention directed to it?—Do you mean to this chart?

3941. Yes.—Well, my attention was directed to it quite accidentally. When Dr. Batchelor told me he had written to the Trustees about it, I took possession of the chart at once. They had been taken down to the front door and left with the porter—a course that is always followed; he collects them.

3942. They were taken to him in the usual course?—Yes.

3943. I suppose they are taken to him when the patient dies, or is discharged?—Yes; shortly after death or discharge.

3944. I understand that when you heard some question had been raised about them you took possession of them?—Yes, and locked them up, and they have been in my possession ever since. It was about a fortnight afterwards that I found accidentally that the temperature had been up before operation.

3945. At what hours are the temperatures taken—morning and evening respectively?—Between 8 and 9 o'clock, morning and evening. I asked some time afterwards who took these charts.

3946. Would the entry be made in the evening by the one nurse, and in the morning by the nurse who originally made the entry?—No; because we change the nurses at 6 o'clock in the morning.

3947. But you understood in this case that the entries were made by one person?—I understood so.

3948. Did you see Mrs. S—— before she went to the operating-room?—No. The first I saw of her was in the operating-room.

3949. Had you been in the ward that morning?—No.

3950. Do you remember as a fact whether Dr. Batchelor had been in the ward that morning?—I do not know myself.

3951. By whose orders was the patient sent down?—That I cannot say. She was not sent down by mine.

3952. The order should come, should it not, either from you or from the surgeon who is going to operate?—Yes.

3953. How are orders of this kind conveyed? Direct to the nurse?—Usually; but the rule is that I give the order.

3954. You say the rule is that you should tell the nurses?—Yes.

3955. Did you do so in this case?—I did not.

3956. In this case was there any consultation prior to operation?—No.

3957. You were present at this operation. Was there anything particular to mention about it?—I cannot see these operations.

3958. I suppose you administer the antiseptics at the head of the bed, and have to watch the head of the patient?—Yes.

3959. After the operation she was taken where?—Back to No. 7 ward, and placed in the corner bed.

3960. You did not attend her before operation, as she was under Dr. Batchelor's charge?—Yes. I never attended her in any way except to give her chloroform. I do not attend the patients, except in the absence of the doctor in whose care they are, or in cases of emergency; but I frequently attend to them before they have been seen by members of the staff.

3961. By whose orders was she put back into that bed?—I think the nurse put her into the same bed that she had occupied before.

3962. Dr. Batchelor has nine or eleven beds under his control?—He has nine.

3963. Tell us, in a general way, does he choose where they shall be put?—He chooses his own beds. Sometimes he chooses different beds.

3964. When did you first hear or notice that there was anything wrong with Mrs. S——?—The same night—the 15th. Her temperature was then about 102°.

3965. Who called your attention to it?—The night nurse.

3966. What did you do?—I saw her. She complained of headache, and I ordered her anti-pyron to reduce her temperature.

3966A. When did Dr. Batchelor come to see her?—I think he saw her the next morning.

3967. How did she get on? Was she getting worse?—She seemed to get better for a little, then her temperature would go up occasionally. Once or twice I was called in to see her. She had taken anti-pyron several times during the interval, which, I think, accounted for the lowering of her temperature.

3968. How did she continue to go on? You thought she was a little better?—On the Saturday, five days after the operation, she was very peculiar, and on the Sunday night her temperature went up to 105°. I stopped the anti-pyron on the Friday.

3969. Did Dr. Batchelor see her then?—No. Apparently there was nothing to account for it. I could not see anything. There were no other symptoms than the rise of temperature.

3970. When you were administering the anti-pyron did Dr. Batchelor see her?—He saw her every day, and dressed her daily himself. It was usually at night, when nobody was about, that her temperature went up.

3971. On the Sunday night it went up very much, did it not?—Yes; at 12 o'clock, I believe, she had a rigour.

3972. *The Chairman.*] That was about midnight?—Yes. The next morning she had pain in the lower part of the abdomen, and peritonitis commenced to set in. On the Sunday morning there had been some pain in the lower part of the abdomen; from that time she grew gradually worse, and died on the Tuesday night, 22nd July, at about 6.40.

3973. *Mr. Chapman.*] During all this time Dr. Batchelor had been in attendance upon her?—He did not see her on the Sunday, because he was at Seacliff that day.

3974. Did he make any request to have her removed from the ward?—No.

3975. Or to have any other patient removed from the ward?—No.

3976. There are one or two cases in this list that I want you to look at. Please run your eye over it. By the way, you prepared it yourself, did you not? It is a list of cases, is it not, in which there have been operations?—Yes; it is copied out of the books.

3977. Operations followed up by deaths, in which there were no consultations?—Yes.

3978. They are Dr. Batchelor's cases, are they not?—I think they are all Dr. Batchelor's cases.

3979. *The Chairman.*] Operations without any previous consultation?—Yes; there is only one case in which there was a consultation, between Dr. Maunsell and Dr. Batchelor, but it was not a consultation under the by-laws.

3980. *Mr. Chapman.*] In none of these cases was there the consultation required by the by-laws?—No; at least, there is no record of it.

3981. How is the record of the consultations supposed to be kept up?—On one side there is an entry of the case. As a rule I do it myself. On the other side—but it is not always done—there is a record of matters connected with the consultation. Sometimes this is entered by the surgeon under whose care the case is; at other times by his dresser or clerk.

3982. In many cases it is in Dr. Batchelor's handwriting?—Yes; and some of them are in mine.

3983. Then it is the duty of some one present to enter these things?—Yes; some one present at the consultation.

3984. I understand, then, that you enter the cases on one side of the book: on the other side the recommendations of those who take part in the consultation, and who sign it?—Yes.

3985. And that in that book these are the only cases of which, so far as you know, there is any record?—Yes.

3986. *Mr. Solomon.*] Dr. Batchelor tells me he distinctly remembers consultations in four cases? [List put in: Exhibit xlvii.]—I got my data from the consultation book, and the monthly reports.

3987. This is a list of erysipelas cases [handed to witness]?—It is a list of cases of erysipelas admitted to the Hospital, and of cases which occurred inside the Hospital, since the beginning of last year.

3988. Since the beginning of 1889?—Yes. Sixteen cases were admitted, and ten arose within the Hospital. The return dates from January, 1889. [List handed in: Exhibit xlviii.]

3989. As to the ten cases which appeared first in the Hospital, have you any explanations to offer in regard to any of them?—The first man, I firmly believe, had erysipelas on admission, although Dr. Maunsell says he had not.

3990. *The Chairman.*] Who was that man?—Arthur J——.

3991. Is that the case that came down from Lawrence?—No. [Return handed in: Exhibit xlix.] I thought at the time, and think so still, that this man had erysipelas. Case No. 2 was a lunatic, admitted with a fractured patella. He had strapping applied about the knee next morning, and immediately afterwards erysipelas set in. I do not know where he came from. William H——, who was admitted on the 21st August, had his toe amputated, and erysipelas followed. I do not know much of his history. The next case is John McL——, who was admitted with compound fracture of the tibia—an accident on the Otago Central. Erysipelas appeared within a few hours of his admission.

3992. *Mr. Chapman.*] His leg had been cut with a greasy rope, had it not?—Yes.

3993. In what condition was his leg when admitted?—In a very filthy state. The whole of the wound was very dirty.

3994. Would you be surprised at erysipelas setting in under those circumstances?—Not at all. The next case was Mary W——, who had nearly the whole of her upper jaw scooped out with tumour. Two or three days afterwards aryithemia appeared around the edges of the wound, but as soon as the cavity was washed out the redness disappeared.

3995. Did it amount to erysipelas?—I hardly call it erysipelas. I put it down as suspicious, and she was shifted to another ward.

3996. Directly it occurred you isolated her?—Yes.

3997. Do you do so in all these cases?—Yes; as soon as they occur. These cases occurred in the surgical wards, and it seems to have been the custom from time immemorial to put all such cases into a medical ward. It has been usual to put them into one ward: at all events, into a ward where there are no open wounds. Of the sixteen cases, some were very bad when admitted; in fact, four of them died.

3998. And you say that, in accordance with the custom of the Hospital, those cases that arose in the Hospital were shifted into the medical wards?—Yes.

3999. Is there any other case of which you wish to give an explanation?—Yes; there is the case of F———, whose knee-joint was excised.

4000. What have you to say about his case?—That boy had a sore throat—acute tonsilitis—from 20th July.

4001. *The Chairman.*] After he was admitted?—The excision was done about the beginning of May. He was apparently doing well. The knee-joint was apparently healing up, but on the 25th he developed erysipelas.

4002. *Mr. Chapman.*] To what do you attribute his sore throat?—The young rascal used to go out of bed; in fact, he used to get out, splint and all, and one night I found him myself trying to hide under another patient's bed.

4003. Then you blame his sore throat to his not having taken care of himself?—Yes. He developed erysipelas, the joint broke down, and suppuration took place. I opened up the wound, and found there had evidently been previous suppuration, because there was a cavity filled with dirty, cheese-like pus; yet it has been suggested that the break-down of that joint was the result of erysipelas.

4004. It seemed to be otherwise because you found an old abscess there?—Yes. Then there is the case of William M——, which occurred in No. 1, one of the surgical wards.

4005. *The Chairman.*] Was that in the same ward as the other one?—No; the boy was in the children's ward, and M—— in No. 1. Erysipelas occurred in M——'s case on the night of 25th July.

4006. Were these all in 1890?—F——'s and M——'s were in 1890, but the others were in 1889.

4007. *Mr. Chapman.*] What have you got to say about M—— ? Is there anything particular to explain about him?—No, there is nothing particular. One of the students came straight from the *post-mortem* on Mrs. S——, and stood and spoke to M——, but I do not think he touched him. I do not know whether that would cause his trouble or not.

4008. At any rate, you do not put that forward as an explanation?—I do not.

4009. Is there any explanation about G—— ?—That man was suffering from chronic Bright's disease. He was completely broken down, and, in fact, he came into the Hospital to die.

4010. He was only in a short time?—Yes.

4011. How long?—He came in on the 19th July and died on the 31st.

4012. *The Chairman.*] When did he get symptoms of erysipelas?—On the 30th.

4013. *Mr. Chapman.*] Did he die of erysipelas?—I do not think so. He was dying before it appeared; in fact, two days before that I did not think he would live for twenty-four hours, and Dr. Colquhoun was of the same opinion. There is another case which has been mentioned—that of Kate W——. I did not put it down, and I am certain it is not erysipelas.

4014. This is a list of *post-mortems* for the month of July of this year—of operations and *post-mortems*, showing the relation to each other, and all the persons present at them. Did you prepare it?—Yes. [Return handed in: Exhibit 1.]

4015. There are a few questions which I have omitted to ask. You have heard what has been said about the stuffiness and smell in the wards. Have you any observation to make on that point?—I have noticed the wards stuffy occasionally, especially in No. 3 ward.

4016. That is the ward over the kitchen?—It is directly over the kitchen.

4017. Was it ever stuffy enough to make you feel sick?—No.

4018. That has not been your experience?—It has never been my experience.

4019. Has it ever been anything like that? Has it been such as to make you sick or uncomfortable?—I never heard of such a thing or saw it.

4020. Until you heard Dr. Batchelor's graphic description in the witness-box you had not heard of any one being affected in that way?—That was the first I had heard of such a thing.

4021. Did you hear complaints from other medical men?—I have heard it mentioned by Dr. Batchelor, but there has never been anything in the way of complaint to me.

4022. You were generally present at consultations prior to operations?—Yes.

4023. Have you on such occasions heard complaints from the medical staff as to the insanitary condition of the Hospital?—No.

4024. Have you ever heard it enter as an element as to whether an operation should be performed, this question of the alleged insanitary condition of the Hospital?—Not before the last few weeks, since when everything has been stopped.

4025. You say that everything has been stopped since the last few weeks?—Pretty nearly.

4026. Some of the doctors have told us that it has been since the last six weeks?—Well, since the erysipelas cases.

4027. Why has everything been stopped?—I do not know.

4028. Is it not the fact that since public attention has been called to the condition of the Hospital all the doctors have agreed that it is not safe?—Two or three operations have been done since.

4029. Who have performed them?—Drs. Coughtrey, Gordon Macdonald, and Lindo Ferguson.

4030. How many operations have been performed during the last six weeks there?—Six or seven, if not more.

4031. What would be the usual number for such a time?—That all depends on the cases that are being admitted.

4032. As a rule?—Sometimes we go four or five weeks without an operation; at other times we have eight, ten, and even a dozen operations.

4033. How many cases are there at the present time awaiting operation?—About four downstairs, and several of Dr. Batchelor's cases.

4034. *The Chairman.*] How many of Dr. Batchelor's cases are there?—I think four or five.

4035. *Mr. Solomon.*] That will be eight or nine altogether. How long have they been awaiting operation?—One patient has been in three or four days; another has been in since 14th June; and another has been in for a fortnight.

4036. There is a patient in with cancer, is there not?—That is cancer of the tongue; he has been in a fortnight.

4037. Is that a case that ought to be allowed to remain without operation?—I do not think so; but it is doubtful whether it is cancer or not.

4038. Has it been diagnosed?—There is some doubt about it. Dr. Maunsell has the man under anti-syphiletic treatment at present, and if he does not make any improvement within a few days he will be operated on.

4039. Why are these cases not operated on?—More on account of the inquiry now going on than anything else.

4040. All the doctors are waiting to see whether it is wise to operate on their patients?—Yes.

4041. All except, I suppose, the anti-University section of the staff?—I do not know anything about that section.

4042. At any rate, whether it is or is not a fact, there is a scare just now among the doctors as to the condition of the Hospital at the present time?—Well, I do not know that there is any particular scare, except it be in the minds of Dr. Batchelor and Dr. Lindo Ferguson, partly because they have nothing to do, and partly because the inquiry is on. Dr. Maunsell has told me that his excuse for not operating is that he has not had time to do it.

4043. You think that the institution is not so bad as they want to make it out?—It is not so good as it ought to be.

4044. It is not what it should be?—It is not.

4045. Do you think that it should be left as it is?—For my own part, I should like to see a new Hospital.

4046. That is not the question here. Do you think it is proper that a Hospital which admits one thousand patients per annum should be allowed to remain in the primitive condition of this one?—No, I think it should be improved.

4047. *The Chairman.*] That it should not be left in its present condition?—A new Hospital should be built, if we could get money enough.

4048. *Mr. Solomon.*] You think that a new Hospital should be built?—Yes, that is what I personally should like to see.

4049. But if we cannot find the money we certainly ought to improve this Hospital?—Yes, I think so.

4050. Have you noticed a stuffy atmosphere in the wards?—Yes, occasionally.

4051. Do you think that that is a healthy state of affairs for the patients?—Theoretically it is not; but the patients do not seem to suffer much from it.

4052. Do you think it is a healthy state of affairs?—It is not.

4053. Would it exist if the Hospital were perfectly ventilated?—It would not.

4054. The windows are the principal means of ventilation, are they not?—They are.

4055. In the cold weather which we have here, especially in the middle of July, it is impossible to keep them open?—We find in practice that we can keep them more or less open; we can keep the upper ones open.

4056. We have had instances of doctors practising outside of Dunedin going into the Hospital —Dr. Closs, Dr. DeRenzi, and Dr. DeLautour, for example—and immediately noticing the stuffy state of the wards. Do you think it surprising that strangers should be struck by the condition of the wards when the ventilators were partly closed?—What do you mean?

4057. Is there anything surprising that strangers, on going into the wards, should be struck by the fact that they smelt close and stuffy?—I suppose that, coming from the outside, they would notice it.

4058. Have you gone into the question of what window-space there should be for ventilation?—I have not.

4059. With what window-space you have for ventilation, can you utilise the whole of it for influx of air?—Not for the size of each window.

4060. Do you think yourself that the wards can safely hold the number of beds in them with the present system of ventilation?—I have not thought out the subject. I suppose that theoretically it is deficient, but practically it does not seem to make very much difference.

4061. What do you mean by that?—The patients do not seem to suffer. But my experience has been entirely confined to this Hospital.

4062. In what sense do the patients not suffer?—They suffer no serious inconvenience.

4063. Is that a usual state of affairs—I mean the number of erysipelas cases?—I cannot say anything about any other hospitals. It does not seem anything very wonderful to me. I have seen the same thing here before.

4064. The same number of cases in a similar time?—No.

4865. Do you not know from your reading that the frequency of erysipelas cases may be taken as an indication of the insanitary condition of the Hospital?—I have read that.

4066. Applying that general canon to our Hospital, in which there are one hundred beds, would not the fact of ten cases of erysipelas breaking out raise a suspicion in your mind?—Yes, it would.

4867. A suspicion that there must be something very much out of the way?—Yes.

4068. Generally speaking, the occurrence of so many cases of erysipelas must raise a suspicion in the mind of any reasonable man?—Yes.

4069. You know that this boy F—— was rapidly getting better when he got a sore throat?—Yes.

4070. And do you not know that Dr. Maunsell said that the boy had a septic sore throat?—I do.

4071. Can you contradict that?—I do not believe that he had.

4072. *The Chairman.*] Then you do not agree with Dr. Maunsell's opinion?—I do not.

4073. *Mr. Solomon.*] At any rate, he got erysipelas; and do not all modern authorities say that erysipelas is a septic disease?—Most of them do. There is more of it acquired through exposure to the cold.

4074. But there was no exposure to the cold here, was there?—But you had the boy running under other patients' beds.

4075. Of course, if the windows of the ward were open?—He might get cold.

4076. You have told us the case of the man with chronic Bright's disease, who had only ten days to live, and on the eighth day he got erysipelas?—Yes.

4077. In his condition, that man would be much more likely to contract disease than a strong man?—Yes.

4078. Can such men help running a serious risk in the present state of affairs?—I say they must run a risk.

4079. A risk that could be avoided if proper precautions were taken?—It would.

4080. Such as a proper system of ventilation?—Yes.

4081. Or a new Hospital?—Yes.

4082. Now, as to Mrs. T——. Dr. Batchelor has told us that it was not proper that a

woman in her condition should be carried along a cold corridor, up a flight of stairs. Do you agree with that?—I think it would be better to shift the woman straight from the operating-room into her bed; it would be better to so shift any serious abdominal case.

4083. When she left the operating-table could you tell whether the bleeding had stopped or not?—I cannot say. My attention was taken up with the patient herself.

4084. Carrying her upstairs would necessarily give rise to a certain amount of jerking?—Very little, but there would be some.

4085. You cannot avoid jerking?—No.

4086. Dr. Batchelor says that under these circumstances there is a risk of dislodging blood-clots?—There is certainly a risk of that.

4087. Ought there to be such a risk after such an operation? Do you think that the hospital arrangements ought to be so imperfect as that?—I do not.

4088. Is it impossible to avoid that?—You cannot avoid a certain amount of risk in carrying a patient upstairs like that.

4089. He also complains that when he performed the secondary operation the necessary light was bad, and that the arrangements generally were insufficient?—The light certainly was bad.

4090. Can you disagree with his statement that in consequence of the faulty arrangements he was hampered in the performance of the secondary operation, which took a great deal longer than it should have done?—Yes, it did.

4091. Is not that a serious matter in the case of a woman who was in the critical condition that this woman was?—Yes.

4092. *The Chairman.*] When you removed the bandages, did you find the drainage-tube in the position in which it had been placed?—Yes.

4093. It had not shifted in any way?—No.

4094–7. I want you to listen to this report which Dr. Batchelor forwarded to the Trustees. If there is anything in it that you disagree with stop me at once. Dr. Batchelor says: "The operation was a severe one, but presented no unusual difficulties. The patient was in feeble health, as these patients usually are. She exhibited during the operation a tendency to bleed, which was arrested without special difficulty. At the termination of operation certain precautions were adopted to obviate, as far as possible, any tendency to its recurrence. On removal from the operating-table the patient was excessively weak and collapsed, and in this condition had to be removed from the operating-room, along a cold passage and up a flight of stairs, to the special ward set apart for these cases. . . . On my return home from my round (6.30 p.m.) I immediately visited the patient, and found her weak and pale from the heavy loss of blood she had sustained, all active hemorrhage being then arrested. The question of reopening the wound and searching for the source of the bleeding was anxiously considered and finally decided against. One point that carried weight in this discussion being that the ward in which the operation would have to be performed was an unfavourable one, being insufficiently lighted and having no proper appliances"?—I never heard that the insufficiency of the lighting mentioned at the time.

4098. Dr. Batchelor goes on to say: "The special points I wish to draw attention to are: I consider it was a highly dangerous proceeding to remove the patient (while suffering from collapse consequent upon a severe abdominal operation) along a cold passage and up a flight of stairs: The former proceeding must tend, in my opinion, to increase shock; the latter is liable to induce hemorrhage by dislodging clots which may have formed in the mouth of vessels torn across during the operation"?—Just so.

4099. He further says: "The unsuitable nature of the ward in which the patient lay after the operation was an important factor in deciding me against immediately reopening the wound and searching for the source of the bleeding. Had this step been taken at 6 p.m. on Tuesday, instead of at 6 a.m. on Wednesday, the patient's chance of recovery would have been much better. The cause of the poor woman's death was collapse, consequent on hemorrhage and exposure of the contents of the abdomen. It is a well-recognised fact that shock or collapse in abdominal operations depends in a very great measure upon the length of time occupied in the operation. If the secondary operation could have been completed in half-an-hour (the whole primary operation barely occupied three-quarters of an hour), as I believe it would have been easily completed under favourable circumstances, there cannot be the faintest shadow of a doubt that my patient's chance of recovery would have been materially increased"?—It might have been. I never heard that mentioned at the time.

4100. Is it a fact?—It would have to be done upstairs.

4101. Were there proper appliances at hand?—What do you mean by "proper appliances"?

4102. Hot water, for instance?—There was plenty.

4103. What about the douche?—The same thing would occur in the operating-room.

4104. Why?—The supply in the vessel will not last throughout the whole operation.

4105. Would it not be fixed to a tap in the operating-room?—No. It would be raised to a height.

4106. Mrs. A—— is the woman who has been in the Hospital for a very long time, and who has the septic chart?—She has an up-and-down chart.

4107. She has a suppurating wound, which is a source of danger of infecting another person?—Yes. It might give off pus, which on drying might be carried off in the atmosphere. That is how the danger arises.

4108. But with perfect antiseptic precautions there is no danger?—Theoretically, no, but practically there is some danger.

4109. Practically, there is some element of danger?—Yes.

4110. Supposing a ward to be crowded, and not sufficiently ventilated, the danger would be greater, would it not?—It would

4111. Speaking generally, and as a further illustration of the same view, in surgical wards you must be particularly careful about your ventilation?—Yes, particularly careful.

4112. By the way, do you belong to the University or to the non-University school?—I do not belong to any school.

4113. We have heard that, in the Dunedin Hospital, instead of being particularly careful about the ventilation you are particularly careless?—Well, we do the best we can with the building. Still, the ventilation is not by any means perfect.

4114. You have stated that it has been the practice here, from time immemorial, to put erysipelas cases into medical wards: Is that a proper thing? Is it safe, so far as the other patients are concerned, especially where the wards are overcrowded?—I suppose it is not what it should be. It certainly ought to be remedied. I think that a special ward for erysipelas cases is wanted more than anything else.

4115. You would isolate dangerous cases of erysipelas?—I would.

4116. Mr. Chapman told us yesterday that Dr. Batchelor's complaints are grossly exaggerated. Can you say, after what you have told us as to the defects in the Hospital at the present time being of such a serious character—grave and serious—as to endanger the patients, and to require immediate remedy,—can you honestly say that there has been any exaggeration whatever in his complaint?

Mr. Chapman: That is not what I referred to.

Mr. Solomon: Allow me, please, to put my question in my own way.

Mr. Chapman: I say that the original complaint against the Hospital is an exaggeration.

Mr. Solomon: In your address yesterday you said that the statements of Dr. Batchelor were "grossly exaggerated," and you afterwards characterised them as exaggerations.

4117. *Mr. Solomon.*] I will get it out in another way. You have told us this morning that the ventilation is by no means safe. Do you agree with Dr. Batchelor about the walls and ceilings?—Yes.

4118. Nobody can deny that, I suppose?—Nobody can.

4119. We have been told that it is necessary that the floors should be specially made to discourage the reception of germs?—Yes.

4120. We have also been told that the floors of the Dunedin Hospital are made in such a way as to encourage the reception of germs; that they are made of soft wood, which is almost as good a home for germs as you can get?—The wood is very soft, no doubt. It is as good a floor as you can get to collect germs in.

4121. Now, in the face of what you have told us—that the ventilation is by no means perfect, that there are too many people in the wards, that there has been a suspicious number of erysipelas cases breaking out during the past eighteen months, and that the floors are bad—can you say that it is in any way an exaggeration to say that these defects are of so serious a character as to be a source of grave danger to the patients?—These defects do increase the risk.

4122. I want you to say more than that. Can any man say that it is an exaggeration, to say that these defects are of so serious a character as to be a source of grave danger?—From what I have seen, they do not seem to be such a grave source of danger as has been attempted to be made out. That is my answer. Still, I believe them to be a source of danger.

4123. Are they not a source of great danger?—They are a source of danger.

4124. I want you to tell me whether they are not a source of great danger?—I can only say that they are a source of danger.

4125. Do they call for immediate remedy?—I think that they should be remedied.

4126. Do you think it is safe to leave them as they are?—I do not know how to answer that.

4127. Did you hear Dr. DeRenzi say that he hardly saw any septic trouble or suppuration in the Christchurch Hospital owing to their improved hygiene?—I heard him say so about septic trouble.

4128. Would you be surprised to hear that of a list of 200 cases in the Dunedin Hospital sixty cases are associated with septic trouble?—I should most decidedly be surprised, and should like to see how that list is made up.

4129. The second name on the list, Bessie A——, had septic symptoms: "Discharged for a time; abscess"?—She had suppuration when she came into the Hospital.

4130. It does not say so here?—It was the case, nevertheless.

4131. The next case is given as "Septic symptoms from the time of admission"?—That case had suppuration when it came in.

4132. The next case is "Abdominal section; patient became delirious next day"?—I suppose that that is put down to septic causes.

4133. The authorities say that that is the strongest symptoms of septic poisoning?—That patient died of exhaustion. I see in the list a case of "perforation of the intestines;" but that has not been done: there was no operation.

4134. "Mary D——; abscess in the loin"?—That started before she came into the Hospital.

4135. "Hugh A——," the tenth case in the list. What about him?—There was no erysipelas there.

4336. I will not go through the list. But in a list of about fifty cases there are about a dozen of erysipelas?—You may expect that, for a considerable time at any rate.

4137. Here is a list of Dr. Gordon Macdonald's cases [read]. Is that a normal condition of things?—The unfortunate thing about it is that Dr. Macdonald gets nearly all the suppuration which comes into the Hospital. They come in with suppuration.

4138. Now, as to Mrs. T——: Was there anything to suggest a reason why the temperature should go up as it did?—Not in the operation itself. There was, however, a good deal of handling of the parts, which might cause bruising.

4139. Would the bruising cause suppuration?—Yes.
4140. And cause a reopening of the wound?—Certainly.
4141. The woman developed suppuration after the operation, and then septic poisoning?—Yes.
4142. Where was the septic poison to come from: it cannot come without the germs of the disease?—No.
4143. The mere fact of bruising the parts will not cause it?—No.
4144. Is there anything in the operation itself or in the woman's condition to cause it?—Not in the operation itself.
4145. We have heard a good deal about the tissues being bruised considerably. Would it not, however, be perfectly consistent with the fact that the air was unhealthy?—Yes.
4146. And the atmosphere of the room in which Mrs. A—— was—a crowded room, insufficiently ventilated—would be quite sufficient, would it not, to account for that?—Yes.
4147. Did you see Dr. Batchelor examine Mrs. T——?—Yes.
4148. Was it carefully conducted?—Yes. The examination was made on the 10th, and she was put under chloroform.
4149. What was the object of that examination?—She was put under chloroform, and a careful examination made in order to ascertain if there was any reason why the operation should not be performed.
4150. Supposing that the woman was suffering from chronic endometritis, as Dr. Gordon Macdonald says she was, could that fact have escaped the attention of Dr. Batchelor?—I hardly think it could.
4151. Supposing that there was a sticky, yellow discharge, such as Mr. Hogg wrote about, could that have escaped the observation of an experienced surgeon searching for a cause?—I should not think so. I hardly think it could have escaped him.
4152. You were present at the operation?—Yes.
4153. Did you note anything in it to call for remark?—I do not think there was. But I did not see the operation.
4154. You know Dr. Batchelor to be a careful surgeon, do you not?—Yes; he is a very careful surgeon indeed.
4155. And particular about his antiseptic treatment?—Yes; very particular.
4156. *Mr. Chapman.*] Concerning these cases said to be awaiting operation. Four are Dr. Batchelor's; whose are the other four?—Dr. Maunsell's, I think.
4157. It has been insinuated that some members of the medical staff, including Dr. Coughtrey, are antagonistic to the University, and presumably to the Medical School.
Mr. Carew: That has not been insinuated; it has been stated by Mr. Solomon.
4158. *Mr. Chapman.*] So far as you know, is there any truth in it?—I know nothing about it.
Mr. Solomon: I did not say anything of the kind just attributed to me. I said that some members of the staff were antagonistic to Dr. Batchelor in the matter of hospital reform, and I say so still.
4159. *Mr. Chapman.*] Then, it is not true that they are antagonistic to the University?—I know nothing about it.
4160. Have you any reason to suppose anything of the sort?—I have not.
4161. Have you ever known any of the medical gentlemen obstructing hospital reform?—I do not know what the staff do; they do not come to me. I never heard of such a thing.
4162. Could Dr. Batchelor have made arrangements to have operated on Mrs. T—— in the ward, if he had desired to do so?—It could have been done.
4163. Have such things been done when emergency required?—Yes.
4164. Complaint was made that the lighting was bad on one occasion. Could he have obtained additional light if he had asked for it?—Yes. I may say that I have seen operations for abdominal sections performed in the same ward.
4165. *The Chairman.*] In No. 5 ward?—Yes; it was done two or three years ago.
4166. *Mr. Chapman.*] If a surgeon thinks it urgent or necessary to operate in the ward there is not, I suppose, any law compelling him to go to the operating-theatre?—Certainly not.
4167. At any rate, Dr. Batchelor knew all the defects of which he now complains?—Yes; I should think so.
4168. A statement has been made that out of two hundred cases referred to sixty of them are associated with septic trouble. Is not that a "grossly exaggerated" statement?—There might be sixty cases associated with septic symptoms, but I should like to know where the septic arose from.
4169. Do not a great many people come into the Hospital in that condition, suffering from wounds, burns, ulcerations, etc.?—Yes.
4170. Have you any reason to suppose that that is a correct list?—It may be correct.
4171. Did not Dr. de Zouche want to perform a secondary operation at once on Mrs. T——?—Yes; and if Dr. Maunsell had not come in it would have been done.
4172. It would have been done as an emergency matter?—Yes.
4173. *Mr. Carew.*] Can you say to what extent, in your opinion, the unfavourable state of the Hospital has affected the death-rate?—I hardly think it has affected the death-rate at all since I came to the Hospital. I can speak of nothing before that. The cases which have died have, as a rule, been very hopeless cases.
Mr. Chapman here wished to put in Dr. Brown's letter of resignation, but Mr. Solomon objected, and the Commissioners upheld the objection.

MONDAY, 8TH SEPTEMBER, 1890.

DR. WILLIAM MACSTRAVICK STENHOUSE sworn and examined.

4174. *Mr. Chapman.*] What is your name?—William MacStravick Stenhouse.

4175. You are a duly-registered medical practitioner of New Zealand?—Yes.

4176. What were your qualifications in the Old Country?—I am a Doctor of Medicine and Master of Surgery of the University of Glasgow.

4177. How long have you been registered in New Zealand?—Fifteen years.

4178. Have you been practising in Dunedin during the whole of that time?—Yes.

4179. Are you a member of the medical staff of the Dunedin Hospital?—Yes.

4180 How long have you been a member of the staff?—For five years; from 1883 to 1890, except 1885-86, when I was out of practice for two years owing to an accident.

4181. You went out of practice to go Home, did you not?—Yes. I went on the staff again in 1888.

4182. Now, I suppose you recognise that there are shortcomings in the Dunedin Hospital?—Yes; there are structural deficiencies. I have always recognised that.

4183. I suppose, if you had any amount of money at your disposal, you would like to see the building pulled down?—Yes; I should suggest such a thing. I was the first to suggest it.

4184. At any rate, in order to put up a perfect modern building you would have to completely sweep away the present one?—Yes; it would be a new building entirely.

4185. What do you think of the building as it stands?—I believe it is as healthy a hospital as there is in the world.

4186. Will you be kind enough to briefly state to the Commissioners what your opinion of it is?—Yes; I will do so. For a number of years past I have been in the habit of using it as a sanatorium.

4187. *The Chairman.*] For many years?—Yes, for a number of years—say, from 1883 or 1884.

4188. And you have used it as a sanatorium?—Yes. I think I then had the largest practice with friendly societies, and went out a great deal among the working-classes. I often came across people, especially women, who had broken down in health, without there being any serious organic mischief about them. I saw that they wanted pure air, nursing, rest, and nourishment; and I sent many of such cases into the Hospital. After various periods of residence in the Hospital these patients were invariably discharged with a renewed lease of life.

4189. That is to say, they were discharged cured?—Yes; they were discharged strong and vigorous and able to battle again with the world. Many of them were in a very low condition when they went into the Hospital, and it is not reasonable to think that they would have improved in the Hospital if that institution were a nest of septic disease. Whenever I wanted to use the Dunedin Hospital as a health resort it has invariably responded to my expectations.

4190. During what period would that be?—During the whole of my connection with the Hospital, but particularly in the years 1883 and 1884, when I had more of those cases than I have had during the last three years.

4191. In 1883 and 1884 you had more of these cases than you have had since up to the present time?—Yes; but I have had such cases coming in continually, even up till now. Besides those cases, I have had a large number of very serious diseases.

4192. Do you mean cases in the Hospital?—Yes; they were treated in the Hospital. They were very serious diseases. I may say there was every kind and variety of disease; and I ask you to remember this: that the patients whose cases come under a physician's care are those in which the vital organs have generally been affected—such as diseases of the lungs, of the heart, of the kidneys, and so on, in which the vital powers are greatly depressed.

4193. Is that limited to medical cases?—Yes. I should like to follow that up by saying that in serious medical cases it is of the very greatest importance to the patients that they should be in a condition of having pure air, and, that being the case, I think I am within the mark when I say there has not been a mortality of 3 per cent. in cases where the patients were not obviously dying when they were admitted.

4194. That is the result of your practice in the Hospital?—Yes.

4195. *Mr. Chapman.*] No matter how serious the type of the disease, the deaths were only 3 per cent., you say, if the cases were not in a moribund state when admitted?—Yes, if they were not moribund or suffering from chronic old age when admitted. There were no acute cases occurring in young or middle-aged persons but what recovered: that was the almost universal rule. I will take the last few months of the present year, and I am speaking now only from my own recollection, I have had two cases of peritonitis, which is recognised as a very serious disease.

4196. *The Chairman.*] Will you give the names of those cases?—I cannot give them by name, for I have not a good memory for names.

4197. *Mr. Chapman.*] Was not one that of Mary R——?—No, I do not think so; but I will come to that case by-and-by.

Mr. Carew: If you do not give the name you do not give the other side an opportunity to cross-examine you upon it.

4198. *Mr. Chapman.*] One of them was in the beginning of the year?—It might be in January or February. The house surgeon will have no difficulty in finding out the case if he consults the book. The arguments I want to adduce from these cases of peritonitis—and one of them was more serious than the other—is that they are cases in which it is recognised that pure air and healthy surroundings are essential to their recovery.

4199. And you say one was a very serious one?—Yes; it was a very serious one.

4200. What was its particular nature, and what made it so serious?—It is always a serious disease.

4201. But if it is always a serious disease, why should one case be more serious than another?—Well, we speak of one disease being more serious than another. It was virtually one class of case, but in the one case the patient was a little longer ill than in the other. Both, however, made good recoveries, and were discharged cured. During the same time that I had these cases I had five or six cases of typhoid fever. I think they occurred from March onward. Possibly there were only five cases of typhoid fever, but two of them were very serious. One of them was that of a delicate girl who, when she came in, had general bronchitis, besides which her chest was seriously affected, while she had a high range of temperature. She recovered after three months' attention in the Hospital.

4202. What ward was she in?—No. 8. I had another case of a young girl, almost equally as bad. It was a severe case of typhoid fever, but she, too, recovered.

4203. *The Chairman.*] How long was it before she recovered from the fever?—About two months or six weeks before the febrile movement was stayed. At about the same time I was called in consultation to see a young man who had been ill about seven weeks with typhoid fever. When I saw him his lungs were extensively implicated.

4204. Do you mean that he had typhoid and you saw him six or seven weeks after?—When I saw him he was very bad, and was still suffering from typhoid fever, complicated with lung-disease. I told his mother that I thought it was a very hopeless case.

4205. *Mr. Chapman.*] Had he any other trouble?—He had inflammation of a phthisical type.

4206. An acute type?—Well, we may say the inflammation was severe. I induced his parents to send him into the Hospital. I held out no hope if he stayed at home, and I told them it was the only chance the patient had. I telephoned for an ambulance-wagon, which was sent down, and he was taken to the Hospital in it.

4207. Was he in a very weak condition?—Yes; I hardly ever removed one who was in the same condition. I prescribed for him. Two days after his admission into the Hospital he was so low that I believe I am correct in saying Dr. Copland sent for his parents to come and see him die.

4208. *The Chairman.*] Two days afterwards he was so exceedingly low that he was supposed to be dying?—Yes, he was so low that his relatives were sent for. Yet, after three months' attention in the Hospital, he was discharged as well as he ever was in his life.

4209. During which time you attended him?—Yes; I saw him in No. 4 ward.

4210. *Mr. Chapman.*] Was he confined in the ward all the time?—Yes, except during his convalescence, when he moved about. He was in the grounds then for a short time.

4211. How long ago was that?—I suppose he was discharged about two months ago.

4212. You say he was in perfect health then?—Yes; in perfect health. At the time that I am speaking of I had other acute diseases, such as inflammation of the lungs and the like of that; and in all those cases there were recoveries. Now, I ask, could any one have such recoveries as I have mentioned if the Hospital were in the condition it is alleged to be, or if the nursing was inefficient.

4213. *The Chairman.*] In your opinion, such results are incompatible with an unhealthy condition of the Hospital?—Yes; and it would be interesting to put in an instructive form a list of those cases which, you will observe, occurred during a time that the Hospital is alleged to have been in a condition which rendered it unfit for operations to be performed in it.

4214. *Mr. Chapman.*] That is, from July to the present date?—I mean that most of those cases occurred during June and July.

4215. Would those remarks apply to June, July, and August?—Well, I have had some cases in August.

4216. But they apply more especially to prior to August, yet including June and July?—Yes.

4217. Now, what do you say about the death-rate of the Dunedin Hospital?—I look at the death-rate of the Dunedin Hospital as a very low one. A large number of cases that have been admitted were admitted in a moribund condition, or were suffering from wholly incurable diseases. Such cases as these are not admitted into the hospitals generally at Home, but would be sent to the poor-house or the infirmary.

4218. *The Chairman.*] Are these pauper cases, may I ask?—I do not think we have any pauper cases in this colony. I never hear the term used in New Zealand. The last four deaths that have occurred in my practice are typical of what have occurred during my whole connection with the Hospital.

4219. We will take them in order then?—The last one was a Chinaman, admitted on Friday last. I saw him on Saturday, and found that he had been three months ill in bed without any attendance whatever, and without any medical advice. He was suffering from inflammation of the lungs—chronic disease of the lungs. I may say that I saw him only once. He is dead now. The case before him was that of a young man twenty-four years of age, suffering from phthisis and tubercular disease.

4220. You were attending him?—Yes.

4222. Outside?—Yes; and then I sent him into the Hospital for multi-disease of the bone, necessitating operation. He had necrosis of the sternum, jaw-bone, and also of the forearm, and was operated on successfully.

4222. *Mr. Chapman.*] When did you send him in?—A month or six weeks ago.

4223. What was his name?—I think it was M——.

4224. Did you operate on him?—No; Dr. Gordon Macdonald did.

4225. In what ward was he?—No. 4 at first. Soon after the operation I sent him into the

surgical ward. I think it was No. 1. He got erysipelas there. He was then removed to the erysipelas ward—No. 9: that is the ward for infectious diseases. It is at the back of the operating-room. The erysipelas was cured, and he was again removed into No. 4.

4226. *The Chairman.*] Were there other cases in No. 4?—Yes; he was cured of his erysipelas then; but he gradually sank and died.

4227. How long had he been in the Hospital before operation?—A week.

4228. What did he die from? What was the cause of death?—He died of exhaustion.

4229. From what?—From the phthisical or tubercular condition he was in; he had a complication of diseases.

4230. But you say the erysipelas was quite cured?—Yes; it was a factor in reducing his strength.

4231. *Mr. Chapman.*] When he was taken in No. 4, was there erysipelas in it then?—No. I see the case is entered in the consultation-book in Dr. Copland's handwriting: "He developed erysipelas after an operation."

4232. In what condition was he when admitted?—He was almost in a hopeless state.

4233. How long was he in altogether?—He might have been in about six weeks.

4234. An operation was performed on the 15th July, according to the consultation-book?—Another death I had before that was an old man seventy-one years of age. He was usually called Mackie M——.

4235. Was there an operation there?—No. I had him last year in May, when he was suffering from chronic heart-disease.

4236. *The Chairman.*] Was that early in the year?—No; it was in the winter time. He also had chronic bronchitis, and seemed to be in a very weak condition, but he recovered, and we sent him out pretty brisk.

4237. *Mr. Chapman.*] How long was he in?—Two months last year, if not longer. He came back either in August or at the end of July.

4238. After a short time out?—He was out very nearly a year. On this occasion he ought to have come back at the beginning of the winter instead of at the end of it. We found his heart-disease had advanced, but he was in the same condition of chronic bronchitis, and he died in a few days.

4239. Of what?—Heart-disease and bronchitis combined.

4240. Which was the principal?—I would not distinguish between the two factors; either was sufficient to account for death in the case of a man seventy-one years of age. In mentioning these cases I want to show you the class of cases which die in our Hospital. You cannot expect anything else, because they are hopeless cases when they come in; out of five cases there were two bad chronic cases which came to us from the Benevolent Institution to die.

4241. Chronic cases of what?—One was of heart-disease and the other was exhaustion. There might have been some internal disease, like cancer, but we did not make an examination. They were old patients of mine, and I knew their condition.

4242. Have you previously had moribund cases sent from the Benevolent Institution in the same way?—I aways attended them out there, and never sent them into the Hospital unless there was some surgical operation to be done; but at one time we had lots of cases of that kind, before they removed incurables from the Hospital to the Benevolent Asylum. These are cases—every one of them, with the exception of that young man—which would not be admitted into the hospitals at Home. Hospitals are places for curing people, not places where people are sent to die in: therefore, I say, if allowance is made for the number of deaths of that kind, the mortality in the Dunedin Hospital, according to my idea, is a very low one.

4243. And that, notwithstanding the defects in ventilation, floors, and other things?—Yes.

4244. But there are defects?—Yes; but I have not seen any reasonable proof that these defects have produced disease. Judging by the results in my own cases, I say that it is impossible that such a thing could have occurred. Had it been the case, I should not have had such good results.

4245. Have you heard of the case of the Norwich Infirmary?—Yes; that is an institution that was supposed to be in such a bad hygienic condition that it was proposed to pull it down for the purpose of building a new hospital.

4246. It was supposed to be insanitary?—Yes. The surgeon of that hospital is one of the best known and ablest men in all England—W. Cadge—a man of most distinguished ability. They had some reason for saying the hospital was in an insanitary condition, nearly every surgical operation having developed septicæmia, pyæmia, or something similar; and it was admitted that there were grave structural defects in the building, as there are in all old hospitals.

4247. Were you there during the time of the trouble?—No. I merely bring that forward as an illustration to show that there may be grave structural defects in a hospital, but that is no reason for pulling it down. A change was made in the management at Norwich, and a new master and matron were appointed, and strict attention was paid to the details of cleanliness, with the result that the disease disappeared entirely. Norwich Hospital to-day stands where it was, and is doing good work, showing that we should not ascribe this kind of mischief so much to structural defects in the building as to the want of cleanliness.

4248. Can you give the Commissioners a reference to where this is refuted?—You will find it discussed in the *Lancet* and the *British Medical Journal.*

4249. Did you derive your information from any original source?—No; from my reading of medical journals. At all events, it is the fact that Norwich Hospital stands where it was, and is doing excellent work.

4250. *The Chairman.*] Do you know what had to do with that?—The change of managemen only.

4251. Did they change Dr. Cadge too?—No.

4252. It was the bad management of the hospital that was in fault in that case?—The management was changed, and strict attention paid afterwards to cleanliness.

4253. *Mr. Chapman.*] We have heard complaints against the waterclosets and so on: do you think that they are safe and satisfactory?—I think that they are perfectly safe.

4254. Notwithstanding that they do not comply with the ideal?—Yes, notwithstanding that they do not comply with the modern ideal. I remember there used to be an offensive smell from the closets, but that has been remedied. I have been there for the last three or four years, but I have not felt any smell arising from them. The Hospital has been put into a much better condition than it was ten or twelve years ago.

4255. In what respect? The closets are better than they were?—Yes. Our closets are built on the same system as nearly every hospital in England, except those that have been recently erected, which have cross-ventilation.

4256. Do not the doors work the closets automatically?—That is not practised here, and it is not practised in any of the old hospitals, but is the latest idea.

4257. Do you think it should be done?—It is a very simple thing. If I were building a new hospital I should say I would have that done, but I do not think it is a matter of much importance. The double doors are an excellent thing, I consider. The closet-pans are thoroughly flushed.

4258. Would that be a possible improvement?—Yes; it would be a little improvement, and would not do any harm.

4259. And what about the baths?—It has been contended that they should not be open to the ward, but I do not see any harm that can arise from the present position of the baths, provided they are properly trapped. All the pipes connected with the baths, waterclosets, and basins should be properly trapped.

4260. Are they properly trapped to your knowledge?—I do not know, but I think they are trapped. Then, as to the baths: it has been said it is a disadvantage to have them in the ward, as they cause a nuisance. I may say, in regard to that, that a recommendation was adopted in the Edinburgh Infirmary to have movable baths, so that you could use a bath alongside the bedside of a patient without having him carried out of the ward. There is no objection to adopting that.

4261. Are you talking now of medical or surgical wards?—I am speaking of both.

4262. That would be an emergency bath, would it not?—It would not be advisable in some cases to move the patients.

4263. Why?—For obvious reasons.

Mr. White: One of these baths is in the Hospital now. It was recommended by Dr. Grabham.

4264. *Mr. Chapman.*] Then, as to the floors, ceilings, and walls: what opinion have you on that subject?—I say that the Dunedin Hospital in this respect is exactly like most of the hospitals in London.

4265. Take the floors first?—They are the same as in the old hospitals at Home; for instance, Glasgow, and every London hospital I was in except St. Thomas's. The old Edinburgh Hospital had a common floor.

4266. *The Chairman.*] Is that the Edinburgh Infirmary?—Yes.

4267. You say they have the ordinary flooring?—Yes. Every one acknowledges that, if the Hospital was to be rebuilt, its floors should be paraffin waxed.

4268. Do you think it would be better if the present floors were waxed?—Decidedly; no one questions that.

4269. Would they be better if they were made impervious?—I should not consider it necessary to condemn a fine building because it did not comply with modern requirements.

4270. *Mr. Chapman.*] Then, as to the ceilings?—The ceilings should be made impervious and glazed.

4271. And the walls?—They should be made impervious in the same way. It would then be a far easier thing to keep them clean. At the same time, I hold, if they are properly washed, and sprinkled with carbolic acid as a disinfectant, there is no danger, in my opinion, of germs.

4272. Do these remarks apply to both surgical and medical wards?—Yes.

4273. On the subject of overcrowding, have you formed an opinion?—I have never seen anything to lead me to believe that the Dunedin Hospital was overcrowded. My belief was quite the opposite. We know what the atmosphere in a large city at Home is, and we also know what the atmosphere in Dunedin is, and I say that our Hospital can carry twice as many people as a hospital in London or Glasgow without being overcrowded. I do not for a moment admit that our Hospital is overcrowded.

4274. When were you at Home?—I was at Home for four years, and returned to the colony three years ago.

4275. You visited several hospitals while you were at Home?—Yes. I almost daily attended the London hospitals while I was there.

4276. Tell me what hospitals you saw?—The Glasgow and Edinburgh, and, while I was in London, I saw the University, King's College, the Throat and Ear Hospital (Golden Square), Moorfields Eye Hospital, St. Bartholomew's, Guys, and the Samaritan.

4277. Comparing our hospitals with the London hospitals, what is your opinion?—I thought that we had much the best of it in the height of the ceilings, the London hospitals being lower than ours; and it seemed to me, though I did not take any measurements, that their beds are closer than they are in our Hospital. My impression then was, and I told people at Home so, that in the Dunedin Hospital the wards are roomier than they are in the old hospitals in London.

4278. *Mr. Solomon.*] You were a member of the staff, were you not, when Dr. Lindo Ferguson's report was brought up?—Yes.

4279. Were you a party to it?—I cannot say that I was.

4280. I think you were present at the meeting when it was passed?—That may be. I do not recollect anything more than that he read a paper.

4281. But the minute says that you were present?—It does not follow from that that I am a party to everything that is in the report.

4282. It says: "In conclusion," &c. [Report of medical staff read: Exhibit iii.] Was that the position which you took up?—The position I was in was that I had already made my views known. The staff knew my views thoroughly. I was opposed to any large expenditure on the Hospital, and, knowing that there was a majority in favour of the report, I did not bring any motion forward, because we always go by the majority. If I had thought that my views were likely to have been carried, then I should have stood out, but, as it was, I did not consider it necessary even to enter my protest.

4283. Are you opposed to hospital reform?—I am not.

4284. You are opposed to spending large sums of money on the present building?—Exactly. I made a proposal in 1883—I was the first to bring the matter forward—that we should go to the Trustees and ask them to make such improvements as were urgent, and to form the nucleus of a hospital fund, so that we could build a new hospital by-and-by. My view then was that if we led the Trustees into a large expense we should delay the time when we could get a modern hospital, and I am still of that opinion. I may say that I have forgotten all about the report.

4285. *The Chairman.*] Then, it is not true that the staff were unanimous in regard to that report?—I knew what the majority of the staff would do in regard to it, and did not think it worth while to divide the staff on the point.

4286. *Mr. Solomon.*] One of the reforms recommended by the staff was a reduction of the number of beds to fifteen?—I was not aware of it. That is the first I have heard of it.

4287. *The Chairman.*] I had better put it down that you were not aware of it?—Possibly I read it without it striking me.

4288. This resolution states that the report was the unanimous outcome of the deliberations of the staff. Now, you say that you were not a party to it, which, of course, breaks down the unanimity of the resolution. I must get that down clearly and distinctly?—I was not a party to the report.

4289. You only submitted to the majority, without knowing what was in the report?—Exactly.

4290. *Mr. Carew.*] You did not agree with the report, and gave way to the majority?—Yes; I allow many things to pass that I do not agree with.

4291. Did you not know what was in the report?—I must have read it.

4292. We are to understand that you only gave in to the majority?—Yes, as I have done in many other things. As an illustration of the position I have taken up, I may mention that when Dr. Lindo Ferguson brought up the suggestion that the medical staff should subscribe £100 for improvements, and the nurses' home, and for special wards, I said that I would not pay anything towards new improvements, but I agreed to it when I saw that it was the opinion of the majority of the staff. I did not approve of the proposed improvements, though I was quite willing to do my share if it had been decided to go in for a new building. I would not divide the staff on a mere monetary question.

4293. *Mr. Solomon.*] Is this the position you took up: "(1.) That the honorary medical staff regret that severe strictures reflecting upon the present condition of the Hospital have been made by one of their number, and herein affirm that the Hospital is now in a better condition in every respect than at any former time, and is deserving of the confidence and support of the community. (2.) The honorary medical staff consider that on the same occasion unwarrantable and disrespectful language was used to the Trustees, who have always shown themselves zealous in the interests of the institution, and capable of discharging their responsible duties. (3.) The honorary medical staff, while admitting that defects do exist in the ventilation, sanitation, and accommodation of the Hospital, deem it injudicious to attempt to remedy these defects in connection with the present building, and strongly recommend the Trustees to begin forming a fund for the purpose of building a new hospital, in which endeavour the honorary staff will cordially co-operate both by their substance and their influence." Were those resolutions moved by you?—Yes.

4294. You went on to say, as reported, "That the Dunedin Hospital, so far from being a disgrace in any respect, he considered had done splendid work in the community." These were your words, were they not?—Yes; I think the same still. It is an admirably conducted Hospital, in my opinion, and does an immense amount of good.

4295. Were you present at the *post-mortem* on Mrs. S——?—Yes.

4296. Did you take any part in it?—No, I was there only as an onlooker.

4297. Will you kindly state what you consider her death to have been due to?—It was undoubtedly a form of septicæmia.

4298. How arising?—In my opinion, from an operation on a diseased tissue in the neighbourhood of the rectum. I consider that the conditions were auto-genetic—that is, they arose within the woman herself.

4299. You have heard Dr. Batchelor's statement, ascribing her death directly to the insanitary state of the Hospital: what do you say to that?—I do not see how Dr. Batchelor, or anybody else, can do that. Holding, as I do, that the Hospital is not in an insanitary state, I cannot agree with him there.

4300. Did you ever attend Mrs. S——?—Yes, a good many years ago.

4301. Before she had this trouble of hers?—Yes, I think so. I attended her in a very bad confinement, but pulled her and her child safely through it.

4302. *The Chairman.*] What was it?—An impacted head. She had a protracted labour; she was in labour for forty hours before I was sent for.

4303. *Mr. Solomon.*] We will deal first of all with this report. I find, on referring to the minute-book of the staff's proceedings, that at a meeting of the staff on the 12th April, at which you were present, that "Dr. L. Ferguson read a paper, and showed a plan prepared by him containing suggestions whereby the present hygienic defects in the ward-construction of the Hospital might be amended. The late hour prevented any discussion thereon, which was postponed till next meeting. Dr. Ferguson was thanked for the trouble he had taken in the matter, and the secretary was directed to convey the following resolution to the Trustees: 'That the honorary medical staff are engaged in considering and preparing a report dealing with the present defects in the hygienic conditions of the Hospital, and embodying suggestions by which these may be obviated.'" Did you at all dissent from that?—If I did my dissent should be recorded there.

4304. I find that it is not recorded. At page 173 it is stated that—you were also present—"Dr. L. Ferguson's suggestions for remedying the existing hygienic defects came up for discussion. Those present were unanimous as to the main contentions therein contained; but some difference of opinion prevailed as to the details of their being carried out. The secretary was requested to see such members of the staff as were absent from the meeting, and, if they were unanimous as to the main contentions, also to forward copies of the suggestions to the Trustees, and to add a paragraph to the effect that they were unanimous as to the main contentions, but were not entirely agreed as to the methods of carrying them out." Is that true?—I believe so.

4305. I see that these minutes are confirmed as correct; in the usual way, I suppose?—Yes, subject to the explanation I have already given of my views, which were thoroughly pronounced and thoroughly well known.

4306. Never mind about that: were you present at that meeting?—I do not recollect it.

4307. Have you any reason to doubt these minutes? Your name appears as having been present, and I find it minuted that the staff were "unanimous as to the main contentions" of the report, although differences of opinion prevailed as to the details thereof being carried out; and the secretary was requested to see such members of the staff as were absent from the meeting. I want you to tell me if that is a true record of what took place?—I suppose it is; I have no reason to doubt it.

4308. I find it stated at this meeting, held on the 27th May, 1889, that the staff—that is to say, those who were present at the meeting, and you were one of them—were "unanimous as to the main contentions" of this report. Now, you have stated to-day on your oath that you have never seen anything to lead you to believe that the Hospital was overcrowded, but quite the reverse?—Yes; I have always said so.

4309. If that be so, how do you explain this statement in the report: "As, practically, there are only two walls available for beds, one of which in each ward is broken up by the chimney-breast and a doorway, the beds are necessarily placed too close to each other for either the health or comfort of the patients"?—I do not think I ever heard it.

4310. Is it true or not?—It is not true.

4311. *The Chairman.*] Is it true that you agreed as to the main contentions of the report?—It is not true.

4312. *Mr. Solomon.*] Did you ever say so?—It is very likely that I did not; but I do not remember whether I did or not. You do not expect me to recollect what took place years ago. I recollect now that I did not vote on that occasion.

4313. Tell me is that, or is it not, a true statement of what took place—that the medical staff passed that resolution, which affirms that they were "unanimous as to the main contentions" of the report?—If that is there, I suppose they did.

4314. How do you explain these two things?—I explain them by saying that this is not an important matter. I was really not aware that such a thing had been put down.

4315. You say that that is not an important matter?—It depends altogether on the degree.

4316. Do you mean to tell me that it is not an important matter that the beds should be too close together for the health of the patients?—I do not admit that.

4317. But you told us just now that it was not an important matter?—I do not admit that it is, even if they were too close together; the importance would depend on a good many other circumstances.

4318. If they were too close together for the health of the patients, would you allow them to remain?—Certainly not.

4319. Is that statement in the report true?—It is not true.

4320. Although you were present at a meeting of the staff when it was agreed to "unanimously" you did not offer any objection?—That may easily happen. As I have already explained, my views were perfectly well known to the staff, and I allowed that to pass "unanimously" rather than divide the staff when I saw that there was a majority in favour of it.

4321. You sat by and heard the staff say that they "unanimously" came to the conclusion that the beds were too close together?—Perhaps I heard it, and perhaps I did not. If I did not actually dissent, then the members were at liberty to put it down as having been agreed to "unanimously."

4322. How far, in your opinion, should beds in a Hospital be apart from one another? What square space, in the first place, should each patient have?—It depends altogether on circumstances.

4323. Take the Dunedin Hospital?—It depends altogether on where the hospital is.

4324. Take London, then?—I say that in London they require more space than they do in Dunedin.

4325. I want you to tell me how much square space each patient ought to have, in your opinion, in the Dunedin Hospital?—I think patients would be very well off indeed when they have 80 square feet, though 100ft. is allowed by modern requirements.

4326. And cubic space?—I think they would be well off with from 1,000ft. to 1,200ft. in medical wards, and from 1,300ft. to 1,400ft. in surgical wards; but they have far more here. I know that 1,500ft. is laid down by the authorities, but that is merely theoretical. It has been proved that Hospital patients can be perfectly healthy with only 1,000ft.

4327. Has it ever occurred to you that the cubic space in the Dunedin Hospital is too little?—Never.

4328. But it has been proved by figures to be too small?—What is the cubic space here?

4329. It has been calculated at 1,177 cubic feet per head?—I say that it is not true; the space is not too small in the Dunedin Hospital. Of course, 1,500ft. is laid down by the authorities as the requirements of a modern Hospital; but, speaking as a practical man, dealing with a practical question, I do not admit that it is too little, because I have never found that any patient was the worse for being treated in the Dunedin Hospital.

4330. You say that there is nothing to complain of in the position and condition of the water-closets?—Nothing at all. I do not know whether they are perfectly trapped; it is not my business to look into it, and I have not done so.

4331. I will call your attention to what the report says on this subject: "With regard to the closets, we are aware that you have done everything in your power to render them sanitary so far as their position renders it possible; but we are strongly of opinion that no system of double doors will render a ward safe which has a closet opening directly off it." Is that true?—I did not give any attention to that. I think that the closets are perfectly safe. I repeat that my views were perfectly well known.

4332. At the meeting, did you dissent from the report?—I do not think I voted. If I did not dissent, then you can say that it was agreed to unanimously, though they knew my views perfectly well.

4333. The report further says: "We would venture to suggest that a wing might be added to each corner of the Hospital of about the dimensions shown in the accompanying plan, to contain the bath-room, lavatory, and ward-closets"?—I quite admit that that would be better.

4334. Yet you say that it is quite safe as it is?—Perfectly safe. In nearly all the hospitals in Great Britain a similar condition of things exists.

4335. Generally speaking, I understand—it follows from what you have said—you to say that Dr. Batchelor's complaints are grossly exaggerated?—Yes; they are most grossly and unjustifiably exaggerated.

4336. Do you recognise the existence of two parties on the medical staff? We have been told by Dr. Gordon Macdonald that there is a University and an anti-University section?—No.

4337. For instance, I find here, strangely enough, something which gives an idea of the existence of two parties in the Hospital. After this "row" by Dr. Batchelor it was suggested "that all the cases be removed from No. 7 ward (septic or suspicious cases being separated from those to which no suspicion attaches), and that the ward be thoroughly cleansed." Do you remember that?—Yes.

4338. Did you agree with that?—I thought that no such motion should be brought forward pending this inquiry.

4339. Strangely enough, the meeting was divided exactly as Dr. Gordon Macdonald said the staff were. For the resolution there voted (the University section) Drs. Batchelor, Maunsell, and Lindo Ferguson?—On whatever question the Hospital staff were divided these men were found together; instead of being the staff's opinion, it was really only one opinion. I am an independent man.

4340. On the other side of the question, I find Drs. Gordon Macdonald, Coughtrey, Jeffcoat, and Stenhouse. Are they one party?—If you mean to insinuate that I belong to any party you are entirely wrong. I believe that there are cliques in the Hospital, but I have never belonged to any clique. I endeavour to be loyal to the truth.

4341. I find that there is not the best of feeling between you?—I do not know why there should not be. It is not on my part if there is not.

4342. Do you remember Dr. Batchelor getting a resolution passed to this effect: "Dr. Batchelor stated that he had summoned the meeting for the purpose of drawing attention to the fact that the operation of abdominal sections for removal of ovaries and fallopian tubes had been recently performed by Dr. Stenhouse, who was in the position of physician only on the staff. He referred to a minute on the subject passed at a meeting of the staff in 1885, at which the separate duties of physician and surgeon were defined. He was desirous of obtaining an expression of opinion from the staff on the question whether the physician is justified in operating on these cases in the Hospital. Dr. Stenhouse explained that he was not a member of the staff when the duties of physicians and surgeons were defined, and he was under the impression that a certain latitude was allowed. He had called the consultation on the case in due order, and had also obtained Dr. Batchelor's opinion on the case. After some discussion, Dr. Colquhoun proposed 'That it be a recommendation that the various members of the staff in the Hospital keep to the work to which they have been appointed in the Hospital.' Seconded by Mr. Maunsell, and carried. Dr. Batchelor moved, 'That the Trustees be asked that the above resolution be added to the by-laws.' Seconded by Dr. Roberts, and carried"?—I remember it.

4343. And the result of it was that you did not operate any more?—No.

4344. I suppose you are much obliged to Dr. Batchelor for that?—I must give the history of that case, seeing that you have brought it up. I think that Dr. Batchelor has done some things which I disagree with very much, and I say that in this case he was guilty of a crime. This young woman (Jessie McB——) had been a patient of mine for years, and therefore had great confidence in me. She came from the country very much worse than when I had seen

her last, and I recommended her to go into the Hospital. I found that she was suffering from uterine disease.

4345. Is that an unusual discovery?—It is not. I have a large number of these cases always under my treatment. Well, I treated her some time ago, and greatly relieved her condition in some respects; but when I saw that she was going to the bad, and seeing that it was a uterine case, I called Dr. Batchelor in to see her, and he agreed with me that an operation was necessary, and that the sooner it was done the better. I told him that I had thought of keeping her some time longer, and trying to improve her condition; but he recommended an immediate operation. I therefore called a consultation of the staff in the usual way, and the operation that I proposed was agreed to. I put it to my patient that Dr. Batchelor was the specialist in the Hospital for these cases, but that there was nothing to prevent me operating. She said that she would rather be in my hands, and I replied, "Very good; but I will have Dr. Batchelor's assistance." On the day that had been fixed for the operation the young woman was brought in and put under chloroform. I think Drs. Barclay and Copland and some students were present; but I was astonished to see that none of the medical staff turned up. I rung up Dr. Maunsell, who said that he would be down, but did not come. Dr. Gordon Macdonald came in afterwards, and we consulted, and went on with the operation, which we found to be one of the most serious that could be undertaken. yet it was done successfully and well. The young woman, however, died two days afterwards.

4346. Her temperature was what?—I do not know.

4347. I find that it was 103°; does not that indicate a septic temperature?—Not necessarily. It might be from shock, or inflammation.

4348. Do you not know that the greatest authorities on the subject say that if there is such a rise in temperature immediately after operation, it is an indication that the patient has contracted septic poisoning?—It might be septicæmia.

4349. Do you agree with that?—Yes; I believe her temperature went up within twenty-four hours.

4350. It was a Tait's operation for the removal of the fallopian tubes, and she had a temperature of 103° just before death?—Her temperature was 102° on the 5th.

4351. But it was 103° the day before she died?—The authorities say that if the temperature goes up after operation it may be septicæmia, but that does not exclude other influences. The operation was necessitated by tubercular disease, and that was quite sufficient to account for the temperature going up, without bringing forward the question of septicæmia at all.

4353. Take another case, that of Mary R—— ?—It is one of those cases that come under the care of a physician every day.

4353. Shall I find among your cases a large number of uterine disorders?—Yes, I have a good many.

4354. Are 70 or 80 per cent. of your cases suffering from uterine disorders?—You are now stating what is not true—what is absolutely false; and if anybody told you that, he told you what was maliciously and wilfully false. At one time, as I have already told you, I had a very large practice amongst the working-classes of Dunedin, and I had a great many uterine cases; as a matter of fact, this class of cases is very prevalent here. I treated them so successfully that I became well-known amongst them on account of my success with uterine cases, and therefore a great many women came to me for treatment. I can tell Dr. Batchelor that I have treated hundreds of cases of uterine disease, and done all sorts of minor operations; and, with the exception of that hospital case in which there was a death—and she would have died in a few months whether Dr. Batchelor or any other man had operated on her—I never lost a patient that I operated on in my life, while Dr. Batchelor himself has lost innumerable cases of minor operations on women.

4355. I understand that you recognise that there are defects, which you call structural ones, in the Dunedin Hospital?—Yes.

4356. Do you agree that there are insanitary defects in the Dunedin Hospital?—The only defect that could be brought under that is bad draughts. I have seen patients take relapses, which I ascribe to the draughts.

4357. Are you now speaking of the medical wards?—I have seen patients in some medical wards, and occasionally in all the wards.

4358. How many cases of operation have you had in the Dunedin Hospital?—I may say that I used to do all the cases that came before me, but I have only had two abdominal sections in the Hospital.

4359. Since November, 1888, how many cases have you had?—I have had only one abdominal operation.

4360. That was Mary R——, was it not?—You can hardly call that an abdominal operation. I have had a great many minor operations.

4361. But since November, 1888?—I have had a good many minor operations. I wish to explain that the abdominal cases mentioned above were done in the Hospital, where I am not allowed to operate now. But, altogether, I have had at least six abdominal cases, with only one death. Indeed, I have only lost one patient after operation, whether major or minor.

4362. Do you think that the structural or sanitary defects of our Hospital are of such a serious character as to call for immediate remedy?—It would be better to have——

4363. I want you to tell me, yes or no?—I am not going to give you a categorical answer.

4364. Tell me, yes or no, are the insanitary defects of the Hospital of so serious a character as to call for immediate remedy?—No. I say there are no sanitary defects, with the exception of draughts.

4365. I want you to tell me whether this is correct? It is what you are reputed to have said at a meeting of the staff on the 11th April, in reference to what you call now one of the healthiest hospitals in the world: "It was quite true that their wards were draughty; that there were patients

admitted into the institution that ought to be discharged within two or three weeks, but who were in for three or four months, because they were always put back by catching colds and getting some new disease from the same cause; and some cases had ended fatally that would, humanly speaking, in all probability not have ended fatally under other circumstances, and, therefore, they were quite justified in going in for a new hospital"?—Yes, I said that; and say the same now, subject to the explanation I have already made.

4366. While you say now that there are no sanitary defects which call for immediate remedy, you then knew of cases that would have turned out differently if things had been in a more satisfactory state. What explanation do you give of that?—I will give you an explanation. I can throw any amount of light on anything I do. My remarks at that meeting had reference only to the draughts: there is not another word about anything else. I will tell you what brought up this defect in the Hospital before the attention of the Trustees. Shortly after I became a member of the staff I found, as I told you already, that when the weather happened to be cold or boisterous, in cases of bronchitis or inflammation, that there was great danger of relapse.

4367. In bad weather?—There was great danger of relapse, owing to the draughts. I had been attending outside of the Hospital a working man who had a large family, and had been very ill with diphtheria. I attended him until he recovered. Having, as I have just said, a large family to provide for he was anxious on their account, and went to work before he was in a physical condition to do so. About ten days or a fortnight after I had ceased my attendance on him I was sent for again to his house, and there found him to be suffering from inflammation of the lungs. Knowing his circumstances—that his house was not a healthy one, and that he could not obtain sufficient nourishment at home—I urged him to go into the Hospital.

4368. That was a case of pneumonia?—Yes. I urged him to go into the Hospital, because I thought that with the attention and care he would get there he would be well in a few weeks.

4369. *The Chairman.*] You expected him to be rapidly cured?—Yes; as all my cases of pneumonia recovered quickly there. He took my advice, and walked from his house to the Hospital, showing that he was not very ill then. Next day I was not able to go to the Hospital—I had a large practice and sometimes could not get to the Hospital—but I went in a day afterwards, at about 9 o'clock in the morning. I remembered his case, and went upstairs to see him. As soon as I opened the door of the ward, there was the man evidently dying. He was my patient. I at once saw what had occurred. He had been put in the only vacant bed in the ward, and it was right at the door. The windows opposite were open, and as soon as anyone opened the door there was a draught. I felt it myself. He had been left for thirty-six hours exposed to that draught.

4370. The man was killed, was he not, by that draught? Is it any exaggeration to say so?—The man's death was accelerated by the draught.

4371. At any rate, we have one man who has been killed by the condition of the Hospital. And you say that his death was greatly accelerated by the condition of the Hospital?—It was accelerated by if not due to the draught.

4372. We have had doctors tell us that in order to secure a current of air throughout the wards it is absolutely necessary to keep these windows open. Is that true or not?—It is absolutely necessary to keep the ventilators of the windows open.

4373. Now in the winter time, if these windows are opened, is there not, and must there not be necessarily, a great danger from the draughts to the patients who are suffering from chest complaints?—There is a danger, but it can be greatly modified.

4374. May be modified?—Decidedly. They can be placed in the corners, where the draught is not felt.

4375. You did not appreciate the danger at that time?—Yes I did. This man had been placed there before I saw him, but I at once gave instructions, as the nurses know, that any cases under my care were in future to be put in safe corners, out of the draught.

4376. Is not this only another illustration in which the death of a patient has drawn attention—distinct notice—to the defects in the Hospital?—Not from the insanitary conditions, but from too much good fresh air. It is admitted on all hands that a certain number of cases may do well outside, but ill inside, a hospital; even in the best hospitals.

4377. Does Erichsen admit that?—Perhaps I should be able to convince Erichsen that it was so. I will put it in this way: A large number of the cases that go into the Dunedin Hospital are apt to go wrong from the causes already explained.

4378. Should such a state of affairs exist in the Dunedin Hospital by which a patient can be killed in thirty-six hours, his death being directly traceable to draught; when he was expected to recover in two weeks at the time he was sent in?—I do not admit that the Hospital killed that man, I say it was carelessness on the part of the officials—the warders, the house surgeon—in putting him where he was put. There should have been some one there to see that he should not have been exposed to the draughts.

4379. How could you avoid that?—By putting him in a corner away from the windows. I have had that done ever since, and I have never since had a casualty.

4380. Have some of your patients been kept in the Hospital for three months, from the same cause?—That is not true. I have had erysipelas, which I attributed to draughts.

4381. You have told us that you use the Hospital as a sanatorium. On the other hand, we have been told by ten doctors in succession, without hearing any expression of a contrary opinion, that the sanitary defects of the Hospital are a risk to the patients. Is that true?—That has not been proved. Some people make assertions, without any grounds.

4382. We have had ten doctors, without there being any expression of opinion to the contrary, who have told us that the defects in the Dunedin Hospital are such as to necessarily cause risk to the patients. I ask you again: is that true?—I dissent from that entirely, and I say that all my cases—there are plenty more if you choose—are a direct negative of that.

4383. We have been told that the Dunedin Hospital violates the rules as to walls, floors, and ceilings; that it violates all the recognized rules in regard to ventilation, to the number of patients that a ward in a proper hygienic condition should contain; that the waterclosets are not what they should be, and that the baths are also what they should not be; that general surgical cases are treated in the same ward as gynecological and ophthalmic cases; so that in all these matters the Hospital violates the rules laid down by authorities on the subject. In your opinion, are these things true or not?—Theoretically, they are violated.

4384. Can you tell me one rule of sanitation that the Dunedin Hospital complies with?—Perhaps not on theoretical grounds, but I say that none of these things you have mentioned need to be the cause of a single death.

4385. Then you say that what the authorities have written on these matters are all matters of no importance?—I say that they are matters of theory more than anything else.

4386. Then it is a mere matter of theory?—Yes. If it were so important, why do not they pull down the old hospitals, many of which are worse than ours, and erect new ones.

4387. Listen to what Erichsen says on the subject: "The faulty hygienic conditions that are still too frequently met with in hospitals are alike a cruelty to the patient and an injustice to the surgeon. The cruelty to the patient consists not only in exposing him to an increased chance of death, as it is commonly called to a 'higher rate of mortality,' from septic diseases that are preventible, and that are the direct outcome of the defective hygienic arrangements of the institution, but in subjecting him to a prolonged and imperfect convalescence, either or both of which conditions may be taken as the measure of the neglect of sanitary arrangements in a hospital." What do you say to that?—Of course, we all wish to see hospitals made as perfect as possible.

4388. Do you admit, or do you not, that the Dunedin Hospital directly violates every rule laid down by authorities as to the sanitation of a ward?—Yes, theoretically, it does.

4389. Are you of opinion that that is a matter of no importance?—I am of opinion, apart from the question whether the air of the wards is pure, that the Dunedin Hospital is healthy.

4390. Though it violates every principle of sanitation?—Yes.

4391. If you consider that the Hospital is so grossly imperfect as to ventilation, that the walls, flooring, and ceilings are imperfect, that the waterclosets and baths are not in the positions they should be in, and that there are more patients ——?—But I do not admit these things. I say that they compare favourably with any condition that has existed at any time during the twenty years it has been a hospital. Nor do I admit that there has been any overcrowding of the wards.

4392. Now, about that patient of yours who died with septic symptoms?—I do not admit that she died with septic symptoms.

4393. But she died with a temperature of 103°. Is not that septic symptoms?—It may or it may not be.

4394. I wish you would answer my question?—I say she did not die with septic symptoms.

4395. In your opinion, I understand, there is no necessity for remedying all these sanitary defects?—I admit that the Hospital can be improved,—I have always taken the same ground,—but I do not admit these alleged inferences. I say that the Dunedin Hospital is in a better condition to-day than it has ever been in its history.

4396. And your opinion is that these sanitary defects need not to be altered, but can safely be allowed to remain as they are?—A great deal can be said in regard to certain hospitals as charitable institutions——

4397. I do not want a lecture from you. I want your opinion—yes or no—as to whether these sanitary defects can safely be allowed to remain unaltered?—Yes. And I think that, if we have the same results in the future as we have had in the past, we shall have no reason to be ashamed of the Dunedin Hospital. When you reflect on the conditions and circumstances, surroundings of the houses, &c., of the majority of the patients in our hospitals, I say that you are not under any obligation to make your hospital into a perfect institution, but simply to make it very much better than these places whence the patients were taken from; you endeavour to improve their condition in the Hospital, and not to make it worse.

4398. I find that this resolution was passed unanimously by the staff: "That, in the opinion of the staff, there are certain sanitary defects in the Hospital which ought to be remedied." Is that true?—I do not admit that there are any sanitary defects, subject to the explanations I have made.

4399. Here is a resolution that was passed at a meeting at which you were present. It was also carried unanimously: "That it be a recommendation from the staff that arrangements be made to have separate wards for ophthalmic cases, gynecological cases, and children's cases." Did you agree with that?—Very likely I did, subject to the explanations I have made already.

4400. Did you dissent from it?—I did not consider it worth while to dissent. If I think I can carry my own way, I try to do so; if I cannot, I let the thing pass.

4401. Do you remember this being stated at that meeting by yourself: "Dr. Stenhouse was quite sure every one there would like to see a new hospital built on the most modern lines. Some of them might think that he was bidding for too much, and that they were not likely to get it. He thought that seeing such an agitation had arisen at the present time, that they were justified in endeavouring to secure this. . . . . It was not a Dunedin but an Otagan question, and every rich man in the province would feel bound to add a stone to the new Hospital. To spend £6,000 or £8,000 in adding to the present building would be almost a crime"?—I do not think I said that. I said then, as I say now, that if it would take so much money to give us these theoretical improvements, then we, as any sensible body of men would think of doing, ought to go in for a new Hospital.

4402. Have you never complained of the want of accommodation in the Hospital, or have you never had anything to find fault with?—Well, I should certainly have liked to have a ward for

infectious diseases, accommodation for the nurses, and a kitchen to each ward. These are things that would certainly be improvements.

4403. Let me call your attention to this resolution which you proposed in regard to what you now call the most healthy hospital in the world. [Resolution quoted.]—That exactly meets my views at present, and is what my views have been all through.

4404. Now, as to the stuffiness of the wards. We have heard that both the present and past house surgeons have frequently called attention to this matter?—I have not smelt any stuffiness; and I may say that in hospitals, even the newest hospitals, you cannot help finding stuffiness at some time or another.

4405. We have had Dr. De Renzi, Dr. De Lautour, Dr. Truby King, and Dr. Closs, all strangers, going into the Hospital and declaring that the state of the wards was most indecent. What do you say to that?—That shows the weakness of your case, when your witnesses have to be prompted by the prime mover in this matter.

4406. Now, you have told us that you have always found plenty of fresh air in the Hospital; yet these strangers, who have called in to see the Hospital, tell me they have found the wards exceedingly stuffy?—How can you place the opinions of the men you have mentioned, who have paid only chance visits to the Hospital, against the opinions of men who are there every day. I have left the front doors of the Hospital open, also the side doors leading into the grounds, and have found a delicious breeze flowing into the *cul de sac*, and the result is that the wards are immediately flushed, so to speak, with a deliciously fresh air. I have myself taken medical men through the wards of the Hospital, and they have been charmed with them.

4407. How do you explain that with the evidence we have had given here, of medical men who are strangers, and who have declared that they found the wards very stuffy when they visited the Hospital?—I have nothing to do with other men's opinions: I am simply giving you my own.

4408. Do you agree with them?—Certainly not; I have quite enough to do to answer for myself. As I told you just now, I have taken medical men round the Hospital, and shown them through the building, and they have all been charmed with our Hospital; and I have no doubt if they were put into the witness-box they would tell you the same. It seems to me that the whole thing depends on a little judicious prompting.

4409. Then, you are of opinion that it depends on which side prompts it, and that the medical evidence that I have called your attention to is not worth much?—Well, the evidence on your side is not worth very much.

4410. You think they did not have a fair opportunity of judging?—I do not think those gentlemen had.

4411. I suppose you think they do not know anything about it?—I think they do not know much.

4412. Dr. Colquhoun told us that the temperature in which the patients live in these wards is exceedingly stuffy, and that it is his opinion that it is certainly unhealthy. Do you agree with that?—Well, the wards may be theoretically unhealthy, but it does not do the patients any great harm. I have given you my opinion for what it is worth.

4413. And you say you have seen nothing extraordinary arising there, and that you do not think any of the defects I have pointed out do any harm?—No.

4414. Yet we have found in eighteen months that ten cases of erysipelas occurred in the Hospital. Is that an unhealthy state of affairs?—It might be.

5415. I want a more definite opinion. Do you not know that these cases broke out in the Hospital?—I do not know whether they did or not, but they could have happened in a perfectly healthy hospital. Of course, doctors do not agree as to what is erysipelas. What one man calls erysipelas another calls erythemia.

4416. Do you recollect the case of M——? How do you account for erysipelas in his case?—He had an immense abscess in the calf of the leg, which had left a scabbed cicatrix, which in my opinion was the nucleus of the erysipelas.

4417. Did it develop of itself?—Yes. Did you think it worth while to ask any of your witnesses if they had cases of erysipelas in their private practice? I may mention that every case of erysipelas I have had in my practice out of doors occurred from exposure to cold in a depressed condition of the system, and that the last two cases were among the well-off and wealthy people. Now, if I find erysipelas under those circumstances, outside the Hospital, is it at all strange to find erysipelas inside it? They breathe the same air inside the Hospital or outside of it.

4418. How many patients do you say you have during the course of twelve months?—I have no idea.

4419. Would it be one hundred?—Far more than that.

4419A. Five hundred?—About that.

4420. More than that?—I have had as many as one thousand cases in a year.

4421. Take last year. How many cases of erysipelas did you find?—I have had two cases anyhow. I may have had more, but I cannot remember the exact number. I have seen half-a-dozen cases within a limited area.

4422. Dr. Maunsell has told us that in his twelve years' experience he never remembers one case of erysipelas. He is mistaken; it cannot be true.

4423. Yet we find that in the Dunedin Hospital, which in your opinion is a sanatorium, four times as many cases of erysipelas occurring as were to be found in outside practice?—Patients in a hospital are particularly susceptible to erysipelas, not from anything which may exist in the hospital, but from their depressed condition.

4424. How does the erysipelas get in?—It comes in the air.

4425. Must there not be germs?—Now you are talking of things you know nothing about.

4426. Can a patient develop erysipelas without the germs of the disease being present?—Oh, yes. Have not any of your witnesses told you that?

4427. What sort of a disease is erysipelas?—That is a matter of opinion. The profession are divided in their opinion upon it, as they are upon everything else.

4428. Is there any difference of opinion as to the disease being a septic one?—Yes, and so much so at one time that they distinguished between medical and surgical erysipelas.

4429. Do you say it is a septic disease?—I have already said that on that point there is a difference of opinion.

4430. But what is your opinion on the subject?—I think it may be septic, but not necessarily. If you want authorities you have the book there. I have not gone into this matter fully, but I can give you an authority not in the books. He is one of the greatest surgeons in England—Jonathan Hutchinson. He is reckoned to be a good authority. He states that he has known erysipelas to arise in wards from the patients being exposed to draughts, and to nothing else, and without any septic origin. I will give you another fact that is worth knowing. In the Crimean war—and during the Austro-Prussian war, the German hospitals—and you know what state the hospitals were in during war time—had no erysipelas developed in them.

4431. Erichsen is reckoned to be one of the greatest authorities, is he not?—Yes; he is a very good man.

4432. Now, hear what he says upon this point: "The frequency of the occurrence of erysipelas in an institution may be taken as an indication of neglect of its sanitary arrangements." Is that true?—It may be true.

4433. I ask you is it true, or is it not, that all the great writers on the subject of hospitals say that the frequency of erysipelas occurring in our hospitals is an indication that the institution is in an insanitary condition?—I do not agree with that.

4434. Have you ever heard that before?—I have heard something like it: but I have also heard that a frequent cause of erysipelas occurring is dirty sponges, dirty knives, unclean surgeons, and students going from room to room. These kind of things are far more likely to produce erysipelas than any alleged defect in a hospital.

4435. Do you not think that, under circumstances like these, where we have been told of the Hospital being overcrowded, and of the want of ventilation, these are more predisposing causes towards erysipelas? And do you not consider that a hospital having a thousand cases and developing ten of erysipelas is in a bad way sanitarily?—I would not offer any opinion upon that question unless I had seen myself what the causes of the erysipelas were.

4436. We have heard of one case, that of Mrs. S——, and of another, that of Mrs. T———the latter being a simple operation for the reduction of a labial cyst—in which the patients developed septic symptoms of a very pronounced character almost immediately afterwards; and Dr. Copland, the house surgeon, has told us of the condition of the ward, and that there was a septic case in it. Do you think that that fact would be at all likely to account for what happened? It might be, but I should say an operation for labial cyst is very free to take an erysipelas.

4437. But I am speaking of septic poisoning, not of erysipelas?—It was not erysipelas in her case, was it?

4438. Yes.—I was not aware of it. I do not think sufficient antiseptic precautions could have been taken.

4439. Do you mean to say that antiseptic precautions are an absolute preventative of septic poisoning?—No, I do not, because, in a great many cases, my experience leads me to think it is autogenetic.

1440. Do you agree it is introduced from the air?—Not necessarily.

4441. Do you say it can be?—Yes; I go so far as that.

4442. Then you do not believe that the presence of germs in the air is a cause of disease?—I believe that.

4443. Supposing you have a patient in a ward with a wound discharging pus, and that from that patient is discharged such organisms into the air. Would not those germs produce disease in patients around him?—Then you must use your antiseptic precautions, because that is what you would expect in every surgical case.

4444. Do you think it is a proper or a safe thing, that a patient who is being operated on for labial cyst should be allowed to remain in a ward in which such a condition exists?—That is one of the disadvantages of a hospital in which you have a number of patients that have to be treated in a ward. Of course, if the public are willing to give us a model hospital, well and good. It is all a matter of cost. I could very easily sketch out a model hospital.

4445. You say you think our death-rate is very low?—Yes; I think a death-rate of 10 per cent. is not very bad.

4446. Take the death-rate for the last two years. Do you consider it satisfactory?—Yes; you have always to remember that a number of the deaths which have occurred are those of people brought into the Hospital in a moribund condition. But you cannot think of comparing the death-rate of one hospital with that of another, unless you know the customs of the hospitals and the classes of cases dealt with in it.

4447. *Mr Chapman.*] Do you know what the death-rate of some of the London hospitals is?—It ranges from 10 to 12 per cent., and sometimes goes higher.

4448. What is it in Edinburgh and Glasgow?—I think it is from 10 to 12 per cent.

4449. You have mentioned King's College Hospital. Have you visited that in recent years?—Yes.

4450. And what did you find to be the state of the wards there—the bed-space, and so on?—I did not take measurements, but, judging by appearances, I thought we had more room, more bed-space, and better ventilation in Dunedin.

4451. I suppose we may take it, in speaking of the number of beds, that they are sometimes shifted in cases of emergency?—Yes. I had a distinct impression when I was in London hospitals, that they were more crowded than ours.

4452. Comparing the Hospital with the average dwellings in Dunedin, what are the relative sanitary conditions of the Hospital for the purpose of treating medical or surgical cases?—I have saved many lives in the Dunedin Hospital which would have been absolutely lost in the homes of the patients, even when people were tolerably well off and comfortable. In some of the cases I have treated in the Hospital the cures have been simply miraculous, and I repeat you could not have had better results than I have had in the Hospital.

4453. I suppose you have read the reports of the Inspector-General from time to time?—Yes.

4454. Now, as to that particular case of Jessie McB——. I understand you to say that the staff agreed to an operation in the case?—They did.

4455. But they did not attend, you say?—They did not, except Dr. Gordon Macdonald; and I think it was one of the most scandalous and shameful things that the medical men connected with the Hospital have ever lent themselves to.

4456. You have performed some pretty serious operations, you say?—Yes.

4457. In private practice?—Yes.

4458. You had a case of Cesarian section, had you?—Yes, and the operation was perfectly successful. I had also a seven years old case of double ovarian tumour—one of the most serious that was ever admitted into the Dunedin Hospital—and the woman is alive to this day. I believe this Cesarian section is the only successful case of the kind in this colony.

4459. Then as to the death of the man which you say was accelerated by the draught of the ward. That, you think, would not have occurred had he been properly looked after?—I do; but since then improvements have been made. The matter having been discussed by the staff, and the attention of the Trustees called to it, ventilators have been put in, and I am satisfied with what has been done. There has been a good deal of improvement effected, and I am satisfied that the Hospital to-day is in a far better condition than it has been at any previous period of its existence. If there is any ground for the charges now made against the Hospital they should have been made against it years ago. I wish to say that it is so long since I visited the old hospital at Edinburgh that I cannot now particularise. It was, however, built on the block system, while the new one is on the pavilion system. I am pretty sure that the old one had not more than 80ft. of floor-space, while the new one has 150ft. in the surgical wards. The wards are very lofty in the new hospital; ventilation is therefore carried out close to the roof, which causes currents above the 12ft. or 13ft., beyond which some men have recently said that there is no ventilation, only stagnant air. In the new Edinburgh Hospital there are stone flags instead of wooden floors. The lighting of the wards at night is by means of a jet over each bed, with a patent ventilator to carry off the products of combustion. There are also fewer beds in the wards of the new than of the old Edinburgh Hospital. In the former, twenty-one patients are put on the medical side and only fourteen on the surgical, but this increases the cost of nursing. I may add that while in Glasgow, in 1886, I visited the Glasgow Royal Infirmary, which is one hundred years old, and the Western Hospital, which is a very fine building sixteen years old. While going round the former with Professor Knox, who is one of the surgeons, I remarked to him that the staff of the Infirmary were placed at a disadvantage as compared with the staff of the new Western Hospital. He replied that such was the case, but that their fine buildings and modern arrangements did not appear to give them better results, as statistically the old infirmary compared well with the new. From this remark I would infer that theoretical defects have really little or no influence on the recovery of patients. The same conclusion arises from a consideration of the case of the Norwich Infirmary, in which the age of the building and its numerous structural defects were ultimately proved to have had no influence in producing the insanitary condition of that institution. In this connection, I may refer to the new operating-theatre of our own Hospital. The staff determined to have a new operating-room, and everything connected with it spick and span. I read in the papers at the time of its opening that Dr. Maunsell passed an eulogium on it, saying that it was perfect. Now, I am afraid that there are very grave defects connected with the drainage—indeed, so serious are these defects that I am perfectly astonished that the surgeons ever permitted the building to be erected. There are sinks in the operating-room communicating with outside drains. Now, no matter how carefully these drains are trapped, it is impossible to prevent them from being a source of danger; and the blood and *débris* of operations are thrown down the sinks, some of which is sure to cling to the basins and pipes, and, decaying, become a source of septicæmia, pyæmia, &c. The water and sinks in connection with an operating-theatre should be situated in an adjoining room, never in the theatre itself.

4460. Some reference has been made to students being present at *post-mortems*, and possibly carrying trouble into the wards?—Yes. I believe that in the case of M——, who took erysipelas after operation and died, that one of the students did so, and that someone complained to the Trustees, who reprimanded him. As to the development of erysipelas, everybody agrees—I know it from my own experience—that it takes some days to develop. You may have febrile symptoms, but the disease itself takes some days to develop; therefore, it does not do to be hasty in forming a conclusion as to the cause. In M——'s case, erysipelas appeared on the face about an hour after he was visited by the student, which makes it utterly impossible that he could have been infected by the student.

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 Hôpetal 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 Infirmaries 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.

I have seen them so close in wards in France that it was a matter of difficulty for one to stand up comfortably between the two beds; and there there were typhoid fever cases in every second bed.

4483. I suppose that even in the best hospitals they must sometimes crowd in beds, against their own rules?—Undoubtedly they do. In Edinburgh Infirmary, the rules say that an allowance of 1,800 cubic feet shall be rigidly maintained; but when half-a-dozen good cases, from our point of view, came in, we were particularly careful to give them all admission. We accommodated them somehow or another. And I never traced any increased mortality to such cause. In Edinburgh "shakedowns" were used at night and taken up in the day. In St. Thomas's, London, where the cubic space allowance is 2,200 feet, that was considerably decreased on occasion, cots being regularly placed between two beds here and there.

4483A. Have you directed your attention to the waterclosets of the Dunedin Hospital?—Yes. I do not think that they are particularly bad.

4484. I suppose they are not in the ideal position, or are not ideal in arrangements?—They are not in ideal positions; but the amount of ventilation they get is very good.

4485. *The Chairman.*] You say that they are not particularly bad?—They are not. The method of ventilation has been particularly well devised under the circumstances in which they were placed. Whenever I have had occasion to enter them I have never detected any offensive odour in them.

4486. Nor in the ward, arising from them?—No; nor even in the watercloset itself.

4487. *Mr. Chapman.*] Comparing them with other places, take, for instance, hospitals in England: how do these waterclosets stand?—What strikes me just now is that, unless there is extremely careful supervision of the waterclosets by the ward nurses, I should consider that there would be just as many disadvantages arising from waterclosets being cross-ventilated as there is from the present system of ventilation, because the patient goes into a place where there are windows on both sides, and sits, while suffering from constipation, in a very considerable draught.

4488. In either case the ventilation would require proper management, would it not?—In any case what is required is proper management.

4489. Have you paid any attention to such matters as the walls and floors?—I have taken note of them; but I do not feel in a position to speak of them as an authority, like Dr. Truby King, who has made a special study of these matters, and has passed one of the best examinations of any one I know on sanitation. But I have read pretty widely on the subject, and that is only what every one else who has been examined here seems to have done.

4490. Is Dr. King an authority on this subject?—I should think so, for he is a Bachelor of Science, and has passed a particular examination on the subject.

4491. You knew him in Edinburgh?—I did, and I consider him the ablest physician in New Zealand, without exception.

4492. *The Chairman.*] Do you think that the floors are as good as they should be?—Certainly not. I do not think them good.

4493. What are their defects?—The material of which they are constructed, and their roughness. But they might be improved by covering them with linoleum, or well-oiled wax-cloth, which is easily looked after, and is better than the ordinary wood flooring, except it be treated periodically.

4494. Have you looked under it to see if there is any dirt accumulated?—No.

4495. Do you know how often the linoleum is removed?—I cannot say.

4496. Would you have the cloth or linoleum go right underneath the bed and the whole length of the ward?—Yes, I think so. I do not think any joining can be so good as the complete piece. But I would not say linoleum; I prefer wax-cloth. I would entirely cover the floors.

4497. *Mr. Chapman.*] You have seen the floors of some of the older hospitals in the Old Country: how do they compare with these in the Dunedin Hospital?—Some of them are quite as bad. The floors in the French and German hospitals are frequently composed of pretty soft limestone, a cold porous material which can by no possibility ever be cleaned.

4498. *The Chairman.*] Do you consider them well-ordered hospitals which turn out good results?—I think them strangely wonderful results.

4499. *Mr. Chapman.*] That is, considering the disadvantages they work under?—Yes.

4500. If the walls are frequently whitewashed?—I think whitewash is much too absorbent a material, because I consider that the walls do not present a smooth enough surface; but if there is repetition of the whitewashing it is very much better than a coating of paint, which would not be cleaned from one year's end to the other.

4501. But, taking the walls as they are, and assuming them to be disinfected from time to time, and to be frequently whitewashed: do you think that that is a desirable and effectual measure?—Yes. I consider that the most perfect hospital that the mind of man can conceive would rapidly get out of order if a general supervision were not kept over it. It very greatly depends on the quality of the materials you have at hand and which are used, as to whether good results can be got from your building or not. One has necessarily to judge from results.

4502. There is a system we have here by which two of the wards in the Dunedin Hospital are turned out—fallowed—for a time; that is, they are cleaned, disinfected, have their walls whitewashed, and the dadoes painted. Do you think that that system is a good one?—I consider that it is the great safeguard of the Hospital.

4503. *The Chairman.*] Have you ever seen it used in any other hospital?—Yes.

4504. Which one?—It is employed in Edinburgh. There they had one ward in twelve, I think.

4505. Was it fallowed once a month?—Not so often as that. I may mention that in the Royal Infirmary at Edinburgh the flooring of the whole building had to be taken up on account of the dry-rot.

4506. There was something wrong with the drainage, was there not?—There was. It was all remedied within a year after the building was opened.

4507. Do you approve of the fallowing system that is carried out here?—Most decidedly.

4508. Do you think that it has been effectual for the purpose for which it was designed?—I can only refer to the comparatively good sanitary Hospital which I now find it to be as the result of such methods. I think that probably things would have been very much worse but for them.

4509. *Mr. Chapman.*] Now, what, in your opinion, are the defects of the Dunedin Hospital?—I would like to mention first those I think to be actual defects in the building.

4510. But suppose you were asked to suggest reforms in the Hospital, in what order would you take them?—Then, I should certainly have isolation-wards first of all, and then a convalescent department—the latter mainly on the score of expense. I should put patients in a convalescent department because there they would be less liable to suffer relapse, supposing any septic case were to arise, or where they would undoubtedly convalesce more rapidly than if they were kept constantly surrounded by the sick and the dying. But I think the most important change—I certainly would call it the most important—would be the isolation of the wards.

4511. *The Chairman.*] Are those the only two things?—No.

4512. Perhaps it would be more convenient if you would state briefly all the alterations that you would propose?—I should alter the situation—not so much of the closets—of the bath-rooms and the lavatories, and increase the amount of their accommodation.

4513. Would that necessitate additional building, or could you manage it in each of the present wards?—It could only be managed by additional building. I think that special wards are demanded, besides the isolating wards. A ward for eye diseases is particularly wanted.

4515. *Mr. Chapman.*] In what order would you take the special and isolating wards—I mean in regard to their urgency?—First of all, I should have special wards for those cases which are brought in suffering from septic or infectious diseases—a very large class of cases which may arise in any hospital. Secondly, I think that there should be a small single ward, or rooms containing not more than two or three beds, for patients who have just recovered from the shock of accident or operation.

4515. *The Chairman.*] You put that immediately after the isolating wards and before the convalescent department?—Yes, but it would only be for these special cases.

4516. Then you would have an ophthalmic ward?—Yes.

4517. Anything else?—Better accommodation for the nurses.

4518. Would you do anything to the wards as they stand? Would you make any alterations, to the floors, for instance. Do you think that that is an immediate matter?—I have mentioned that already.

4519. Now, if you had to suggest reforms yourself, in what order would you take them?—First of all I would have special wards for the isolation of septic cases, then for accident or operation cases, then tubercular cases, then ophthalmic cases, and lastly for gynecological cases.

4520. Then you would put these even before the convalescent ward?—Certainly. These are reforms which are more important. There are, of course, less important subdivisions of the first heading.

4521. *Mr. Chapman.*] The first cases are those, I suppose, which have to be separated for the safety of others?—Yes. Firstly, there are infectious diseases, such as scarlet fever and hospital gangrene; then there are cases of lesser urgency, as patients suffering from phthisis, and possibly patients with strumous disease. I think it would be very advisable to separate these from the general mass of cases. There are, secondly, those who should be separated from the others for their own sakes. The question of increased accommodation for the nurses certainly demands to come in before such reforms as a special ophthalmic ward. Then I come to a ward for gynecological cases, and I consider it to be a luxury.

4522. There is some special reason, is there not, for a ward for ophthalmic cases?—Yes, they require to have a particular kind of light.

4523. You also mentioned having a small ward?—Yes, only for those cases that are suffering from acute inflammation or had been recently operated on.

4524. In cases of operations (speaking generally), in what sort of wards are important operative cases put in the Old Country?—They are usually put into a side-room off the ward, but if that be full then they are simply put into the general ward.

4525. *The Chairman.*] Would that be a room by the side of the operating-room?—No, just a room off the ward.

4526. *Mr. Chapman.*] Then the patients would be carried from the operating-room to their respective wards?—In Edinburgh, in some cases, patients are carried a hundred yards from the operating-room to their wards, and in other cases up three flights of stairs, along a passage 150 yards to 160 yards long—rather it is a long corridor—into the main building.

4527. Is that done in cases of major operations?—Yes, undoubtedly.

4528. Then in Edinburgh they do not provide special wards immediately in the vicinity of the operating-room?—No. In fact, Dr. Thomas Keith used to operate in gynecological cases, from lack of space, in the ward, in which there was a very large number of patients. I mean in the actual ward itself.

4529. *The Chairman.*] Was it because he had no special room, or was it to avoid the risk of moving the patient?—Yes.

4530. *Mr. Chapman.*] You have mentioned the name of Professor Keith. Is he an able gynecologist?—Yes, I consider him one of the most skilful gynecologists living at the present day. He is the only man, as far as I know, who has been sent from Great Britain to America for consultation purposes, for which he received a fee of £1,200.

4513. And you say that he sometimes operates in a general ward?—Yes.

4532. What is the nature of the ward that he generally operates in?—It is simply a small room containing three or four beds. He has a very small amount of accommodation at his disposal. In my time, when under Dr. Angus Macdonald, Dr. H. Croom was the one and Professor A. P. Simpson the other gynecologist. They sometimes operated in a side-room, and they sometimes took their patients to the general operating-theatre.

4533. Had they any special appliances in these rooms for operating?—No; they had no special appliances.

4534. Now, do you know No. 5 ward in our Hospital?—Yes; it is over Nos. 4 and 1.

4535. Could you safely operate in that ward?—From what I have seen I think you could quite safely operate there. The light is good enough at the end of the ward.

4536. You know about the appliances in the ward, the hot water, and so forth?—I do not know them particularly, but I think they are the same in all the wards.

4537. Do you think that sufficient hot water can be obtained there?—Certainly. It is merely a question of having a sufficient number of people to fetch it.

4538. How does that ward compare with the others?—It is larger, that is all; so far as light and conveniences are concerned the wards are practically the same.

4539. We have heard a great deal about mortality-rates, and have been told that the only satisfactory conclusion to be arrived at regarding them is to see how many people came into a hospital, how many were discharged, and how many went out dead?—That is only one instance where people have been judging by results. These must be analysed.

4540. Do you think that any satisfactory conclusion can be derived from such statistics?—Possibly the University section of the medical staff desire no analysis.

4541. Do you admit that there is a University section?—I do not admit that there is an anti-University one.

4542. Do you think the mortality-rate can be ascribed to "hospitalism"?—There really seems to me to have been nothing like a serious epidemic of "hospitalism," so far as I can judge. I have carefully listened to all the evidence given, and so far as I can make out there does not seem to have ever been a case dying from the most severe form of "hospitalism," common enough in hospitals in olden days—viz., pyæmia. Septic poisoning has been talked about, but it has not been separated into its component classes; but pyæmia—that is, essentially "hospitalism"—has not been mentioned as far as I know.

Mr. Solomon: It has been: the case of the man B——.

4543. *Mr. White.*] And in your experience of other hospitals you have also seen erysipelas cases?—Yes.

4544. And it has arisen in them?—Yes, I think so. Here they are actually brought in. I myself had one case. At one time the air was full of erysipelas matter before I knew of the fact, and then one of my cases had been in the Hospital for twenty-four hours. That was a week or two before these cases broke out.

4545. *The Chairman.*] Do you think that is wrong?—It is certainly wrong. There should be an isolating ward in the Hospital.

4546. *Mr. White.*] Then, about Kate W——: what was the nature of her case?—She was admitted under my care. Immediately I saw her I made up my mind she was rather a surgical case than a medical one, and I handed her over to Dr. Coughtrey, who was the surgeon of the day, as I was the physician.

4547. Was there any reason to think she had erysipelas?—I do not think so. I never heard of erysipelas appearing at ten one morning and not a vestige of it remaining early next morning. That was her condition. We saw her separately, and then consulted about her case after we had seen her together. She had an erythematous flush over one leg. Next morning there was no swelling of the skin and no appearance of redness.

4548. Was there any reason why she should have been isolated?—Yes; she was a suspicious case, and the most prompt measures were taken as soon as we suspected she had erysipelas. We knew there were some cases in the Hospital that would be specially liable to have erysipelas added to their present maladies. I was led to believe there were septic cases in the Hospital. I knew of one myself.

2549. Do you remember Mrs. S——'s case?—Yes; I was present at the operation.

4550. Dr. Batchelor said you were not?—But I was. As a matter of fact I assisted Dr. Batchelor by working the douche.

4551. Did anything special occur during the operation?—Yes; the douche stopped working for a minute or so. I had not noticed it was a patent one until one of the students told me to pump it. That is why I remember particularly the incident.

4552. It ran out?—There is a pump on it. It is a siphon douche, but with the addition of a pump to start it in case it should run out, or to start it again after the jug is refilled.

4533. You assisted at the *post-mortem?*—Yes.

4554. Will you kindly describe what you found there?—The whole condition?

Mr. Solomon: There is a report about it.

4555. *Mr. White.*] Did you sign the report?—Yes. I do not know if there are any remarks in it requiring elucidation. It is the copy of our remarks.

4556. We did not know of these remarks written by Dr. Copland?—Dr. Copland acted as *post-mortem* clerk to Dr. Roberts and myself while the *post-mortem* was being performed, and he made a report from our dictation as we went on.

4557. In Dr. Batchelor's letter to the Trustees he states that "he could positively assert that Mrs. S——'s death was due entirely to unhealthy hospital influences." Now, from what you know of the case, and the temperature chart, which shows she had a rise in temperature before

operation, do you think that is correct?—I am of the opposite opinion, most decidedly. I do not know whether Dr. Batchelor still maintains that. I understand he wrote that letter before the *post-mortem* was performed. I cannot conceive that he still holds the same opinion.

4558. I believe he still holds it.

Dr. Batchelor: Most decidedly.

Witness: I cannot conceive a single fact that can be brought to substantiate it. I thought he must have renounced it long ago.

4559. *Mr. White.*] Will you tell us why?—I do not consider that that was the cause of death as shown by the *post-mortem* examination. There was no evidence of septicæmia, and none of pyæmia. Septicæmia is a disease produced by local inoculation—almost invariably.

4560. *The Chairman.*] Was not peritonitis the cause of death?—No; septicæmia.

4561. *Mr. Solomon.*] I thought it was peritonitis?—I signed the certificate of death in the case with Dr. Roberts. To explain, I may read from Horsley and Erichsen. Horsley says:—"This, in the very large majority of cases, has been some putrid substance, usually the corpse of some person recently dead of a septic disease. Next, disease often occurs as a result of operations performed without antiseptic precautions; in these instances, almost always being introduced from without by dirty fingers or instruments, the possibility of it arising auto-echthonously being very slight. The dose: This may be necessarily small, practically invisible to the eye, for some of the most fulminating cases have followed a very slight needle-prick; it is the feature in the etiology of the disease which makes the nature of the (to say the very least of it indirect) virus very evident. The mode of introduction: This has already been indirectly referred to, and, in brief, consists merely in a wound of the skins which opens the subcutaneous tissue. Punctured wounds are more often followed by infection than incised ones, for the reason that there is but little flow of blood to wash out the poison. We now arrive at the debatable point whether the poison finds entrance at once into the blood, or indirectly or later by the lymph-stream. It would seem possible that either event may happen, and, if so, it suggests a part explanation why the incubation-period differs in the large majority of cases. *Vide infra.* As a rule, there seems to be no affection of the lymph-glands as a direct effect in uncomplicated cases; swelling and suppuration, when occurring in these structures, being evidently the effect of local inflammatory poison inoculated at the same time as the special septicæmic virus. Although this fact is suggestive, we cannot conclude therefrom that the poison is always absorbed directly into the blood-circulation. The poison, having gained access to the system, now occupies a certain period of time (the 'incubation'-period) before the first symptom manifests itself. The determination, however, of the most important point is beset with many difficulties, since it must of necessity but very rarely happen that an absolutely uncomplicated case even of acute septicæmia can arise. In a few instances, however, a person apparently in perfect health has been inoculated with an excessively small quantity of infective material, and has subsequently developed acute septicæmia; in the cases the incubation-period has been found to be from six to eight hours."

4562. *Mr. White.*] Now, Mrs. S——'s chart shows that on the night before operation her temperature was 101°, and that on the morning of the operation it was 100°. Under these circumstances do you think it was proper to operate?—Certainly not. She had undoubtedly before the operation an inflammation of the womb. And Dr. Batchelor himself said he knew she had inflammation.

4563. *Mr. Solomon.*] When did he say so?—At the *post-mortem*. We discovered metritis at the operation; and Dr. Batchelor's remark was, "Oh! I knew she had metritis."

4564. Was that taken down in the certificate?—No; I did not think that would be taken as part of what we found at the examination. She also had, in my opinion, salpingitis.

4565. *Mr. White.*] Do you recognise Erichsen as an authority on the subject of operating on the womb?—I have not looked at his work. I have studied special works on the subject of Emmet's operation. I know Tait's opinion. Of course, there are general instructions for all operations.

4566. We have also heard that the woman was suffering from a stickyyellow discharge.

Mr. Solomon: We have heard nothing of the kind.

Mr. White: It is on the thermic chart, and also in the case-book.

Mr. Solomon: Very well, go on; the only thing I object to is your making a statement.

The Chairman: It is written in by Mr. Hogg, clinical clerk to Dr. Batchelor. Mr. Hogg does not say how he came to put it in, and Dr. Batchelor denies it.

Mr. Solomon: You must prove it to be a fact.

4567. *Mr. White.*] Well, we will assume that she was suffering from this discharge. Can you say it was proper to operate?—I cannot imagine that any one could say so for a moment.

4568. And it is also said she had rigours and shivering fits?—I should have looked for them very carefully before operating. How long before operating did she have rigours?

Mr. White: I cannot tell you without the case-book—in fact, I think that is not stated in it.

Mr. Solomon: No one said she had rigours at that time. It was only when she was under Dr. Macdonald's care; before she was in the Hospital. He sent her there to be operated upon. Fight Dr. Batchelor, if you like; but fight him fair whatever you do.

Mr. White: I have no more questions.

4569. *Mr. Solomon.*] Now, we will take Mrs. S——'s case first, as it has been made a salient feature. You know that Dr. Batchelor is an experienced surgeon, do you not, in gynecology?—Yes, I have seen some of his practice. I should say he is a man of fair experience.

4570. And a careful surgeon?—Yes.

4571. Do you think if a woman was suffering from an offensive sticky discharge, or from metritis, which you noticed, that fact would escape his notice if he put her under chloroform and

made a careful examination of her?—Yes, I should say so; she might have had her womb at the time he examined clogged with mucus, or something of that sort.

4572. But supposing that he, with his knowledge of the subject—we will not compare it with yours—made a careful examination for the special purpose of ascertaining whether she was in a fit condition to be operated on, could he have overlooked such salient features as you have mentioned? —He must have overlooked them.

4573. Dr. Roberts says his *post-mortem* entirely eliminates the possibility of chronic endometritis. What do you say to that?—It is a disease about which there is a difference of opinion. Dr. Batchelor believes in it. I say she had endometritis and metritis, and purulent salpingitis. I found chronic pus in the tubes myself, which accounted for the inflammation.

4574. Well, Dr. Roberts says just the reverse, and it does not appear on your memorandum of *post-mortem*?—How do you know?

4575. I have seen it. Now, do you agree with Dr. Roberts?—I am bound to agree with everything on that paper; if it is not there I disagree from him.

4576. Dr. Roberts said on oath here that from his examination it was impossible for her to have been suffering from chronic inflammation. Do you disagree from that?—Yes, most decidedly.

4577. Now, that is Dr. Roberts's specialty—pathology?—Yes.

4578. And it has been his subject for many years?—Yes.

4579. You do not bow in any way to his experience. Now, this is the *post-mortem* in Mrs. S——'s case. [Read.] And, will you say she did not die from peritonitis?—Yes, that was one of the causes of the disease, but the final cause—the word which includes all others—is sapræmia.

4580. Then why do you say peritonitis and septicæmia?—You see these are marked 1, 2, 3, 4.

4581. You say sapræmia, and yet you—a B.A. of the University of New Zealand and a medical student—say this woman died of septicæmia?—Yes. That table was made out to show the sequence of events in the woman's body as we imagined them to occur.

4582. So that she got peritonitis before she got septicæmia? That is the sequence of events? —Well, perhaps I was a little too rapid in saying that.

4583. Which did she get first, septicæmia or peritonitis?—Septicæmia, certainly.

4584. So that your statement is incorrect, and was made in the hurry of the moment?—Yes.

4585. So the first thing she got after Emmet's operation was septic infection of the womb?—Yes.

4586. Where from?—I should think there is no doubt about it, she got it from the septic discharge that was constantly trickling down from her womb.

4587. *The Chairman.*] Infection through the fallopian tubes?—Yes.

4588. *Mr. Solomon.*] Can you show me any authority for the statement that that woman could not have got septic infection of the womb introduced from the air?—I do not find it stated anywhere, and then subsequently borne out, in any of the text-books.

4589. Do you say upon your oath that a person operated on for Emmet's operation, and who was in an atmosphere containing septic germs in a state of concentration, could not contract septic poisoning of the wound, which would spread along the fallopian tubes from the uterus into the peritoneum and produce peritonitis?—That would be a particularly roundabout way for it to take.

4590. Will you swear it is not consistent?—It is not consistent with fact.

4591. Supposing that is the case, is there anything inconsistent in the theory that the laceration of the os became infected from without with germs, and that the mischief spread along into the peritoneal cavity?—Most decidedly it is not so; septicæmia does not, in any case, affect mucus membrane.

4592. Tell me what you thought happened?—That there was a discharge escaping from the womb, having its cause of origin about the fallopian tubes.

4593. If that has been the case, would not the external walls of the fallopian tubes have shown a thickening?—It all depends on how long the inflammation had been there. I believe myself that in the vast majority of cases inflammation of the fallopian tubes is gonorrhœa.

4594. I understood you to say you found symptoms of chronic inflammation?—Yes, chronic inflammation of the uterus.

4595. Which had affected the fallopian tubes?—Yes, or *vice versâ*.

4596. Now, if there had been such a state of affairs, would you not have found some thickening of the external walls of the uterus or the fallopian tubes?—Yes, and the uterus was thickened.

4597. Was the thickening in the uterus due to chronic inflammation?—Yes.

3598. Dr. Roberts says it is incorrect to suppose that. He says the condition of the walls of the uterus absolutely precluded the possibility of chronic inflammation. You totally disagree with that?—Yes.

4599. Was there any thickening of the walls of the tubes?—At the outer extremity; and towards the inner ends there was some contraction.

4600. Was there any external appearance of the tubes to lead you to think there was some chronic inflammation there?—They were covered with purulent lymph.

4601. Dr. Roberts tells us the external appearance of the tubes precludes the possibility of chronic inflammation. You do not agree with that?—No.

4602. And it was only on cutting the tube across, and allowing the pus to ooze out, that the nature of the disease was ascertained?—Yes, it was apparent then.

4603. You disagree from Dr. Roberts and Dr. Maunsell, who say that this was caused by septic infection of the wound?—Undoubtedly so.

4604. Then, why do you first place—immediately after Emmet's operation—septic infection of the wound? There was septic infection of the wound?—Yes.

4605. And then septic peritonitis?—No; general infection of the body with septicæmia; but you are confounding peritonitis with septicæmia, and I would like you to transpose the words.

4606. But would it be quite sufficient to account for the woman's death?—No.

4607. Not septic peritonitis?—No; how can septic peritonitis arise here?

4608. What is there in the nature of this case, now, to contradict this view: that the woman received a wound from the operation, that it became infected by septic poisoning, that that poison travelled along the tubes into the peritoneal cavity and so caused peritonitis? How is that view excluded?—Simply because no authority says that septic poisoning travels in such a way.

4609. There is a continuity of passage?—There is a continuity of lymphatics, which is the ordinary way—from the wounded surface straight into the lymphatics and the blood-vessels.

4610. Why should it not do both?—It never has done; we do not know of it.

4611. Let us look at your own authority—Victor Horsley. However, as I had better put this in, I will not bother. Now, I find that all modern authorities say that the terms septicæmia and pyæmia cannot be held to have any signification whatever as indicating specific diseases. You distinguish what would have happened in pyæmia to what did happen. Would you be surprised to hear a modern physician say: "The terms septicæmia and pyæmia cannot be held to have any significance whatever as indicating specific diseases, but are convenient to denote clinical symptoms somewhat allied. It is of great importance to remember that their meaning is only clinical"?—I have read all the literature on the subject I could get hold of. The most clear and succinct account of septicæmia is given by Horsley, the man who has by far the greatest reputation on the subject, the man who was chosen by a Royal Commission on Hygiene, selected by the British House of Commons to report on the subject, and he is distinctly of the opposite opinion.

4612. Well, now, to leave generalities for specific matters. In this case you disagree totally, both with Dr. Batchelor on the question of gynecology, and with Dr. Roberts on the question of pathology?—I do not know exactly what points in gynecology you say I disagree in.

4613. Dr. Batchelor positively asserts that, in his opinion, this woman died from septic infection of the wound, which travelled from the uterus, through the fallopian tubes, and into the peritoneal cavity, so causing peritonitis?—I disagree from that.

4614. And you as emphatically disagree from Dr. Roberts, when he says that the condition of the tubes and the external wall of the uterus precluded the possibility of infection?—Yes.

4615. You know that both these gentlemen are experienced as specialists in their respective subjects?—Yes.

4616. That does not affect your opinion?—It does not. It does not make the slightest difference. I made use of my own eyes, and I am speaking accordingly.

4617. You are as emphatically of opinion as ever that they are wrong, and you are right?—Yes; I am as emphatic as ever in my opinion.

4618. Now, we will come to the parts of which you speak generally, and on which your opinion is more valuable. By the way, you affect gynecology in Dunedin, do you not?—I have done a little; I do not affect it.

4619. As a specialist?—No; there is no specialist here.

4620. You do not recognise Dr. Batchelor as a specialist?—Dr. Batchelor practises ordinary medicine as well.

4621. Do you recognise Dr. Roberts as a specialist in pathology?—Well, I suppose the fact that he is appointed pathologist to the Hospital is in his favour, but he is a general practitioner, doing some pathology. He lectures on Pathology at the University, while I assist to examine his students.

4622. And you do not consider that experience in any of these branches is to be taken into consideration?—I do not suppose I would have been selected for the position of second examiner unless I had been supposed to have some experience also.

4623. But it is only four years since you graduated?—Well, seeing that these views change extremely rapidly, it is likely that what was true ten years ago when these men learned their business is not so true now as what I learned four years ago.

4624. But your definition of pyæmia and septicæmia is not by any means a recent one; it is fifteen years old?—Yes, I dare say.

4625. So you cannot class that as a growth of modern experience?—I was not particularising any diseased condition.

4626. Now, to come back to the Hospital?—You recognise Dr. Truby King as the most able physician in New Zealand?—Yes.

4627. And an authority on the question of hygiene?—Yes.

4628. Dr. King has told us that the ventilation in the Dunedin Hospital is wholly insufficient—radically wrong?—Are those his exact words?

4629. Yes, they are; and he has explained that there is not sufficient air introduced into those wards for two-thirds of the patients?—Did he measure it?

4630. I do not know, but he told us that?—Yes; and he said he did not use an anemometer.

4631. Dr. King says that, while there are fourteen or fifteen patients in each of those wards, there is not sufficient fresh air introduced into any of the wards for one patient.

The Chairman: He says there is not egress for a sufficient volume of air to move.

Mr. White: That is, excluding the windows.

The Chairman: They can be used as a means of ingress as well.

Witness: I should like to ask you a question. Seeing you have taken Dr. King as an authority, are you giving his exact words, or simply what you remember?

4632. *Mr. Solomon.*] What I tell you was the case you may rely on. Well, we will go now beyond the reach of controversy. Dr. King said it was not proper to put one patient into those wards, not proper to put any into those wards, as they are at the present time. Do you agree with that?—I want to know his reason for doing that.

4633. His reason is, that there are insufficient means for getting pure air into the wards. —If such were the case, and fifteen patients were constantly kept in them, I should say that each ward would soon become a "black hole of Calcutta," and that every patient would be affected with septicæmia or pyæmia in a week.

The Chairman: He says that supposing the windows were closed the inlets amount to 2,429ft. —enough for one patient—and that the outlets are not sufficient for one patient.

4634. *Mr. Solomon.*] Now, Dr. Jeffcoat, remember we are dealing with the Hospital as it is, and not with it as it might be. The question we have before us is: Is it a safe healthy Hospital as it is? Dr. DeLautour, or Dr. DeRenzi, tells us it certainly is not safe to put more than eight persons into any of these wards as they are now, and Dr. King said nine. Do you agree with that?—In view of the statement that Dr. King has already made—that there is not sufficient air for one—I should think that neither of his statements was worth anything.

4635. *The Chairman.*] He said that the outlets provided would not be sufficient for one patient; but, in addition, that the air escaped by the doors and windows and other irregular apertures.—That does not alter the fact that only sufficient air enters for one patient; and then he says they are fit for nine; both statements cannot be right.

4636. *Mr. Solomon.*] Dr. King said that theoretically it was not proper to put one patient in? —Yes.

4637. But he said that the very outside to put in were nine?—Is that theoretically, because practically it is good to put in fifteen.

4638. Yes; and the house surgeon says, too, that with ten or fifteen in a ward the air is somewhat stuffy. Well, you have said what is a proper system of ventilation?—Yes.

4639. Is there in the Dunedin Hospital at the present time any systematic means of ventilating at all?—Systematic means?

4640. *The Chairman.*] You mean, has ventilation been provided in any of the manners usually adopted in hospitals?—It has only been done by a system of window-valves and air-tubes.

4641. It is done by air-valves, you say?—Yes.

4642. Do you consider that is satisfactory?—I do not.

4643. *Mr. Solomon.*] Now, if that is so, and you were suggesting alterations to the Hospital, would you not consider that first?—No, I do not think so.

4644. Where would you place it?—It would be somewhere near a gynecological ward.

4645. So that a proper system of ventilation in the Hospital is a luxury?—Well, one knows perfectly well how good the results are in the present circumstances.

4646. You have said the system of ventilation is unsatisfactory?—I did not say that ventilation was a luxury.

4647. Well, you said it came somewhere near a gynecological ward?—Yes.

4648. *The Chairman.*] I understand you to say it is not very urgent?—That is so. I never looked on it as so urgent as other things are.

4649. *Mr. Solomon.*] Do you mean to say that a ward in the Hospital, which your own standard of knowledge says should contain at the outside eight patients, and in which there are bathrooms that ought not to be there—but, by-the-by, do you agree with the statement of the staff that the baths should not be allowed to remain where they are now?—I do not agree particularly with it.

4650. Do you emphatically disagree from it?—No. It is no particular matter for emphasis in either one way or the other.

4651. You generally emphatically differ?—Only when I have reason for emphatically differing.

4652. This is the voting of the staff: For—Dr. Batchelor, Dr. Coughtrey, Dr. Maunsell, Dr. Gordon Macdonald, Dr. John Macdonald, Dr. Stenhouse, Dr. Lindo Ferguson, Dr. Roberts. These gentlemen say the beds are necessarily placed too close together. Do you agree with them?—Yes; simply because you have sometimes to put septic cases in some of the beds. But there is no use in my agreeing with it, as most of the gentlemen have signified their disagreement with it.

4653. Do not trouble yourself about that. You say that the ventilation is not urgent at all?—I do not see how it can be.

4644. Here is what the staff say: "That it is therefore essential for the well-being of the patients that there should be a system of ventilation adopted which would bring nearly 80,000 cubic feet of air into the wards per hour"?—I believe a system has been adopted since that was passed, at any rate in some of the lower wards. I think it is Tobin's system.

4655. Listen to this: The staff say that, in their opinion, "it is essential to the health and well-being of the patients that a proper system of ventilation should be introduced." What do you say to that?—I want to know when that was said, and what has been done since.

4656. Nothing?—I understood that that was in a report that was made many years ago.

4657. The report is dated the 27th May, 1889. Now, these gentlemen say that it is essential for the well-being of the patients that this change should be made. Do you still adhere to the statement that there is no necessity for alteration?—I cannot possibly agree with them; I perfectly recognize it would be highly advisable to have a better system.

4658. But you say that there is no urgency for alteration?—There are lots of other things that come in first.

4659. Is there any urgency, I ask you again, for this alteration?—There is urgency, possibly, for providing a system of treating each surgical case in a tent.

4660. Answer my question?—I cannot give you an answer "yes" or "no."

4661. Just now, when Sir James Hector asked you, you said "No." Why cannot you answer me?—I appeal to Sir James. What I want you to tell me is where the relevancy of the urgency comes in.

4662. I have repeatedly called your attention to the statements of the staff, and I ask you do you disagree from that statement?—I do not consider it urgent, as there are some other things which come in.

4663. Do you disagree from the statement after hearing the opinion of the staff?—I still say no.

4664. Do you agree that it is essential to the well-being of the patients?—It depends on the word "essential."

4665. Is it essential, or is it not?—It is highly advisable.

4666. And yet you say that although it is highly advisable, when I ask you where would you put it, you say down about the gynecological ward?—Yes, because there are other things that should be brought about before it.

4667. Now, do you seriously intend to say that, as a modern physician, you do not recognise that a proper system of ventilation, which will secure pure air for the patients, is not highly advisable?—These people have a system which will secure pure air. Dr. Stenhouse says the same thing.

4668. Did you not hear Dr. Roberts, who was house surgeon at one time, say that he had had to complain of the stuffiness?—He has not been house surgeon for four or five years.

4669. He said that was the case when he was there?—Of course, in any system of ventilation much depends on the amount of supervision to which it is subjected. If you have a system of propulsion, and your engineer goes to sleep, it will not go on properly.

4670. Do you find any draughts in the Hospital?—I have noticed them, particularly in one ward—the tower.

4671. Is there an open fire there?—Yes; there is a fire in the corner.

4672. Hear what these gentlemen say again: "The second grave result of an open fire is the amount of draught it produces. In addition to drawing down vitiated air, it is the centre of a system of cold air coming from beneath the doors and from the windows, and, as these currents are heavier than the other air in the room, they sweep along the floor and chill the patients' legs and feet." Do you agree with that?—No, for the particular reason that I was standing opposite the open fireplace in No. 8 with Dr. Ogston, and he said, "What is the use of making this a means of ventilation?" There was no draught up the chimney at all. I may say that Dr. Ogston is a specialist in this subject. I do not consider that with these large openings in the fireplaces there can be any draught. The main upward draught was very slight.

4673. *The Chairman.*] If a fire does not draw it must smoke. Was it smoking?—No.

4674. Then the smoke must have been ascending?—Yes, but very slowly, as the draught was so slight. We tested it, and could therefore see the amount of air that was ascending.

4675. *Mr. Solomon.*] There is only one thing I wish to ask you in this report. With regard to the closets, you say you cannot see there is anything to complain about?—Not much to complain about. They are walled off. The lavatories and baths are more obnoxious.

4676. The staff say, "We are strongly of opinion that no system of double doors will render a ward safe which has a closet opening directly off it"?—I suppose that means that the double doors are only a system of ventilation. There is comparatively good ventilation.

4677. They also say: "We consider (and our views are those of the best authorities on sanitation) that all closets should be outside the wards, and that communication should be by a lobby which has free cross-ventilation." Do you agree with that?—That is a better system than that which prevails.

4678. But the staff say the wards are not safe. Do you agree with that?—No, I do not.

4679. Well, I would like to see the authority you do agree with. I do not see that you agree with anyone?—I am simply giving expressien to my opinions. It would seem as if the wards were not safe, with a mortality of 10 per cent., but it has been explained how that mortality has arisen.

4680. How?—By people being brought in in a moribund state.

4681. Where is the record of that?—Dr. Copland produced it.

4682. What did he produce?—A statement showing the number of people who died the day or so after their admission to the Hospital.

4683. Were those moribund cases?—Entirely so.

4684. *The Chairman.*] You said you objected to the cross-ventilation of the passages leading into the closets. Just now you said it did not matter, as the closets were thoroughly well ventilated by cross-ventilation.—Well, I would not say cross-ventilation; there is a shaft which gives upward ventilation.

4685. Is that not apt to give chill to the patients?—The cold air would rather pass over the top of the patient.

4686. *Mr. Solomon.*] Supposing you had to make alterations in the Hospital, in what order would you place a proper system of ventilation. You take first of all isolation wards, then convalescent wards, then you would alter the lavatories and the baths, and give increased accommodation. Where would you place ventilation?—Along with increased accommodation: the two must necessarily go side by side, as they are part and parcel of the same thing.

4687. I find that in modern books on surgery all writers draw special attention to the fact that great care should be taken in the construction and ventilation of hospitals. Do you agree with that?—Yes.

4688. Now, I find that in Dunedin Hospital, in the first place, its construction is objected to by everybody; it is connected with a central hall, which gives universality of atmosphere throughout the Hospital; its ventilation is wholly insufficient; and its walls, floors, and ceilings are made so as to specially encourage the absorption of germs. Is that so?—Yes.

4689. It is also said that the Hospital contains more people than it should, and that it has done so for the past twenty-five years, and that its cubic space is insufficient. Now, notwithstanding all

these things you say that there is no urgency for alteration?—It is a wonder that these authorities do not say that under those circumstances a hospital should be burned down. One can bring into the question St. Bartholomews, and other hospitals which have existed for a longer time, and whose results are better than new hospitals.

4690. You recognise the importance of sanitary arrangements?—Yes, I suppose I do.

4691. Here you have a Hospital that directly violates all the rules, whether in construction, ventilation, or wards?—It must be apparent to you, I think, that I am becoming more and more to feel afraid that there is not very much in all this theory. Does it not seem like that?

4692. No, it does not; and I do not think you will find the Commissioners think so either. It appears to me that you firmly oppose this reform, and that you will not see that your Hospital is defective?—Oh, yes, we can see it is defective according to all the theories laid down. It violates every theory, and yet we see that the results attained in it are just as good as in those hospitals that do comply with the requirements. That is a thing I cannot unravel.

4693. And yet your death-rate is the highest in New Zealand—almost twice as high as Wellington. Put it this way: you had more than forty deaths in the same number of patients in two years. You have had seventy deaths more in two years than in Wellington?—In the last year in Wellington, I believe I am correct in saying, they treated 140 cases of scarlet fever, with two deaths.

4694. But you say your cases are fairly good?—Yes.

4695. I will give you a list in connection with the Christchurch Hospital, which we have taken the trouble to prepare. It will open your eyes and the eyes of some of the Dunedin doctors. In the Dunedin Hospital there were 44 serious operations, 53 comparatively simple operations, and 25 trivial operations: total, 122. In Christchurch there were 52 serious operations, 44 comparatively simple operations, and 50 trivial operations: total, 146. In Dunedin there were nineteen deaths, and in Christchurch one; and yet you say your results are satisfactory. And, further, out of these nineteen deaths fifteen were accompanied by septic symptoms. What do you think of that?—It is a most extraordinary statement.

4696. Does that shake your opinion?—It does.

4697. Those are facts, are they not?—I should imagine they were.

4698. Here is the whole thing sent down to us from Christchurch. You are perfectly welcome to take it home with you.—My contention is that all septic infection is due to the absence of antiseptic precautions, unless it be proved they died from pyæmia.

4699. I prefer to call it septic poisoning.—I do not care what you call it.

4700. Do you tell me this: that an unhealthy condition of the atmosphere, in which there is a patient suffering from an open wound, will not induce septicæmia?—Yes.

4701. Can you show an authority?—I think I can. I can find that pyæmia—

4702. Do you agree with Kohn, that there is no difference between pyæmia and septicæmia?—No.

4703. *The Chairman.*] There is no distinction?—I am not disposed to agree with that.

4704. It is a matter of opinion?—Yes.

4705. *Mr. Solomon.*] You recognise Kohn as an authority?—Yes; he is a recognised authority.

4706. And he says there is a distinction?—I have not seen that.

4707. Pyæmia can certainly be introduced out of the atmosphere?—Yes.

4708. So that it is a matter of opinion whether septicæmia can or cannot?—Yes, if you take that theory.

4709. Do not some authorities say that septic organisms can be absorbed into the respiratory tract?—That could be said about twenty years ago.

4710. But do not Holmes and Horsley say so?—It is a matter of very grave doubt. A man cannot believe two things, and there is no use badgering me about my opinion.

4711. Now, you told us what your results proved, and you judge only by results?—No; I will not say that.

4712. You have to admit your Hospital contravenes all written authority?—One has to analyse the results.

4713. Can you point to me one feature in which it complies with recognised authority?—The fact that there are spare or fallow wards is a most important feature in it, as it allows the other wards to be cleansed.

4714. You say there are too many patients in the Hospital, so you can hardly say there is a spare ward?—The others are never overcrowded on that account.

4715. The staff says that "the beds are too close for the health of the patients;" and if you use these as spare wards you overcrowd the others?—Yes; it is a choice of the lesser of two evils.

4716. Tell me one good thing in Dunedin Hospital that is a good feature, or that is passable?—That is a good feature.

4717. And yet it is necessarily accompanied by crowding?—No, you have only to destroy one or two beds in the ward and that evil is done away with.

4718. But with a Hospital with one hundred patients in eight wards, if you empty two wards you would only have six left, and then you would have more patients to get into them than would be proper hygienically?—I would not fill them regularly, but I would constantly use them as fallow wards.

4719. *The Chairman.*] Would it be necessary to do so if the wards were in thoroughly good order in a good hospital?—I believe that is one of the most useful and effective systems. It is adopted in the latest hospitals in the United States, and the principle has been recognised as one of the greatest safeguards you can have.

4720. In pavilion hospitals it is always done?—Yes.

4721. In ordinary hospitals it is not usually practised?—It is a pretty expensive way.

4722. *Mr. Solomon.*] In the first place, supposing we cannot get a new Hospital, do you not think it would be far better to take up the floors, and make walls and ceilings correspond with what they ought to be; to put in a proper system of ventilation, and instead of having about fifteen beds in a ward have about eleven, and use the other two wards?—No. I do not think anything I know of would be the equivalent of using all the wards in the Hospital.

4723. Point out another feature you look on, not with pride but with satisfaction, in connection with its sanitary condition?—No others strike me.

4724. Point out any other thing in connection with the sanitary condition of the Hospital of which you must not say "That is wrong"?—Well, the drainage, so far as I am capable of examining it, is all right.

4725. Dr. King, whom you acknowledge as the most competent authority, tells us it is all wrong?—I do not think so. I went over it with him, and said he was satisfied with it.

4726. Well, that is different to what he said here?—There is one particular point with which fault is to be found, and that is that all the traps and drains are not visible in all their extent.

4727. And not ventilated?—Some of them are.

4728. Dr. King said that as regarded the drainage he was not satisfied with it?—That is not saying it was bad. If he can only say as much, that statement about it is good, because he is a particularly captious man.

4729. This is what Dr. King says: "The freshwater gutters of the roof opened into the soil-pipes. The bath-wastes, the basin-wastes, and sinks opened directly into the soil-pipes. None of these things should exist. The special danger was that in the case of heavy rain the 4in. pipe would become full of water, and this would exercise an aspirating power on all the traps leading into the soil-pipes, and would infallibly unseal the weakest trap, if not others, giving a direct access of foul air, not into the closet necessarily, but actually into the ward itself"?—We made experiments to see whether these traps would be unsealed, and they would not; therefore his infallibility is theory.

4730. *The Chairman.*] He says it is impossible to test the thing unless we had a heavy shower of rain?—Just so.

4731. *Mr. Solomon.*] Dr. King says about the floors: "They were exceedingly unsatisfactory. He had never seen such bad floors in any hospital, so far as he was aware." Do you agree with that?—I suppose the same thing applies to all wards.

4732. Do you agree?—I do not see what is the point in it. I want to know by what reason he has arrived at his conclusion, and by what mental process he has arrived at that opinion.

4733. I cannot tell you?—But I must know it.

4734. He says it is specially favourable to the reception of germs?—I do not think there is any necessity for taking that matter up. Several things might be done about it.

4735. Now, let us see what he says about ventilation. He says that No. 7 ward would not hold more than eight patients under present circumstances. He says: "With regard to inlet of air, there is not sufficient inlet in the whole ward for one person. He considered the pavilion system was certainly preferable to the block system, if it were intended to build a hospital. He thought that No. 7 ward would not hold more than eight patients under present circumstances; even by making use of the windows, and that was very objectionable. If sixteen persons were in the ward, the risk they would run would certainly be material." Do you agree with that?—Yes.

4736. So that the risks a patient runs under present circumstances are material?—Yes; if the wards contain sixteen patients the risks would be material.

4737. On the very day Mrs. S—— was operated on there were sixteen patients in the ward. Would the patients under those circumstances run a material risk?—What of?

4738. Septic poisoning?—No.

4739. What of, then?—If cases of erysipelas or septic poisoning arose in the ward the whole of the rest of the patients would suffer.

4740. In No. 7 there was a case of septic disease, was there not?—I should say of pyæmia.

4741. Well, with such a case in No. 7 ward, from which septic germs were being given off—with sixteen patients in the ward when there should have been only eight, and with the present system of ventilation would patients with open wounds run any danger of septic poisoning?—What do you mean by septic poisoning?

4742. Well, call it pyæmia, if you like. Would you be surprised to find that a patient who had been operated on for Emmet had got on very well, but that sixteen days after the operation she had developed symptoms of septicæmia?—Yes.

4743. Supposing in your private practice a patient was operated on for Emmet, and after getting better for sixteen days developed a high temperature, what would you say?—I understand this particular patient had a high temperature before operation.

4744. I am speaking of Mrs. P—— now. Here is a woman who had almost wholly recovered, and about sixteen days after the operation—just when she was about to be removed—she developed septic symptoms, and even now she is in a bad state. If that happened to you in your private practice, would you not be suspicious of unhygienic conditions?—Yes, undoubtedly so; but I do not imagine, as the patient is still living, that she was suffering from septicæmia.

4745. Why?—Because she would be dead.

4746. Do they all die?—They seem to all die.

4747. Do they never recover?—I do not know of one recovering.

4748. Can you give me an authority for that statement?—The books are full of such statements.

4749. Will you show me a book that makes that statement?—I could show you plenty.

4750. Very well. By-the-way, do you draw a distinction between pyæmia and septicæmia?—Yes.

4751. *The Chairman.*] Do patients recover from septic poisoning?—Yes.

4752. *Mr. Solomon.*] And if there are septic germs in the air ——?—Septic poisoning has nothing to do with septicæmia. In this, if they only absorb one germ, it is all up with them.

4753. From a vitiated atmosphere?—I could not say that.

4754. Would you say they could not?—Well, I should not like to say they could, only secondarily. If vitiated air gets into a wound and it suppurates, then they develop microbic substances, the process of suppuration taking place in the wound—the same process which, I say, gives them sapræmia.

4755. If you had a patient you operated on for Emmet's operation and the patient got quite well, but suddenly took septic symptoms, while at the same time the temperature went up to 103° and the wound broke down, though every care in treatment had been observed; and if, after a lapse of six or eight weeks the patient is still bad, would you not be suspicious that something was wrong in the air?—Yes.

4756. And supposing, in the same week, you had another patient you operated on for a simple operation, like the reduction of a labial cyst, the patient being in a perfectly healthy condition, and that a few days afterwards septic symptoms developed and you had to wash out the wound?—I should like to know whether these septic symptoms had occurred before in suppuration, as a lot depends on that.

4757. I think suppuration took place in the labial cyst first. Would that not be suspicious?—I should look for the source of the infection.

4758. And what should you say supposing you had in the same ward a woman discharging pus, and a room containing sixteen persons when it should contain only eight, would you not say that the bad air was the source?—No, there are other ways—the vagina, the urine, or the anus.

4759. Suppose you had the case of a boy operated on for excision of the knee-joint, and he was on the point of being better when he took a septic sore throat, and the wound commenced to suppurate, would that not raise any suspicion?—Yes, certainly it would.

4760. And yet you say the results are good? Let me tell you, all these things have been sworn to. For instance, Dr. Gordon Macdonald says he had fifty cases, and that in ten suppuration ensued. Is that not suspicious?—Well, I am afraid I have not watched the evidence closely.

4761. But you may take my word for it, that out of fifty odd cases Dr. Macdonald has had ten or eleven cases of suppurating wounds. Is that suspicious?—Yes; it would be if I knew the particular cases in which they were suppurated.

4762. Dr. De Renzi says that all the time he has been in the Hospital in Christchurch no erysipelas cases arose, and yet we find that in a similar time (eighteen months) there are ten cases of erysipelas in our Hospital. Is that not also suspicious?—I know that cases of erysipelas are admitted. Did every case arise in the Hospital, or were they introduced? How many are there in the Hospital?

4763. There are twenty-six, and none were admitted. Ten have arisen in the Hospital. Is that not suspicious?—We must not condemn the Hospital, because a large number of the cases are likely to have been carried in from outside.

4764. But these cases occur when none are introduced?—That I know not to be true, because I had a case myself which had only recovered from erysipelas at the time this epidemic broke out.

4765. I suppose you admit that evils arise from insufficient ventilation? You will not disagree from that. Those evils would be greatest in the winter time, would they not?—Yes, if they do arise, they will arise more frequently in the winter when the windows are closed.

4766. You agree also that erysipelas is a septic disease?—It depends on the bacillæ.

4767. Under present circumstances it would be more likely to arise in the winter than at any other time if the ventilation were insufficient?—That follows as a matter of course.

4768. Now, take the ten cases that arose: "Arthur J——, admitted 25th March, developed erysipelas in April;" "Francis B——, admitted 27th July, developed erysipelas shortly after."—What is "shortly after"?

4769. I cannot tell you.—Well, the value of such is nil.

4770. Erysipelas followed the application of strapping. The next case is on the 21st August: toe amputated, erysipelas followed. The next is on the 13th October. Every one of these ten cases, with the exception of one, arose in the middle of winter. Would that not raise a suspicion in your mind?—I should want to know when the majority of the other cases were admitted into the Hospital.

4771. I will tell you: "Georgina W——, 26th March, 1889."—Is that as near to the winter as the other cases are?

4772. Dr. De Renzi says that during the whole of his experience in Christchurch of three and a half years he has never seen a case of erysipelas arise in that Hospital. Is it not suspicious in your mind that during the last eighteen months ten cases should have arisen in Dunedin, nine of them in the winter?—Yes; but I do not understand why, when the ventilation is so bad, it does not extend through the whole Hospital when it once arises.

4773. Then you are surprised it is not more serious than it is?—Yes.

4774. Now, although the Hospital contravenes all the rules of a good hospital, does that fact alter your opinion about the necessity of alteration?—Those erysipelas cases, of which we have been speaking, should, I say, be isolated, because of their danger to the other patients.

4775. Do you agree with Erichsen that the frequency of erysipelas is a gauge of the sanitary condition of an hospital?—Yes; and another point is that, as there are at present no isolated wards, the probability is that when one case arises other cases arise through contagion.

4776. But that will never do. There is not one instance of that in the whole ten; in fact, there are only two in that ward?—But no surgeon or physician is confined to one ward in the Dunedin Hospital. They all travel from one to the other.

4777. Can a surgeon carry about septic germs?—Most decidedly.

4778. Can a physician take germs from one ward to the other?—Yes, he can.

4779. To be called for?—No, it does not require to be called for. One knows the danger that can be carried from a puerperal case.

4780. Is that by contagion?—Yes; but I would rather say, by inoculation, which is the same thing.

4781. Now, I want to ask you this: If you find that out of 150 operations in Christchurch only one death resulted, while in Dunedin out of 122 there have been nineteen, will not that shake your opinion as to the good results obtained here?—Yes; but you are making another statement at the same time.

4782. Never mind that in the meantime.—You cannot conceal part of the evidence, and get me to conceal part of my own opinion.

4783. You have told us that theoretically the Hospital is bad, but that, judging by results, it is good. Dr. Gordon Macdonald said that theoretically it was bad, but that judged by his nose it was good. Now, I show you the results, and ask you if those results do not shake your belief that they are good?—I think those figures do not mean anything. I should want to analyse them first very carefully before I express an opinion.

4784. Now, taking these facts together—that there have been ten cases of erysipelas, that suppuration has followed in a large number of cases, that your percentage of deaths after operation is ten times—nearly twenty times—as high as Christchurch, that we have a death-rate which is nearly twice as large as Wellington and half as large again as Christchurch—do you still contend you have good results?—Well, I will not say good, but I will not say bad. I will say fair.

4785. Can you have a doubt that your results compare most unfavourably with those of Christchurch?—There is no getting over that fact.

4786. Now, about Mrs. S—— and her symptoms of septic poisoning?—Of course, one wants to know what they are. I say she died from septicæmia.

4787. One symptom, then, was high temperature?—Yes; that is one symptom—very important.

5788. Now, taking the general facts I have put before you, can you still say that, although the Hospital is bad theoretically, your results are good?—Say, fair. They are precisely the results one expects to get in any hospital, to a greater or less extent.

4789. Is ten cases of erysipelas in eighteen months precisely the thing you would expect to get?—I never saw much better results.

4790. Christchurch had one case of erysipelas in eighteen months. How do you explain that?—I never saw such an hospital.

4791. You admit that the frequency of the occurrence of erysipelas is evidence of the insanitary condition of the Hospital?—Certainly I do.

4792. And is not the occurrence of ten cases a suspicious circumstance?—Yes; but they do not occur all at once.

4793. Which would be the more suspicious circumstance—that in the Dunedin Hospital ten cases of erysipelas should have occurred in eighteen months, or that ten should have occurred in eighteen days?—If the ten were of different patients under different surgeons, I should say the ten that occurred in the lesser period would be the more suspicious.

4794. How can you reconcile the fact that ten cases of erysipelas broke out in Dunedin Hospital in eighteen months, while during three years and a half not a single case broke out in the Christchurch Hospital? Would you be inclined to indorse the statement of your learned brother who went into the box this morning and said that the Dunedin Hospital was the healthiest in the world?—I should certainly not like to say that.

4795. *Mr. White.*] Will you kindly read this document. [Exhibit xlix. handed to witness.] It is about the erysipelas cases. You will see what Dr. Copland says about the case; and I may say that he as a surgeon believes the man had erysipelas when he presented himself; and it is only right to say that Dr. Maunsell says the erysipelas was developed in the Hospital?—I would not like to take the opinion of Dr. Copland against that of Dr. Maunsell. That would not be fair. At the same time, erysipelas having arisen in the case, it looks as if Dr. Copland was right.

4796. Now, about Mrs. S——'s case. Here are Dr. Copland's notes. [Witness read the notes]?—I must say that with some of them I completely disagree. I did not dictate them. There were two of us dictating at the same time unfortunately. One of the wrong things we did was in not obtaining the notes afterwards and reading them over to see that everything was in as it should have been.

4797. *The Chairman.*] How are they dictated at a *post-mortem?*—Sometimes one dictates a sentence and then the other. I do not think Dr. Copland took everything down he was told to take. I did not think the notes were going to form such an important part of this inquiry, or I should have read them over.

4798. *Mr. White.*] You will notice that part of the notes which refers to the womb?—[After reading notes:] I took particular notice of the abnormal size of the womb, and it was 3in. long, or more. What is stated in that paper is certainly opposite to what I say now. That is Dr. Roberts' opinion expressed in the notes, and exactly opposite to what I hold.

4799. *Mr. Solomon.*] What was the use of you two being together to perform an operation?—I do not know. It is quite preposterous that I should suppose that the inflammation spread along the uterus to the fallopian tubes. I made the actual cutting examination, and I was not cognisant that those words were uttered. I suppose it was because I was paying so much attention to the knife. If I had heard them then, I should have disagreed from them. It does not seem to me to be a scientific theory at all that inoculation should spread away from the wound over a mucous surface when it has open blood-vessels and lymphatics by which it can reach to get into the circulation.

4800. *Mr. White.*] Have you studied pathology?—Yes; particularly at Edinburgh, at Rostock, at Montpellier, and at Strasburg.

4801. Kindly read the paragraph about Mrs. P——'s case. [Witness read from case-book, p. 62.] Is it surprising that bad results should have followed?—I do not see anything from that paragraph to lead me to think that bad results should follow.

4802. *The Chairman.*] Do you say it is surprising that bad results should follow?—I see no reason why bad results should follow Emmet's operation.

4803. *Mr. White.*] She was in the ward after Mrs. S——, and was placed between two septic cases—Mrs. P—— and Agnes B—— —cases with septic charts, as we may call them?—That is not correct. Mrs. P—— always had a septic chart. She was in the ward on the 26th, and her temperature ran up to 102°.

4804. You say that Mrs. P—— was in the ward on the 26th, and that her temperature ran up to 102°. Now, Mrs. S——'s death occurred on the 22nd from septicæmia, and this woman (Mrs. P——) was in the ward at the same time.

Mr. Solomon: But she did not develop septic symptoms until the 29th.

4805. *Mr. White.*] Was the fact of Mrs. S—— being in there, admittedly septic, sufficient to account for Mrs. P——'s trouble?—I do not know what the condition of Mrs. P—— was, and I cannot give an opinion on incomplete *précis*.

4806. Dr. Stenhouse was asked a question about the last meeting of the medical staff, when a suggestion was made to remove certain patients, and it was suggested that that showed there was a division of opinion on the staff into a University and an anti-University party.

Mr. Solomon: I object to the question.

Mr. White: Very well, I will ask the Commissioners to put it to the witness. This is the minute: "Dr. Maunsell moved, and Dr. Ferguson seconded, that Dr. Batchelor's patients be transferred to a separate ward. Dr. Jeffcoat proposed and Dr. Gordon Macdonald seconded, that all cases be removed from No. 7 ward, septic or suspicious cases being separated from those to which no suspicion attaches, and that the ward be thoroughly cleansed. Carried—Jeffcoat, Coughtrey, Macdonald, and Stenhouse voting in favour of the amendment." It was suggested that that showed that the staff was divided, and that this was refused because it was advanced by Dr. Batchelor, as a member of the University party, as it was called.

4807. *The Chairman.*] Dr. Batchelor proposed that the gynecological cases should be removed?—Yes.

4808. *Mr. White.*] Then, as an amendment, it was proposed by yourself that the whole ward should be emptied, and the septic cases separated from the others?—Yes.

4809. In doing so, what actuated you?—I simply thought my suggestion was by far the best, in that it directed that all the septic cases—some of which were under the care of other surgeons besides Dr. Batchelor—should be separated from the others that were comparatively well. It would have been manifestly unfair to have left some of the cases when others were taken away. I do not recognise that septicæmia in a gynecological case is a whit more important than septicæmia in an ordinary surgical case. All lives are of equal value.

4810. It has been suggested that your motion was actuated by a desire to thwart the movement to get a separate ward for gynecological cases. Is that so?—No; it never entered my head in the slightest degree, and to say I am on the side of the anti-University party, is a piece of gratuitous impudence.

4811. Do you know of the existence of such a party on the staff?—No.

4812. It has been suggested that there is such, and that a question does not receive fair attention and is not treated on its merits by the staff on that account?—I believe there is a considerable amount of party feeling, but I should certainly be saying very wide of what I think if I said it was due to a University or anti-University feeling. For myself, I have never supported either one or the other.

4813. You received a letter from the Hospital Trustees?—Yes.

8414. And this is the position you take up?—Yes; I came to give evidence before the Commission because I thought there were possibly some points which I might elucidate.

4815. *The Chairman.*] Do you think it desirable, especially in the treatment of surgical cases, that there should be means of providing an ample volume of air at an equable temperature?—Yes.

4816. There is no such provision in the Dunedin Hospital?—No.

4817. Would it be possible so to modify the existing building as to make that possible?—I think the cost would be very considerable.

4818. You think it very necessary?—Yes.

4819. When you hear of the Christchurch Hospital being able to maintain its wards at a stated temperature of 64° day and night throughout the whole of the winter, do you not think that it is a very advisable thing?—Are they able to do that?

4820. Yes, all through the winter they do it.—Well, of course. I do not know what means they take.

4821. You think it is advisable?—Yes.

4822. Would you attribute the success there to such a temperature?—Well, if the ventilation and all other conditions—*e.g.*, supervision—were so perfect that that could be maintained, there is little reason to wonder why they have such good results.

4823. Do you think it is possible to modify the Dunedin Hospital to bring about a state of things like that? That is, to so arrange with traps that the temperature should not be allowed to rise or fall unduly. But perhaps you have not considered the matter?—No, I have not to any extent. It can either be done by heating the ventilating air, or by having a very widely distributed system of heating apparatus throughout the building.

4824. Have you seen that done in many of the hospitals you have mentioned?—It is arrived at to a considerable extent in Edinburgh. The wards were kept in an equable temperature both summer and winter. The amount of air taken through the heating pipes could be easily adjusted; and an equable temperature like that is of very great importance indeed.

TUESDAY, SEPTEMBER 9TH, 1890.

DR. FRANCIS OGSTON, sworn and examined.

Witness: I should like to say, before giving my evidence, that I have taken no side in this matter. I have carefully guarded myself against being a partisan on either one side or the other, and I am desirous of that explanation being made. I have made a communication to that effect to both Mr. Solomon and Mr. Chapman.

4825. *Mr. White.*] What is your name?—Francis Ogston.

4826. Are you a duly-registered medical practitioner for New Zealand?—Yes.

4827. What are your medical titles?—I am a Doctor of Medicine and a Master of Surgery.

4828. Of what University?—Aberdeen.

4829. How long have you been in practice?—For eighteen years.

4830. In Scotland?—Yes, and here.

4831. How long have you been in Dunedin?—A little over four years.

4832. You are a lecturer in the University of Otago, are you not?—I am.

4833. Lecturer on what?—Medical Jurisprudence and Hygiene.

4834. What experience have you had of hospitals generally in other countries?—I have studied in various centres—at Prague, Vienna, and Paris. I have also seen the Edinburgh and Glasgow Hospitals, and one or two in Germany, and nearly all the London hospitals.

4835. Are you a member of the Honorary Medical Staff of the Dunedin Hospital?—Yes; I have been a member since January last.

4836. What is your opinion as to the site of the Hospital?—I consider the site to be as bad as it can be. Part of the ground was, I understand, a swamp at one time, which was filled up with all sorts of rubbish. One part of the ground was higher than the rest of it.

4837. Then, as to the surroundings of the Hospital?—I should say they are as bad as they could be. Dunedin, though one of the largest towns of the colony, is said to be one of the most unhealthy. The drainage around the Hospital is very bad. There are four drains surrounding the institution, one on each side, which require to be periodically cleaned out, as they are not properly made.

4838. Do you say the site was originally a swamp? You do not say that from your own knowledge?—No, not from my own knowledge. The south side of it is below the level of the street.

4839. *The Chairman.*] And the basement of the Hospital is below that again, I believe?—I believe so. As I say, the Hospital is surrounded by drains, one on each side.

4840. *Mr. White.*] Have you seen a plan of the drainage of the town?—Yes, I have; and I have seen that the drains are in that position. The drains in the low ground, I observed, were not level, as the ground has not been properly sloped; therefore they do not empty themselves properly, and require to be cleaned out every now and again by the removal of sludge. I saw a quantity of sludge taken out of one of the drains in February last, and it was of a most filthy description.

4841. Was it taken from the sewers?—Yes. At that time I had a man in the Hospital who was suffering from drain-poisoning. He had been cleaning out this very drain.

4842. Where was he cleaning out the drain?—In Frederick Street, at the north end, and very close to the Hospital. The man suffered from sewer-gas poisoning. After he came into the Hospital the air of the ward in which he was placed was contaminated for a whole day, the smell from him pervading the whole ward.

4843. *The Chairman.*] Was that dangerous to the other patients in the ward?—It must have been.

4844. *Mr. White.*] What is done with the sludge from these drains?—It is carted to Pelichet Bay, I believe.

4845. *The Chairman.*] Is it disinfected in any way?—No. It is simply dumped down into the harbour, behind the reclaimed ground, near the present harbour wall, which is being filled up in this way.

4846. And that sludge would contain matter coming directly from the Hospital, would it not?—Yes, it would. The drains, I consider, simply form an elongated cesspool. The outfall is down Frederick Street and Hanover Street.

4847. The levels, in your opinion, are wrong?—Yes, they are.

4848. Where do the drains emerge?—At the foot of Frederick and Hanover Streets.

4849. Do all these drains join into one?—So far as I can learn they do, by cross drains.

4850. At what distance from the Hospital do they empty into the bay?—About a quarter of a mile.

4851. *Mr. White.*] There are some seven drains in all which enter into the Upper Harbour, are there not?—I cannot say.

4852. *The Chairman.*] Have these anything to do with the Hospital?—That might come under the surroundings of the site. I may say that I regard the Upper Harbour as nothing but an open cesspool; in fact, the whole of our air comes up from the bay, consequently we have what I might call a perpetual atmosphere of germs, especially in the part of the city where the Hospital is. So bad is the nuisance that, as a matter of fact, the residents of Ravensbourne and Pelichet Bay have often complained about the nuisance which comes from the foreshore.

4853. *Mr. White.*] Then the effect of the surroundings is to make the air which comes from that direction impure?—It makes it very impure.

4854. *The Chairman.*] And all the air that reaches the Hospital must necessarily come across this part of the harbour?—Yes.

4855. *Mr. White.*] For these reasons, then, you think that the site is objectionable?—I think it is decidedly objectionable, and, in my opinion, perhaps it is one of the most unhealthy parts of the town.

4856. Do you know anything about the Hospital drains?—So far as I can see they are old-fashioned; not constructed on any correct plan, and call for amendment.

4857. What alterations would you suggest?—I say that the traps at the foot of the drains, which collect all sorts of rubbish and filth that comes from the soil-pipes, not being flushed with water, are not sufficiently cleansed. They are fitted with old-fashioned gully-traps, which all sanitarians and practical plumbers have condemned for the last fifteen or twenty years.

4858. I believe that this was constructed by the Public Works Department only seven years ago?—I cannot help what the Public Works Department has done; I did not advise the Department. I am simply taking as my authority a book well known among architects—"Hellyer," who is looked on as one of the highest authorities on sanitation.

4859. In what respects are the traps defective?—As a matter of fact, they are not self-cleansing and will retain filth, which would require periodical removal by hand. I have looked at them occasionally and found them to retain filth.

4860. Which traps are you speaking of?—The little gully-traps outside the Hospital.

4861. Under the ground, do you mean?—Yes. The house is surrounded with some eight or ten of them, I believe; but so far as I could see they are worse than being without traps at all.

4862. Are they ventilated?—Yes, they have ventilators, but they are not self-cleaning, and therefore of no use. The traps do not ventilate themselves at all, and, as solid matter adheres to the side of them they are germ-cultivators, instead of being healthy traps. A certain amount of water only comes into them, and washes away but a small part. Above that the water leaves a deposit, which germinates a certain amount of filth. Even those around the new operating-theatre are ill-designed.

4863. Did you examine the drains about the building?—Yes.

4894. Did you find them offensive in any way?—I cannot say I found them offensive.

4865. *The Chairman.*] I suppose it is quite possible the traps might be propagating germs and doing a great deal of mischief without being offensive to the nose or eye?—Quite so. I may say, as a result of my own experience, I have not found anything like a proper sanitary fitting in any of the public buildings in Dunedin.

4866. *Mr. White.*] Nothing like the appliances that modern or perfect sanitary conditions require?—That is so.

4867. Now, as to the other drains about the Hospital. Have you examined them?—Yes, I examined the drains—I speak now particularly of the operating-theatre, which I take to be the latest effort of the builders and engineers of the colony—and found that one end of the discharge-pipes, sinks, and so forth, was merely 6in. in diameter, which is far too big for the flush-water to keep clean. The gully-trap was something immense in size—about 18in. square—and was filled up with stagnant water. At the top of this stagnant water there was a layer of filth about $\frac{1}{16}$in. thick. These traps are placed in such a position that the wind must necessarily carry up any germs emanating from them into the windows of the operating-theatre. Therefore, I am afraid that they may, under certain circumstances, be a kind of death-trap to anybody being operated on.

4868. *The Chairman.*] Do you know how the ventilators are managed?—I forget for the moment.

4869. Are the traps of the lavatories imperfect?—The basins are imperfectly trapped.

4870. Are they liable to siphon out?—There is nothing to prevent it. There is only one trap along a long line of pipe.

4871. What about the closets, lavatories, and baths?—The less said about them the better. I agree with most that has been said about them during this inquiry: that they do not comply with the general requirements of sanitation.

4872. You do not approve of the position of the closets?—I do not.

4873. You object to the closets being in the wards?—Yes.

4874. And the double doors: what is your opinion of them?—One day, before this inquiry came on, I happened to go in there, and was speaking to my students about closets, and demonstrating the working of them to them, I found in the closets the remains of what seemed to be what a man had been smoking. But I noticed no smell remaining. The ventilation of the closets was very good, and the double doors kept the smell from reaching the wards. I was surprised at the time to find that it was so.

4875. Did you examine the baths and lavatories?—I examined the baths, but as they were closed in by painted boards I could not see the fittings. I do not know how they are trapped. The lavatories have three basins with only one trap, and that is badly made. One water-seal is not sufficient for three traps.

4876. Did you try if they were properly sealed?—Yes; and both were unsealed. They were trapped on an altogether wrong system.

4877. *Mr. White.*] The soil-pipes go directly into the down-pipes from the roof. Do you know that?—I have never been able to follow the soil-pipes, because they are covered up. I must take that for granted, because I cannot trace them.

4878. *The Chairman.*] Do you think that is a good thing?—Certainly not.

4879. *Mr. White.*] It has been suggested that the defects of the closets can be overcome by putting up a plaster partition at the ends of the wards, with means for cross-ventilation in the

space thus cut off. Are you of opinion that that would have the desired effect?—I do not think that one can trust to a wooden partition.

4880. But this is intended to be a lath-and-plaster partition?—That is worse, because the plaster will crack and allow of openings. You must make a brick wall, well plastered, in order to prevent currents of air coming through it. This brick wall must be carried right up from the basement continuously, cutting through the floor, because a wall starting on the upper floor would allow currrents of air to come under the floor between the floor and the roof. And this is the situation in which, as a rule, traps are placed.

4881. *The Chairman.*] You mean that the wall must be carried up from the basement to the ground floor?—Yes; it must be carried solid through the floor.

4882. *Mr. White.*] You think that the soil-pipes should be taken outside?—Yes; taking of them inside has always been condemned. [Witness here described the methods of joining the pipes, and condemned the plan of joining adopted here.

4883. Now as to the building: is the general plan of the building satisfactory, in your opinion?—I do not think that any one can say that it is. It is an adaptation of an old building.

4884. Is it very unsatisfactory?—I do not think that it is very unsatisfactory. It is, however, very fairly adapted from a building which was not intended to be a hospital.

4885. What are its defects?—The want of proper cross-ventilation, and the want of light.

4886. As to the wards you mean?—The central hall is a mistake, and the excessive ventilation of that hall is a minor mistake. At times you have too much cold air.

4887. You say that there is sometimes too much air from the outside?—It is done with good intentions, and I do not think we can blame the Hospital for that. We have a plentiful current of air; it is rather too strong at times.

4888. But that is not vitiated air; where does it come from?—From the harbour.

4889. You condemn the Hospital because it is on the block system?—Yes.

4890. You say that the pavillion system is preferable?—Decidedly I do. That is the universal opinion.

4891. But the present Hospital is not very unsatisfactory?—I do not think so.

4892. You complain of the want of cross-ventilation in the wards?—Yes; that is an essential point.

4893. Could that be rectified or improved?—I think that the Hospital, as it exists, may be made very suitable for a medical hospital, but not entirely or perfectly suitable for a surgical hospital. With a little amendment it might easily be kept as a medical hospital.

4894. What form do you suggest that the improvements should take?—One witness has already suggested that we should take out one side of the square altogether—in fact, knock out the sunny side?—If you can let in air and sunlight without creating undue draught, that is what is needed.

4895. What do you think of the idea of a ventilating shaft?—It would not be satisfactory. It has been tried in the House of Commons, and other public buildings in the Old Country, and has always been found ineffective. It has also been tried in all the schools at Home. In fact, all sorts of systems have been tried, but they have never yet found one that answered the purpose satisfactorily.

4896. Then the natural system of ventilation is the only perfect one?—It is the only one, so far as acting automatically is concerned.

4897. *The Chairman.*] De you exclude methods with artificial heating of the air?—No; that is the best mode, but even that is not properly worked out.

4898. Do you think that the windows we now have in the Hospital are insufficient means of ventilation?—I am afraid that they are. I do not like them.

4899. Take them in any one ward?—But they differ very much in the upper and lower wards.

4000. Then take No. 7 ward?—Is that the one opposite to the female ward?

4901. Yes. Do you say that the windows are not satisfactory?—There are too many small windows, and they are too close to the beds, so that when you open them you cause a direct draught on to the patients.

4902. Do you know how many windows there are in a ward?—I have never counted them, but I should say from seventeen to eighteen, with a lot of little windows near the roof of the ward.

Mr. White: There are apparently forty-two windows in each ward.

4903. *The Chairman.*] Is that sufficient for lighting purposes?—I think so, on that side of the ward.

4904. Is it sufficient to light the ward?—Yes; the wards are well lighted.

4905. You are referring to their use as ventilators apart from their insufficiency?—Yes; I consider that they are improper as ventilators.

4906. *Mr. White.*] Do you think that they can be so arranged as to be made effective ventilators of the building?—Not without remodelling.

4907. Not without remodelling the whole of the walls?—Yes. The wall on the other side is unlit by windows, and being rough you must have the beds between the windows. Another reason is that the space between the beds is better lighted, and that, when the windows are opened, the draught does not come in on the patient's head.

4908. Do not the windows go very close to the ceiling?—The upper little ones do.

4909. Is not that in their favour, in the matter of a hospital ward, that they open as nearly as possible to the roof?—Certainly.

4910. Are there no other openings in connexion with the ventilators that directly control the currents of air?—In the upper windows they swing by the middle. There is one thing about these windows that must not be overlooked. If you carry out the proposal to have the closets partitioned off by a brick wall you would close up the end windows of the ward.

4911. As to the floors, what is your opinion concerning them?—The joints are not what they should be; they are far too open.

4912. Then they are not perfect?—They are not.

4913. Are they very imperfect?—Certainly they are.

4914. Flooring boards should be tongued and grooved?—I think so.

4915. Possibly it would be better if new floors were laid now?—I think so.

4916. And as to the walls?—They are not very bad. I think that they are fairly well kept, but they are perhaps a little too rough. That is, however, made up for by frequent lime-washing.

4917. And the ceilings?—They are in pretty much the same condition as the walls.

4918. How do the floors, walls, and ceilings compare with those of other hospitals?—They are roughly finished, as they are in a good many hospitals. We have a painted dado, which is a protection in some way.

4919. Is that an advantage?—I think so.

4920. Do you know that there is a system of "fallowing" practised here, by which two wards are kept clear and are repainted at the same time?—Yes.

4921. And that that is done to the wards in rotation?—Yes.

4922. Do you approve of that?—Certainly. It is a good sanitary measure. I think that the floors might with advantage share in the repainting process. A little varnish would do them good.

4923. Should anything further be done to improve them, or do you think that the floors should be left as they are?—It seems difficult to get properly-seasoned boards here which will not shrink and leave gaps between them. If the present ones could be re-tongued they might be laid down again so as to make a closely-fitting floor. It would be perhaps better if the floors were soaked with chloride of lime, carbolic acid, or some other disinfectant; then have them varnished and painted.

4924. Now as to the alleged overcrowding, have you paid any attention to that aspect of the case?—I have paid very little attention to the surgical side—that is not in my line—but on the medical side the beds are a little too close.

4925. I find that on the 25th August, 1890, one of the wards contained twelve patients: do you think that a ward is overcrowded with that number of patients?—No. But if all the beds were occupied it would be a little too crowded.

4926. *The Chairman.*] How many beds are there in the ward you are referring to?—Sixteen, I think.

4927. *Mr. White.*] You think that that number is rather many?—It is too many for a medical ward, and I think it is too many for surgical purposes.

4928. You say that it is too many for a medical ward?—It is rather in excess of the number.

4929. What would you say would be a fair number?—I do not know. What is the size of the ward?

4930. *Mr. Solomon.*] It is 50ft. long by 25ft. wide.—The dimensions of floor-space to each patient is not a matter of opinion. Galton, who is our highest authority, gives it as 90 square feet under the bed.

4931. *The Chairman.*] Does he distinguish between medical and surgical wards?—No. He only distinguishes between lying-in hospitals and workhouses, I think. He gives as an example a ward 24ft. in width.

4932. Is that the bed plus 7ft. 6in.?—No; 7ft. 6in., including the bed. About 3ft. 6in. on each side of the bed is given as a typical measurement.

4933. *Mr White.*] Assuming that the measurements range from 2ft. 6in. to 10 ft. 7in., do you think that that would be overcrowding?—I am afraid I cannot do mental arithmetic for you on the spur of the moment.

4934. What number of beds should a ward contain?—It depends on the cubic space.

4935. A ward occupied by fourteen persons, which we have been told would give 1,436 cubic feet per bed?—That would depend on the height of your ward.

49 6. Fifteen feet, we have been told, is the height of the upper wards, and that the size of the ward is: length 50ft. 10½in., width 25ft. 2in., and height 14ft. 11in. Can you state what number of patients can occupy such a ward with safety?—That is a matter of calculation. According to some authorities you want something about 7ft. 6in. between the beds, while according to others 5ft. may be allowed.

4937. *The Chairman.*] Do you mean 5ft. between the beds, or 5ft. including the beds?—Including everything. The rule is 3ft. between bed and bed.

4938. How near are they to one another do you think?—I think under 3ft.

4939. Therefore, you think them too close?—Yes, I think they are rather too close.

4940. Ninety feet, you say, is a typical ward, which would give about 5ft.?—That is the general rule, with 2ft. 6in. added for breadth of each bed.

4941. *Mr. White.*] You have been given beds in the Hospital?—Yes.

4942. What has been your experience in the Hospital?—It has been too short to allow me to say much about it. I have had one or two cases of pneumonia, and some of typhoid fever.

4943. *The Chairman.*] Arisen in the Hospital?—No; outside. Those cases were about as bad as they could be, but recovered remarkably well compared with my experience at Home.

4944. *Mr. White.*] Then your experience at the Hospital has not been very bad?—My cases have done very well; I was satisfied with them. But my experience—eight months—is too short to enable me to judge.

4945. Can you not give us a general opinion as to the cases you have had in the Hospital since you joined the staff?—No.

4946. You think your experience is not sufficiently long to warrant you in expressing an opinion?—Not with any authority.

4947. *Mr. Solomon.*] I wish to call your attention to certain passages at page 15 of Oppert on "Hospitals," and to show you how nearly the Christchurch Hospital approximates to what that authority says is necessary: "As regards passages, they should be of a convenient width (9ft. to 11ft.), and ventilated by end windows, and warmed in winter time, as will be explained in another place. Lifts are used for raising food, medicines, clothes, &c., and their usefulness is beyond doubt. They are raised by turning a handle in smaller buildings; water-power is sometimes used. As regards patients, lifts are necessary in consumption hospitals, but I should not consider them of paramount necessity in general hospitals; they are even not much used where they exist. Linen shoots of earthenware, which may also be used for the dust, are much to be recommended. As they are placed close to the wards, all dirty clothes and linen can be removed easily and at once to a place where they can do no harm. The arrangements of the wards require our earnest attention. Their dimensions and the furniture they should contain must be principally considered. We want large and small wards: the first, because they are more healthy than many small ones, and the cost of their construction is comparatively less; and, moreover, supervision, attendance, and cleaning are more easy. The wards must, however, not be too large; they may by this become uncomfortable to the patients and difficult to superintend. A number of about thirty beds, sometimes a few more, sometimes a few less, is now generally considered as most satisfactory in every respect. The door of such a ward should not be narrow, but of a convenient width, so that you may pass in or out comfortably, and patients can be conveyed through on bran-cards without being in danger of coming into collision with the door-frame. Swing-doors are usually preferred. Necessity for a louvre over the door will be considered in the chapter on ventilation. As regards the windows, they should be opposite, along both sides of the ward, and no ward should be considered to come up to the standard of modern improvement unless this is the case. It is further advisable to construct the windows in such a manner that each bed stands between two windows. It is better that the beds should be separated by and receive light from two windows. It may, however, not always be convenient to have so many windows in the building, and sometimes there are larger and wider windows which allow two beds to be placed between a pair of them. The windows should be high, extending nearly to the ceiling, so that the upper strata of foul air can easily find their way out when the windows are lowered a little. They should reach nearly to the floor, else the patients do not breathe the air unmixed with that of the ward when the lower sash window is raised in mild weather. A distance of 3ft. 6in. or 4ft. will be found convenient. . . . The height of a ward in this country should be about 15ft. Lofty wards generally contain pure air; but if the ceiling is too high the ward loses the dimensions of a dwelling-room. In warm climates the height should be a little more than with us. The width need not be more than 26ft. or 28ft., because we want only two rows of beds. The length should correspond with and not be more than four times the width. As regards the walls, we sometimes find them merely whitewashed, without being plastered. This is the cheapest plan, and perhaps the most healthy. They can be plastered and whitewashed, but as plaster retains contagious matters they must be whitewashed over at least once a year. They may be oil painted, and the paint can be on the bare bricks, or on the plaster with which the walls are coated. In the latter instance, the painting must not be done before the plaster is perfectly dry; this may be supposed to be the case a year after it has been put on. Lastly, the walls can be coated with cement. Sometimes Keen's cement is used, which is of two different qualities; sometimes Parian cement, but this is more expensive than Keen's. As far as I can judge, they understand the use of cement better on the Continent (in Munich and Paris) than they do here, for the walls there are never blotchy. It is questionable if cemented walls are the most healthy ones. Cement can be either white or coloured and polished. These different ways of covering the walls can be combined." These passages were not marked for the purposes of this inquiry, but I used them for a lecture which I delivered four or five years ago.

4948. If you turn to Galton, at page 59, you will find this: "In ordinary hospitals the cubic space is practically dependent on the floor-space, for on this depends the distance of the sick from each other, the facility for moving about the sick, shifting beds, cleanliness, and other points of nursing. If there be a medical school attached to the hospital, the question of area has to be considered with reference to affording the largest amount of accommodation practicable for the teacher and his pupils. A ward with windows improperly placed, so as not to give sufficient light, or where the beds are so placed that the nurse must necessarily obstruct the light in attending to her patients, will require a large floor-space, because the bed-space must be so arranged and of such dimensions as to allow of sufficient light falling on the beds. In well-constructed wards with opposite windows the greatest economy of surface-area can be effected, because the area can be best allotted with reference both to light and to room for work. In a ward 24ft. in width, with a window for every two beds, a 7ft. 6in. bed-space along the walls would probably be sufficient for nursing purposes. This would give 90 square feet per bed, and there should be as little reduction as possible below this amount for average cases of sickness; but this space is too small for fever or lying-in wards. The practice in regard to area differs considerably in different hospitals: in the naval hospitals it is about 78 square feet per bed. In the Herbert Hospital, where there is no medical school, it is 99 square feet per bed. The cubic space which results from this, with wards 14ft. high, is 1,260 cubic feet. In the Royal Victoria Hospital at Netley, where there is a medical school, it is 1,030 square feet. In St. George's Hospital it is about 70 square feet. From this minimum it varies to 138 square feet in Guy's Hospital. In the new Hotel Dieu at Paris the space per bed is from 104 to 110 square feet, and in the new St. Thomas's Hospital it is 112 square feet. This latter area is considered sufficient both for nursing and teaching purposes. In fever hospitals, and in wards for bad surgical cases, where the emanations from patients are considerable, it is found desirable to afford a large floor-space, varying from 150 to 200 superficial feet, or occa-

sionally more, according to the position and shape of the structure, and this entails an enlarged cubic space." Do you agree with that?—I do.

4949. The amount of space in surgical wards here has been reckoned at 78 square feet per patient; do you think that is anything like sufficient?—It is not.

4950. The book that you have quoted from gives the bed-space and the cubic space that should be allowed to patients where there is sufficient ventilation. Is it more or less necessary that the authorities should be careful about these matters in hospitals where ventilation is defective? —More careful where the ventilation is defective. The object of ventilation is to renew the air-supply without inconvenience.

4951. The evils that we have been speaking about would be intensified in the case of a hospital that was imperfectly ventilated?—Certainly.

4952. [List of operations (classified), Exhibit liv., put in.] You have already told us that little or no value is to be placed on statistics?—Yes. I have had a good deal to do with statistics, and I have found them very convenient things. By taking them out of their surroundings you can manipulate them very much as you like, and make your results agree with anything you please.

4953. Are you acquainted with the Christchurch Hospital?—No. I have not seen it.

4954. From the evidence which has been given here, we have been led to believe that its surgical wards are very perfect in the way of ventilation, temperature, &c. Do you think that cases treated in a hospital like that are more likely to be successful than in ours?—Certainly.

4954. Then these things may be a factor in achieving success, as contrasted with the results which we know to have happened in Dunedin?—Yes; but I consider that a carefully-carried-out system of antiseptic treatment may enable operations to be successfully performed even under unfavourable surroundings.

4956. By a somewhat expensive process?—It is, more or less.

4957. But these precautions add greatly to the expense?—It is done by most surgeons. I must confess that I have never used the knife myself except for slight things; therefore I only speak from observation of other men's work.

4958. We have been told that no form of Listerism is absolutely perfect; that while Listerism can do a great deal, it cannot do everything?—There is nothing perfect in this world. But if Listerism is thoroughly carried out by skilful surgeons, aided by competent nurses, everybody must admit that it is capable of achieving such wonders that it practically reduces extra risks almost to a minimum.

4959. So that, notwithstanding the great hygienic defects of this Hospital, and the grave danger to patients from septic poisoning——?—But is that so?

4960. Well, I will put it this way: Assuming that there is a grave danger to the patients from septic poisoning, can Listerism do more than prevent the results of that danger showing to a very large extent; in other words, is it not the fact that occasionally bad effects will show themselves, despite all your precautions?—Yes. But there is not the same liability, if there have been skilful surgeons, aided by good nursing, dressing, &c.

4961. Do you admit that the sanitary condition of the Dunedin Hospital is defective in a good many respects, which are, of course, intensified by the wards being overcrowded?—I can only speak from my own experience, and my cases have done well in the Hospital.

4962. But you have already told us that you have had only eight months' experience in the Hospital?—I have been a good many years in practice, and I have treated poor patients in their homes in Scotland, but have not seen better results than I have in this Hospital. I think many of our patients here are better circumstanced than in their own homes.

4963. Do you think, as a reasonable man, that a Hospital which has so many defects—that has been placed on an improper basis, has surrounding it drains that are filled with stagnant water, that is placed in one of the most unhealthy parts of the town, which has foul air constantly wafted into it, which has insufficient ventilation, and which is overcrowded—can be possibly kept in anything like a healthy condition?—It may be comparatively healthy, but it cannot be perfectly healthy. It is as healthy as the majority of hospitals in the world, and I put it down as an averagely good Hospital.

4964. Do you think it as good a Hospital as it should be under ordinary circumstances?—I repeat that it is as healthy as the majority of hospitals, and I have seen a good many.

4965. Tell us in what respects it is better than the worst hospitals you have seen?—It is as good as old Aberdeen, which has done good service for fifty years or more.

4966. Then, tell me some of the defects which that hospital had which it should not have had? —It had narrow and unventilated corridors, waterclosets in the centre of the building opening into corridors, and such-like.

4967. Were some of the wards more crowded than others?—In the medical wards the beds were too close together, and there was no cross-ventilation.

4968. We have had handed in to us a list of cases treated in the Christchurch Hospital, which is admittedly superior to ours hygienically. They had, during a stated time, 146 operations, with one death, whilst in the Dunedin Hospital, during the same period, we had 123 operations, with twenty-one deaths. On what theory do you explain that difference, seeing that the cases treated were equally serious? Has Dunedin or Christchurch the best means?—Circumstances may have a great deal to do with it.

4969. Which would you lay the greater stress on?—I have already stated it is easy to make statistics prove just what you wish. It is perfectly well known that some hospitals show better results, because moribund cases are not taken in, in order that they shall not appear against the hospital in the statistics; but taking those statistics you have given, without any reservation, I say that the results are too good to be believed. The Christchurch Hospital must be a pattern hospital,

and the results obtained by its surgeons are simply miracles; n fact, I cannot believe the return, it is far too good.

4970. Do you think that our return is a reasonable one—twenty-one deaths out of 123 cases?—Are those all after operation?

4971. Yes. Some of those persons, I know, were sent in in a moribund condition, and I also know that some of the operations were emergency ones. I do not know what the Christchurch list includes.

4972. They were all operations performed within the Hospital.—Unless I know the character of the cases treated it is impossible for me to attempt to analyse your statistics; they are utterly valueless.

4973. Well, I see that in the Christchurch Hospital that list of 146 cases includes tumours?—That depends what a tumour means. Our students do operations of that kind perhaps.

4974. There were eighteen cases of hernia?—That is an operation that is undertaken sometimes to save life; at other times it is quite a simple operation to remove any inconvenience. One wants to know the surroundings of these cases before they can express an opinion.

4975. I observe next eleven cases necrosis, seven amputations of the limb, seven amputations of the thigh, nine of excision of the knee-joint, and nine of lapirotomy?—Those, for the most part, are very simple, except the last.

4976. Well, there are four cases of Tait's?—Yes.

4977. The next are Emmet's?—That is an unnecessary operation, to begin with: it is exceedingly simple.

4978. Six cases of trepanning?—That is not very difficult.

4979. One abdominal section?—You must show the state in which these operations came into the hospital before you can institute a fair comparison.

4980. Not the statistics?—There is no earthly use repeating these questions about statistics; I cannot swallow them wholesale. I want to know every circumstance connected with them. As I have already told you, at present they are absolutely worthless.

4981. *The Chairman.*] Do you approve of the position of the kitchen?—No; it is certainly very bad. I think a kitchen should be attached to every ward.

4982. Do you think it a proper or safe thing to have a boiler immediately below any of the wards?—No, I do not. On very hot days it is exceedingly uncomfortable, and there is always danger of explosion.

4983. In your opinion, are the arrangements for cooking sufficient?—I do not know much about them.

4984. Is the atmosphere of the kitchen a safe place, in your opinion, for the storage of food?—Certainly not. As far as I know, there is no proper place for keeping the food.

4985. I suppose there is a meat-safe?—Yes, I suppose so, down below.

4986. That is outside of the south tower, is it not?—It is quite close to one of the gully-traps.

4987. What have you to say about the children's ward?—I think it is very unfit for the purpose. It is built too low, and is altogether too small and damp. The nurses' accommodation is also very unsatisfactory.

Mr. White: It has been altered.—If so, it has been altered within the last few days. In any case, the position of the children's ward is bad. There are a few other things that might be altered very easily. The linoleum that is put on the floor is very improper material to have in a hospital, especially on the surgical side. It does not seem to me to have been lifted and cleaned for some time, and it is much frayed at the edges, and, in fact, is in a condition to receive germs. Again, the floor of the operating-room is very improperly laid with linoleum, which here also forms a sort of germ-trap. These are small details, improper in themselves, which ought and can be easily remedied.

Dr. Daniel Colquhoun sworn and examined.

4989. *Mr. White.*] What is your title?—Doctor of Medicine of the London University; Member of College of Surgeons, London; and Member of the Royal College of Surgeons, London.

4990. Are you duly registered as a medical practitioner in New Zealand?—I am.

4991. Are you a lecturer at the Otago University?—Yes.

4992. In connection with the Medical School?—Yes. I am Lecturer on the Principles and Practice of Medicine. My appointment dates from 1884. I began lecturing in 1885.

4993. How long have you been practicing in Dunedin?—Since June, 1884—six years ago.

4994. You are a member of the Honorary Medical Staff of the Dunedin Hospital?—I was until last year.

4995. You are not now on the staff?—No.

4996. Will you give us the dates of your connection with the staff?—From about July, 1884, to December, 1889.

4997. You have cases in the Dunedin Hospital, have you not?—I have beds for the purpose of university teaching; but I am not a member of the staff.

4998. How many beds have you?—I think I have a dozen.

4999. In the medical wards?—Yes.

5000. I have no doubt you have read in the newspapers what has been going on about the Hospital?—I have.

5001. I want you to give the Commissioners your opinion as to the suitability of the Hospital—that is, as to the suitability of the building—the walls, floors, and so on. Take the structure of the building itself first: what is your opinion as to the structural suitability or otherwise of the building for an hospital?—I do not think it is a suitable building.

5002. In what respect is it unsuitable?—I think it is unsuitable in regard to its capacity for ventilation. That, I think, is the main evil of the building.

5003. *The Chairman.*] I suppose when you say that, you do not mean the size of the structure, but the capacity?—That is so.

5004. *Mr. White.*] You say it is not properly ventilated?—Yes; I say, as a rule, it is not properly ventilated. I think it is a building in which, with the number of patients generally kept in it, it is impossible to get thoroughly ventilated—that ventilation which we ought to have in a good hospital.

5005. *The Chairman.*] You say it is on account of the structural defects in the building that it is impossible to ventilate the building properly?—That is my opinion.

5006. In what way do you think the ventilation is defective?—The ventilation is by means of the windows, and there is no automatic system of ventilation, as it were, so that there is always a tendency in the air of the wards to become close and stuffy. That is not peculiar to this Hospital. I have noticed it in a great many hospitals. When medical men go into the wards the wards are being looked after, and the windows are kept open, so that the place is generally fresh and clean; but as soon as they leave the patients themselves begin to grumble about the draughts, and the windows are then closed. You most notice the defect in the ventilation between midnight and early in the morning.

5007. *Mr. White.*] You have been in the Hospital late at night, and early in the morning, have you?—Yes, as early as 7 or 8 o'clock.

5008. And what did you find there?—I have frequently had occasion to complain of the closeness of the wards. Long before this discussion arose I said that an hour's work in the morning in one of the wards was as hard to me as the whole of my work during the rest of the day. I have spoken about this matter to the staff. It was a matter of very strong comment among them at various times during the last three or four years.

5009. Did the staff address any communication to the Trustees, or was any resolution passed by them on the subject?—I think these matters were brought under the notice of the Trustees in 1887; but I am not sure about the date. I think we had a conference with them.

5010. *The Chairman.*] Is there any record of that conference?—I think there ought to be.

5011. *Mr. White.*] Were you not secretary of the medical staff at that time?—I was, and I see from this book (minutes of the staff meetings) that the Trustees had a conference with the staff on the 17th May, 1887.

5012. *The Chairman.*] That conference took place then?—Yes; we addressed a letter to the Trustees, and in accordance with it we had a conference with them. I think we drew up a report, and the want of ventilation was among the reasons that were urged for the various changes that were recommended. One of the chief reasons for our moving was that we wished to have better nursing. We thought we should have a well-trained staff of nurses, without which the most perfect system of automatic-ventilation would not be of much use, as it is a matter which must be left practically in the hands of the nurses. That was one of our strong reasons in trying to get a more systematic mode of ventilation adopted.

5013. *Mr. White.*] By the way, as regards the suggestions from the staff generally, do you know of any suggestion made by the staff, until last year's wide request, that has ever been refused, so far as you know?—No; I think that the suggestions of the staff, on the whole, have been very fairly dealt with by the Trustees. They have not agreed to everything, but I think there has been a constant tendency on the part of the Trustees to grant what has been recommended by the staff.

4014. The first thing you asked for was a new operating-room, was it not?—Yes. If I remember rightly, the whole of the staff met the whole of the Trustees. The arrangements made by the staff were that the nine members of the staff appointed three committees from their number, three on each committee. Three were appointed to look after the operating-theatre. Another three of the staff were appointed to look after the nursing, and three others were to look after the matter of special wards; so that each matter would be carefully considered, and so that we should avoid, as far as possible, any clashing in views. We had a very friendly conference with the Trustees.

5015. The matter was very fully discussed with the Trustees, was it not?—Yes. I am speaking only from memory, but my impression is that they agreed to the operating-theatre, and that the nursing system would be allowed as soon as they got funds to build a nurses' home. I have no recollection of what was done in the matter of special wards for special cases. There was no clashing of views, and no unpleasantness at the meeting.

5016. Did not the Trustees give the staff the option of choosing any one of these reforms they thought the most urgent?—That has been stated, but it is not my recollection.

5017. Do you know why this operating-theatre was fixed upon as being the first reform to be gone on with?—I have always understood it to be because the Trustees had money for it, but not for the more expensive reforms. I am of opinion that most of the members of the medical staff thought that the nurses' home was the most urgently needed of the reforms required.

5018. I see by the minute-book that the proposed resolutions were submitted to the "committee"?—By that was probably meant the Trustees; I was always rather vague about their style.

5019. *The Chairman.*] I understand you to say that the nursing included ventilation; was that your opinion only, or was it the opinion of the whole of the medical staff who were at the meeting referred to?—I think we took the subject as a whole. We thought that by getting these reforms carried we should be doing a great deal to put the Hospital on a good basis, both hygienically and scientifically.

5020. *Mr. White.*] You state that the question of ventilation was to be dealt with by means of improved nursing?—I thought, and I think most of us thought so also, that that was one important step towards improving the hygienic condition of the Hospital.

5021. Did the doctors who were appointed to consider the nursing question also hold the

opinion that the nursing included ventilation?—So far as my recollection goes there was no difference of opinion at all amongst members of the staff on that point.

5022. This record shows, does it not, that the different matters were allotted to the different members of the staff to bring them before the Trustees at that conference?—Yes.

5023. And that was done?—Yes. As I said before, I do not remember what was done in the matter of special wards for special cases.

5024. Who were to take charge of it?—Dr. Batchelor and Dr. Lindo Ferguson were to take charge of that particular matter. [Here witness read a list of recommendations by the staff, and added:] These matters were taken in detail. The lying-in ward was abolished and the children's ward substituted, and the room downstairs was altered and made a padded room.

5025. In reference to the padded room, was that looked on then as being fit for the purpose?—Certainly, it was better than it was before, but for all that it is an inhuman kind of place.

5026. *The Chairman.*] The children's ward was provided; is it satisfactory?—I do not think so. It is better than nothing at all, but it is a mere shed.

5027. *Mr. White.*] Has it not been admitted that the operating-theatre was a very great improvement?—Yes, and I still think it is a very great improvement indeed.

5028. Are you aware that the question of the operating-theatre was discussed by the staff, who agreed to place it first among the improvements?—I am not clear on that matter. I know there are several members of the staff, myself included, who would have had the nursing before the operating-theatre.

5029. I will just read what Dr. Batchelor says on that subject eighteen months ago, just shortly after the conference: "What did the Trustees do? They then said to us, we admit that the reforms are necessary: point out what you consider the most essential and important reform; and we did what I now think showed great want of tact: we suggested the operating-room as the most important reform."—However, that is not my recollection; but I cannot remember what was actually said. I am quite sure of this: that if the question had been put at a meeting of the staff at which I was present, as to which of the reforms we should take first, I am clear that I should have voted for the nursing being put forward as the most urgent reform required.

5030. The diseases of women were not discussed?—That is so, but I have no clear recollection about it. I think it was more in reference to the cases that wanted separating from the other cases for their own safety as well as for that of others.

5031. You have already referred to abdominal cases, and what about the gynecological cases?—It may be included or involved in the operations for opening the abdomen. Of course there are more of such cases among women than among men.

5032. You thought that the question of ventilation would be covered by the question of nursing?—I thought at the time that it was included in that, though these reforms were not to be final. None of us thought that the Hospital would be perfect, if even all our suggestions were carried out.

5033. Then as to the walls, floors, and ceilings. Take the walls first: what is your opinion about them?—I do not know that there is much to complain about in them. I do not know much about the walls.

5034. And the floors?—They have certain disadvantages. I am bound to say, however, that I consider the danger has been very much minimised by the very excellent plan which has been adopted of clearing-out the wards in rotation. No ward, I understand, is allowed to contain patients for a long time, and there is always one empty; and the patients from the various wards are shifted into it in turns, while their own wards are being renovated. This is a special excellence of the Dunedin Hospital, which deserves to be called attention to.

5035. *The Chairman.*] Then you approve of the fallowing plan?—Yes, I do.

5036. And you think it minimises the danger?—I do not mean to say it absolutely destroys the possibility of danger.

5037. *Mr. White.*] And as to the ceilings?—I cannot say that I have paid very much attention to them.

5038. Are you including in your remarks both the construction of the medical and surgical wards?—Yes; I think the present arrangement minimises it, and I should be sorry to see it omitted.

5039. And as to the waterclosets?—I think they are very bady arranged.

5040. *The Chairman.*] In your remarks about the closets you include the lavatories and baths?—Yes.

5041. *Mr. White.*] Have you ever smelt anything offensive from the closets when visiting them occasionally—or have you visited them often?—I have visited them often.

5042. Have you noticed anything objectionable?—I have noticed a bad smell. I think it is impossible it should not exist in the present situation of the closets. In one of the tower wards I have noticed a very bad smell indeed.

5043. That is, in the lock hospital?—Yes. The arrangement there is partitioned off.

5044. It is different to the other wards?—Yes; I complained of it some years ago.

5045. In fact, the closet is in the ward, is it not?—It is practically in the ward; it is on the opposite side.

5046. *The Chairman.*] In using the closets in these wards, then, special care must be taken with them?—Yes.

5047. *Mr. White.*] You were a member of the staff when this report was sent in to the Trustees. It is known as Dr. Lindo Ferguson's report?—Yes.

5048. Most of the witnesses have said that they know nothing about it. Is that the case with you?—I was an active participant in it.

5049. You take exception here to the square space, the cubic space, and the capacity of the

wards?—Yes. A reduction of beds in the wards from seventeen to fifteen would be 1,166ft., and to fourteen, 1,243ft. per patient.

5050. Do you know if the number of beds was reduced then?—I asked not very long ago, and I was told that it was reduced by one in one of the wards, but I was not in the house when it was done.

5051. *The Chairman.*] I understand you acknowledge that report, and admit you were a party to it?—Yes.

5052. And you held to all the opinions expressed in the report?—Yes.

5053. And you still hold them?—I do.

5054. *Mr. White.*] Dr. Copland has said that the beds downstairs were reduced from seventeen to fifteen, and upstairs from sixteen to fourteen?—I am not aware of it.

5055. Do you know if the "Unitas" closets have been improved?—I do not.

5056. I notice that the closets there suggested are Unitas ones. Do you know whether that has been done?—I do not know.

5057. *The Chairman.*] Have these closets been got since then?—I cannot say.

Mr. White: As a matter of fact, many of them were in use in the Hospital at the time that that report was written.

5058. Are these closets an improvement or not?—There certainly have been improvements made in some respects. Double doors have been put up.

Mr. Solomon: I think you are wrong in that respect. You will find that in the report.

Witness: At all events, our main recommendation that the closets should be built out has not been given effect to.

5059. *Mr. White.*] With regard to the closets, are you of opinion that everything has been done to make them sanitary?

The Chairman: The better plan would be to ask Dr. Colquhoun if he wishes to make any remark on the report.

Witness: The bed-space per patient is, I think, an important point. I do not think that the reduction we recommended has been made. I was in the wards yesterday, and saw what I considered to be a very narrow limit between some of the beds in the female wards.

5060. *Mr. White.*] You asked the space to be increased to 100ft. by reducing the number of beds, did you not?—If that has been done, then I should say that there should be a further reduction. I am especially speaking of No. 7 ward, where the beds are far too close together.

5061. You asked for the space to be increased to 100ft. by reducing the number of beds?—If that has been done I should say there should be still further reductions. I am speaking now principally of No. 7 ward, where the beds are far too close together.

5062. What is the result of the beds being too close together?—I think it is very unpleasant for the patient. It is likely to be distinctly harmful; and, further, if a patient has an offensive discharge, it is both unpleasant and a source of risk.

5063. Do you know the distance the beds are apart from each other in the wards?—I only know that somebody said there were 18in. between them in the wards, but I did not measure them myself. When I was in there yesterday I only went through the female wards, and I certainly think the distance between them was wider than that.

5064. *The Chairman.*] Do you think it would be more than 2ft. between them?—I am certainly of opinion it is not more than that. As I said, I did not measure.

5065. *Mr. White.*] You have been accustomed to see other hospitals?—Yes, I have seen a good many.

5066. And you can tell by the eye whether the beds are too close or not?—Yes.

5067. I believe they have been measured, and found to be from 3ft. 2in. to 3ft. 8in.?—I would not think that would be sufficient. That is coming nearer to what my impression of the distance was.

5068. However, you think they are too close?—Yes, they are certainly still too close. In some of the wards it is worse than it is in others.

5069. *The Chairman.*] Do you think that the plan of setting aside empty wards for a time offers sufficient advantages to counterbalance the necessary overcrowding which must take place in other wards in consequence?—If I were to have a choice of two evils I should certainly prefer to keep the one ward empty.

5070. That is, one ward for males and one for females?—You do not need that at all, because there is no reason why males should have a separate ward.

5071. Would you still be of opinion that fallow wards would be needed if you had wards as they have in the Christchurch Hospital, constructed on modern methods?—Yes. I think it ought still to be done, because, no matter how perfect your building is, you cannot too carefully guard against septic disease.

5073. *Mr. White.*] What do you think the results in the Dunedin Hospital generally have been?—I think the results have been fairly good, on the whole.

5074. *The Chairman.*] When you say "fairly good" do you mean the results of your own practice in the Hospital have been fairly good?—Yes.

5075. *Mr. White.*] Can you compare the results with the results of other places?—If you want a comparison made with the London hospitals, I should certainly expect to find better results out here. I have seen much better results in Dunedin.

5076. *The Chairman.*] How do you compare the results of your private practice?—They compare favourably. In the cases of poor people with serious diseases they run a better chance in the Hospital than they do in their homes; and in the case of well-to-do people, who can afford comforts which poor people do not get—good attendance, good nursing—I should say that the home treatment gives better results.

5077. Have you prepared any statistics on the subject of deaths in hospitals?—Yes; I have prepared some statistics showing the deaths in this Hospital compared with other large hospitals in New Zealand.

5078. Do they relate to medical cases?—To all cases, both medical and surgical.

5079. Where were they compiled from?—From the returns of the Inspector-General from 1886 to 1889. I had only these four years available.

5080. Do you mean the reports of the Inspector-General of Hospitals, or the Registrar-General?—I have taken the hospital returns.

5081. Have you perfect confidence in the way that the statistics are compiled, or any reason not to be satisfied with the way they are filled in?—I think they are as good as any statistics are, and are apparently reliable.

5082. We have been told that some cases appear several times over, and under different diseases?—If that occurs, it does not go so far as to vitiate the returns. For the four years that I have been dealing with, I find that the average death-rate for all the hospitals in the colony was—1886, 8·5 per cent.; 1887, 8·5 per cent.; 1888, 8·23 per cent.; 1889, 8·01 per cent. For the same four years the average death-rate in the hospitals of the four large centres was—Auckland, 9·6 per cent.; Christchurch, 8·38 per cent.; Wellington, 7·87 per cent.; Dunedin, 9·44 per cent.

5083. That is the death-rate for all cases?—Yes. I next endeavoured to ascertain in what class the greatest number of deaths occurred in one centre.

5084. In any one hospital?—Yes. I found that in the Dunedin Hospital there was a very large death-rate under the heading of Class IV.—constitutional diseases—and that in that class the deaths were mainly due to phthisis and cancer. I have worked the percentages out, excluding Class IV.

5085. I should like to have the percentages of all the groups, from 1 to 8 inclusive. [Witness read and handed in list.] You withdraw group 4?—Yes. That is the constitutional diseases group, and includes phthisis. I find that for the four years already named the average deaths were: Dunedin, 7·47 per cent.; Christchurch, 7·21 per cent.; Wellington, 6·98 per cent.; Auckland, 7·63 per cent.

5086. Did you deal with the question of venereal diseases?—I did not. I may say that I spent a good deal of time in trying to come to a conclusion on the matter, and that there were a great many puzzling things about them. For instance, in 1887—I am speaking from memory now—I think we had something like twenty-one deaths from cancer in Dunedin, and that of these twenty-one cases twelve died in the Hospital. Wellington had twenty deaths, against twenty-one in Dunedin, but in Wellington only three died in the hospital, showing that the incidence of cancer was greater in the population there, while here the Hospital has evidently been made use of by the people for cancer cases.

5087. What was the proportion of scarlet fever cases?—That is the class zymotic diseases—No. 1—which includes scarlet fever. The deaths from zymotic diseases are far higher in Auckland. The figures are: Auckland, 19·05 per cent.; Dunedin, 4·05 per cent.

5088. I suppose, if you take individual years, the ratio would be found to be heavier?—In 1886, Wellington had a death-rate of 10 per cent.; Auckland of 10·5 per cent.; and Dunedin of 9·8 per cent.; while that for the whole colony averaged 8·5 per cent.

5089. What is the general result of your statistical investigation? Is it to show that the analysis gives no reliable results, or does it give a decided opinion one way or the other?—The decided result, to my mind, is to show that the Dunedin Hospital is not in an appreciably bad condition, and that the results obtained in the Dunedin Hospital are as good as can be expected under ordinary circumstances.

5090. You say that the Dunedin Hospital results are not bad?—I do.

5091. Not worse than in other hospitals, you mean?—They are not worse than the others in proportion. I do not know if Mulhall's statistics have been referred to, but I may allude to what he says in regard to the hospitals of Ireland. He says that the death-rate in Irish hospitals is 6 per cent.; in England, 8 to 8½ per cent.; and in Scotland, 9½ per cent. Here, again, local habits must be considered in regard to these statistics. As a matter of fact the Irish withdraw their friends from hospitals as soon as they find that they are going to die. There is a very strong feeling among the Irish in favour of having their friends at home to die.

5092. *Mr. White.*] But Mulhall points that out?—I think not; he simply gives the figures. I should like to mention another thing which makes our figures more unsatisfactory than the Home ones. In all the London hospitals there is a strict rule against admitting cancer or phthisis cases, or incurable cases generally, and there is also in the majority of the London hospitals what is known as the two months' rule, which is pretty strictly adhered to.

5093. There is a two months' rule in the Dunedin Hospital?—Which is not adhered to. As I was saying, the hospitals at Home will not take in incurable cases nor cases of phthisis. Of late years, within the last twenty or thirty years, special institutions have been established simply to meet phthisis cases. A great many of the cases which come into the Dunedin Hospital would go to the poorhouses and infirmaries at Home. So that, taking all these things into consideration, I have come to the conclusion that our statistics compare very favourably with those of the Home hospitals. All over the colony this class of cases has necessarily to go into a general hospital, because we have practically no poorhouse or special infirmary.

5094. There is another element, is there not, which you might have taken into account—the chronic cases, which are not taken now into the Dunedin Hospital but are sent to the Benevolent Institution?

5095. *The Chairman.*] Since when was that?—Since 1886, when the Trustees took the Hospital in hand.

5096. That would be before the period to which your statistics apply, would it not?—1886

would probably be the last year in which that condition of things existed in the Dunedin Hospital. I know that there was a large number of chronic cases.

5097. *Mr. White.*] I may tell you that the Trustees immediately got rid of twelve or thirteen chronics?—Yes. I knew there was a large number of them.

5098. *The Chairman.*] Are you aware whether similar action was taken in the other hospitals?—Yes, I believe so.

5099. Do you know in what year it was done?—I do not. There is another point which I might call attention to, and that is in regard to our lower death-rate. Although Otago has a lower death-rate than many other parts of New Zealand, and although the colony has a lower death-rate than England, you must remember that the higher death-rate at Home tells mainly on children under twelve months—in other words, that the high death-rate in the Old Country expresses itself mainly in a high infant mortality.

5100. You are speaking now of the difference of infant life here and at Home?—Yes; there is a large difference. But the difference between our adult population's death-rate and that of the adult population at Home is not so great as would appear by looking at the general statistics. Therefore, taking all things into consideration, I consider that our Dunedin and our New Zealand statistics are distinctly good.

5101. *Mr. White.*] We have been told to take the number of persons who enter a hospital, the number who die, and the number who go out cured. Is that the correct way of ascertaining a death-rate?—No; there are many things, as I have just indicated, that must be taken into consideration. I have merely dipped into the subject, but it has shown me what a very complicated business it is to arrive at the truth about statistics. You can only arrive at the truth about statistics by subjecting them to the most careful analysis.

5102. Then you are hardly prepared to go the length of Mr. Solomon, who, in his opening address, said: "These figures do not seem very terrible, but when we consider that the hospitals at Wellington and Christchurch are new, while ours is admittedly old and defective, and, further, that an average of about one thousand patients per annum are treated, an unpleasant conviction must be forced on the minds of everyone that there is, to say the least, a possibility that fifty or sixty precious lives have been lost in our Hospital during the past two years which, under more favourable conditions, might have been saved"?—I do not agree with that.

5103. May that be said to be an exaggeration?—According to my judgment it is a misreading of the statistics.

5104. There is one matter which I should like to draw your attention to, and it is in regard to the Medical School. Dr. DeRenzi said, in answer to a question by Mr. Solomon, that the students of our Medical School were not likely to prove a credit to themselves or to our Hospital, which was not a proper place for the teaching of medicine. I do not know that he said it in these words, but it was to that effect: at all events he had formed a very sweeping opinion on the subject; in fact, according to him, there is not a redeeming feature in the institution. I should like you to have an opportunity of answering that. Do you think that that is fair comment to make on the Hospital?

Mr. Solomon: I do not think it is fair to ask the witness a question like that, without giving something like what Dr. DeRenzi stated. What he did say was: "Under the circumstances he did not think that the Medical School, with its present surroundings, was a proper place in which to teach the practice of medicine. He did not think that students turned out here would be likely to prove a credit to themselves or to their school. He thought that special care should be taken in the details of a hospital, when it had attached to it a medical school."

Witness: I should like to express an opinion on that. In the first place I should like to say that I understand that a medical school requires that the hospital to which it is attached shall be well appointed; and I do not know of anything being required here that would not be in existence in any well-appointed hospital. I am perfectly prepared to state that as a very definite opinion. In the next place, I wish to state equally emphatically that the Dunedin Hospital is better appointed and better fitted up, hygienically and in every way, for the teaching of medicine than any hospital in England or Scotland was thirty years ago, where some of the best surgical and medical work in the world has been done. In justice to our graduates I should like to say this: that the men who have gone from our Medical School to the degree of M.D. in the New Zealand University are, in my opinion, better prepared for the practice of their profession than the average student who leaves the London or Scotch school.

5105. What is your reason for saying that?—The reason, in my opinion, is that they have more culture and education than the average London student gets, and they have more practical experience than the average Edinburgh student gets.

5106. *The Chairman.*] You mean that, though the clinical teaching is less, the student gains more from the culture?—The course of lectures is very much the same, but he gains more from the culture; in fact, he gets a wider education, because, in my opinion, the largest part of a man's education now-a-days comes from books. There is less clinical teaching here, but the students in large cities at Home have nothing like the dressing and handling they get here. It is impossible for them to get it in the large centres at Home.

5107. During what proportion of their time in England do the students act as dressers?—Three months as clerks and dressers.

5108. What is it here?—I should say about twelve months.

5109. Do all the students at Home, before they complete their education, perform the duties of clinical clerks?—Not as a rule. Formerly a man could go through a course without clinical dressing, but the rule now is three months in some hospitals and six months in others before he can get his certificate. They make it compulsory at Home. While I say this, I should be glad to see all our students go Home, because there they would obtain a larger area of practice. But I think

it is a gross injustice to the students of our Medical School to allow them to be spoken of, as has been done here, without explaining the true state of the facts. I think that the statement to which you have called my attention is an ignorant one and wholly unjustifiable.

5110. Why did you limit the time to thirty years ago when you were comparing the condition of the Dunedin Hospital with hospitals at Home?—I merely took that as the period before Listerism. I might have chosen a lesser time and have said within the last fifteen years.

5111. What hospital did you attend as a student?—The Charing Cross Hospital, London.

5112. In what years?—From 1873 to 1883. I was there as student, teacher, and member of staff.

5113. Were you in charge of a surgical ward there?—I had a good deal of work to do as surgical registrar from 1877 to 1879.

5114. What proportion of major operations did you find to heal by first intention?—A very small number.

5115. I suppose it was quite a common thing to lose cases in your student days?—It was a usual thing before the advent of Listerism, but the advance during the last fifteen years has been simply immense.

5116. Can it be safely said that the cases which do not heal now are just as rare as they were common then?—It still depends on the nature of the case.

5117. But I mean on the average?—At all events, they heal very much better than they used to do.

5118. I still fail to understand your reference to the condition of Home hospitals thirty years ago?—I spoke merely of that as a date before Listerism. What I wanted to bring out was that some of the best work in the world was done in hospitals which were then inferior to the Dunedin Hospital now.

5119. Do you mean the best work in medical teaching?—Not only that, but in the healing art generally.

5120. *Mr. Solomon.*] That was before Listerism?—Yes. There were great teachers before the days of Lister.

5121. *Mr. White.*] Does the student get more personal attention here from the teacher than he would at Home?—The average student does.

5122. *The Chairman.*] You have got tweve months' clinical instruction here as against how much at Home?—I do not know. What is called clinical instruction in England includes lectures, which a man may or may not attend.

5123. *Mr. White.*] I want to ask you a few questions about Mrs. S——'s case. She was operated on for an Emmet, and her chart shows that on the night prior to the operation she had a temperature of 101°, and that on the morning of the operation it was 100°. Does that suggest to your mind any reason why the operation should not have been performed?—I should be very sorry to give an opinion on two temperatures. I should like to see the charts.

5124. *Mr. Solomon.*] We distinctly deny there was a rise before the operation?—I should want to know, before giving an opinion, what explanation could be offered as to that rise of temperature.

5125. *Mr. White.*] You may assume, for the purposes of my question, that Dr. Batchelor knew nothing about it?—Well, I should say, from the mere fact of the temperature chart, that there was some inflammatory mischief about the patient, but that her chart, up to the date of the operation, was not a septic one. That rise, however, indicates the existence of some mischief about her body.

5126. *The Chairman.*] From what?—The day after admission she had a temperature of 99½°, but a woman who is in good health has no right to have such a temperature. That is a sub-febrile state, and one wants some explanation of it. There ought, in fact, to be an explanation forthcoming, but the chart subsequently becomes a septic one.

5127. When did it become septic?—After the operation on the 15th. It became obviously septic on the 19th.

5128. *Mr. White.*] How long would it take for septic symptoms to arise supposing the surface of the wound to be poisoned?—I should think within twenty-four hours that rigours would set in and the temperature go up. I may say this chart is not a satisfactory one. I should think a more reliable description would be found in the case-book.

The Chairman: You had better read the original from the case-book. [Book handed to witness.]

5129. *Mr. White.*] Having read that, and assuming the statement there made is correct—that this woman had a sticky yellowish discharge—do you think it is fair to state that this woman's death was entirely due to unhealthy hospital influences; I will read you what Dr. Batchelor says: "I most positively assert that I consider Mrs. S——'s death entirely due to unhealthy hospital influences, and I am convinced that had this unfortunate patient been operated on in a healthy ward with healthy surroundings she would now be alive and well"?—I should think that that statement is not proveable.

5130. Another case in which there is a charge of septic poisoning is that of S. M——. You probably have read a report of that case in the *New Zealand Medical Journal.* Do you know the facts of that case?—Yes, I remember it.

5131. Supposing there had been nothing mentioned about a yellow sticky discharge, would you necessarily conclude there had been septic trouble?—Decidedly not. If we are to accept the theory of Emmet it implies that a certain amount of irritation had been set up in the uterus, and the operation is carried out for the express purpose of doing away with that condition. Emmet's theory is that the laceration of the cervix is the cause of the uterine trouble.

5132. Does a uterine discharge necessarily create septic poisoning?—Not at all. If I may give an opinion upon the point I would say that that the question lies, to my mind, between tubal mischief and—

5133. From the facts you have just read, do you come to the same conclusion as Dr. Batchelor, that the trouble arose from septic poisoning, or is it your opinion that septic poisoning took place from some external cause?—I do not think that that theory is proveable. So far as my knowledge goes, and from what I have heard after making inquiries, the conclusion I have come to is that it may have been.

5134. What conclusion would you have come to if you had had read over to you the description of the symptoms before operating?—I should have said the surgeon was justified in doing the operation, taking, of course, every reasonable precaution that human foresight can take in a matter of this kind.

5135. Then, you think he was justified in performing the operation?—Yes, perfectly justified.

5136. Have you formed any conclusion as to how the case miscarried?—I do not think there is any evidence to prove definitely one way or the other. I might hold an opinion strongly on the one side, but I would not quarrel with any one who held a strong opinion on the other side. I think the facts of this case are susceptible to at least three or four different explanations.

5137. Would you come to the same conclusion that Dr. Batchelor has expressed in his letter to the Trustees?—Decidedly not. I think that is a too definite opinion on one side, and, in my opinion, I do not think it is possible to form an opinion definitely on either one side or the other.

5138. At all events, we may take it you would not have expressed such a definite opinion as Dr. Batchelor has done in his letter to the Trustees?—I should not. There may be some latent mischief in the tubes, but it was not detectable in ordinary examination.

5139. Dr. Batchelor has expressed the opinion, founded on inference prior to the *post-mortem* examination, that the mischief extended into the fallopian tubes between the time of the operation and the time of the setting-up of any of the septic symptoms indicated in the chart. What is your opinion as to that?—I think it is purely a matter of inference.

5140. You have had no experience yourself, have you, or is it that your knowledge is restricted to what the authorities say?—That is all.

5141. Is there anything incorrect in the assumption that the septic matter could travel along the mucous surface?—I do not suppose that septic matter would travel in that particular way into the fallopian tubes. I think it would probably be by absorption. In certain cases septic matter may go through the uterine cavity. If you exclude all external causes, then, and then only, I should think, it would be likely.

5142. We will leave the discharge out of consideration. What other source of septic poisoning would be likely to occur in a wound that was carefully dressed and had had proper antiseptic treatment? Was it likely that the wound would become infected?—I do not think you can rely absolutely on antiseptics; no antiseptic has yet been found that is a perfect precaution. Even Lister himself has been trying all sorts of substances, but his experiments have not satisfied him that he has obtained an antiseptic which would be wholly satisfactory.

5143. Whether the condition would be normal or abnormal, you say that the facts before you are not sufficient to warrant you in giving an opinion?—They are not.

5144. But it might be lurking in the system, or in the parts at the time?—Yes.

5145. Do you think that this case is fairly chargeable against the Hospital?—No. I agree with what Dr. Batchelor says here: "The more I see of practice the more chary do I become of undertaking any operative procedures in a woman during her puerpery." This woman was confined on the 22nd June and operated on on the 29th July, about five or six weeks after her puerpery.

5146. *The Chairman.*] Do you consider that that would be too soon?—I certainly think that five weeks was too soon. If I were called in in a case of a similar nature, especially with the experience of this case before me, I should not operate.

5147. *Mr. White.*] Then, you would not blame that case against the Dunedin Hospital?—I should feel inclined to say, after the manner of Scotch verdicts, "Not proven." I think that it would be utterly unjust to our Hospital to say that this doubtful case was one of hospital septicæmia, and I do not think that it would be unjust to the surgeon to say that it was a doubtful case.

5148. You had a case of erysipelas, in the Hospital?—Yes, but it was a very doubtful case.

5149. Do you mean it was doubtful whether he had erysipelas?—Yes. I will give you the circumstances of that case. He was a man sent in to me suffering from Bright's disease. He was in the last stages of it, and as soon as I saw him I gave instructions to the warder to tell Dr. Copland that I thought the man's friends ought to be sent for. His wife came in from the country. The man went steadily to the bad, getting worse and worse. His wife asked me if she could go home for a day or two on matters of business, but I told her she ought not to leave him as he might die at any time. That was a few days before his death. An urtecarian rash appeared about his face, and I pointed out to some of the students who were with me at the time that this was uræmia and not erysipelas, that in uræmic cases the skin was greatly affected as the result of uræmia, and it was therefore not an unlikely thing that an eruption should appear in the later stage of it. I was very much surprised indeed to find this case quoted as one of erysipelas.

Mr. Solomon: It never has been by us.

Witness: If I remember rightly, in the examination of one of your witnesses you mentioned this as a case of erysipelas that happened within the Hospital, and your witness gave us to understand that the patient died, the inference being that it was a case of erysipelas that had arisen in the Hospital.

Mr. White: It was distinctly stated so by you.

Mr. Solomon: I never heard so before.

Witness: At all events, it is one of the cases that have been put down as deaths from erysipelas in the Hospital, and it has no business to be there.

Mr. Solomon: So far as we are concerned, it is nothing of the sort, and I never heard of it until Dr. Copland put it in as part of his list.

The Chairman: It was entered in the house surgeon's list as one of the ten cases that occurred in the Hospital, but he has explained it away himself.

Witness: That man certainly did not die of erysipelas; it was not a case of surgical erysipelas. I am doubtful whether it can be classed among those cases at all.

5150. *Mr. White.*] I understand you wrote on the subject of an outbreak of erysipelas?—Yes, I did write on the subject. Do you wish me to read what I said. It appeared in the April (1890) number of the *Medical Journal*, before any question of this inquiry arose. You will find it at page 186. That was merely in reference to what may be called an influenza epidemic. Our sanitary condition at that time was not good, owing to there being such a large number of strangers here, and to there having been a long spell of dry weather.

5151. *The Chairman.*] Was the outbreak of erysipelas common in the town?—Well, I have had cases since the beginning of the year, three or four of the cases occurring close together. I believe that at the period to which we refer there was more erysipelas than is usual in the town.

5152. Were they close to one another?—They were pretty near.

5153. Were they in the same month?—No; I should say they dated from January to April.

5154. They were simply in the same locality?—They were in Dunedin, but not necessarily in the same street.

5155. *Mr. White.*] What did you mean just now when you said they were near one another?—In point of time, to such an extent as to give me an impression there was more septic trouble about than usual.

5156. And what about them in point of distribution?—Well, they were in different parts of Dunedin, but one was in Mornington.

5157. Is it at all likely or unlikely that such cases should arise out of the Hospital?—One must distinguish between medical and surgical erysipelas. What we recognise as medical erysipelas is a thing which occurs in men and women who are predisposed to it by family inheritance or by previous attacks, and in every case I have been able to trace that form of erysipelas. Surgical erysipelas is an intensely infectious disease, and is due to bad hygeinic conditions.

5158. Do you know any hospital in which erysipelas has not arisen from time to time?—My experience of the Dunedin Hospital is that we may have an attack of septicæmia from time to time, but as soon as antiseptic precautions are taken they become much rarer. Individual cases of septic disease occurs in the Hospital, but anything like a general outbreak of septic disease is very rare indeed. There has never been such a thing in the Dunedin Hospital.

5159. There is a case that has been in the Hospital for over three months: would you say that would indicate an insanitary state of the building?—I should say all cases I have seen in Dunedin may be explained by the condition of the patients themselves. I think Dunedin Hospital certainly had nothing like a serious attack of septicæmia.

5160. Do you think it is impossible under the present system of Listerism that there should be such a serious attack of septicæmia, or that Listerism will prevent it?—I think that our knowledge now teaches us how to avoid it.

5161. Our Hospital might be in an insanitary state, and the absence of Listerism be quite sufficient to cause serious trouble?—Yes; without careful attention, or with carelessness on the part of the officers of the Hospital, you would certainly have an outbreak of septicæmia.

5162. *Mr. Solomon.*] You have told us that the draft report, which states in detail that an insufficient quantity of air is introduced into the Hospital, that the beds are necessarily too close for the health and comfort of the patients, and that the floors of the Hospital are made so as to be specially adapted to the presence of germs——?—Did we say much about the floors?

5163. I am quoting from the report, and it says these things are necessarily a source of danger to the health and comfort of the patients. Now, we have been told of all these various things, and we also know that the Hospital has existed for about twenty-five years. Do you think that, that being the case, the wards in the Hospital at the present time can be in a fairly healthy condition?—I have already stated my opinion, which is that the Hospital is not a perfect hospital, but I think that the rotation of the wards has been a great safeguard. If it had not been for that it would have only been a matter of time when the floors would have been saturated with germs.

5164. Leaving out of consideration the question of rotation, do you mean to tell me that, under present circumstances, the wards can fail to be in an unhealthy condition when they are continually crowded with patients, when they have no proper system of ventilation, and when the floors and ceilings encourage the reception of germs?—That is a comparative term. I think the Hospital is a vast improvement on the majority of homes in Dunedin, although it is by no means a perfect institution. There are many things in want of change, and that ought to be changed, but it is altogether a misuse of language to say that the Dunedin Hospital is a hotbed of septic disease.

5165. Do you mean to tell us, then, that it would be quite safe to allow things to remain as they are?—I think it would be very unwise to do so. Although no serious accidents have occurred in the Hospital, I think it would be unwise to wait until one did occur before anything is done.

5166. Now, as to the defects which exist at the present time: are they a source of material danger to the patients, do you think?—I think that, with the precautions that have been adopted, they have been in the past a source of comparatively little danger. The patients, on the whole, would have done fairly well under the circumstances in the Dunedin Hospital, and I have already given you my reasons for holding that view.

5167. *The Chairman.*] You mean that the precautions hitherto taken in the Hospital have prevented accidents?—Yes.

5168. *Mr. Solomon.*] Notwithstanding all these precautions, with the admittedly defective conditions, may not an accident occur at any moment?—I repeat my verdict of "Not proven." I am quite sure that many deaths have occurred in the Hospital which should not have occurred, and that will happen anywhere.

5169. From the insanitary condition?—No; in my opinion more deaths have occurred from want of proper nursing, particularly at night, than from any other cause.

5170. Do you think there is any doubt about the deaths having occurred from the unsatisfactory nursing in the Hospital?—No.

5171. In your opinion, do you think there can be any doubt that, during the course of years in which the Hospital has been in existence, septic poisoning has occurred, although you could not be in a position to prove it absolutely?—There must always be a doubt about these things that you cannot prove.

5172. A moral doubt?—Yes. I take it that in my profession there are a great many things concerning which one must hold his judgment in suspense, as it were, and this is one of them. I may say that no general outbreak of disease has occurred in the Dunedin Hospital so far as I know. I would not go so far as to say that no isolated cases of septic disease have occurred, but, at the same time, I have not had them demonstrated to me.

5173. Is it possible to demonstrate them? Let us take the case of Mrs. S——. Is it possible to demonstrate that her death was entirely due to the insanitary condition of the ward? Is it not a matter for inference?—Well, for a part of the time she certainly had a rise of temperature. On one occasion it ran up to 101°.

5174. That has not been proved [witness here read from the chart, showing that the temperature ranged from 99½° on the day of admission to 101° on the night preceding operation]. Is the result of what happened in that woman's case consistent with septic poisoning contracted through the insanitary conditions of the ward?—If you ask me my opinion about the cases——

5175. I do not ask your opinion, and I want you to tell me if the result in her case is consistent with a wound becoming poisoned through the insanitary condition of the ward?—Yes, I should say so. I do not think there is anything inconsistent about it, but he would be a rash man who would say distinctly that it was or was not.

5176. *Mr. Carew.*] Is it consistent with any other cause?—Yes, it is quite consistent with at least two or three other causes. There was a chance of latent tubal mischief.

5177. *Mr. Solomon.*] Supposing Dr. Roberts, who made the *post-mortem*, says it was not so?—With regard to that, I should say the kind of mischief would be hard to detect.

5178. There might be something which even the microscope would not reveal?—I understand here was old matter in the tube.

5179. Dr. Roberts has told us if there had been old septic matter in the tubes it would have been indicated by a thickening of the external walls, which there was not?—It depends on the amount of it. Assuming it to be present, there must have been a small amount, because a careful examination was made for it.

5180. As these things are not matters which can be accurately proved, but are generally matters of probability, there are, I presume, such matters of probability in connection with your profession as there are in ours?—Yes.

5181. Supposing in the same room during the same week there was a woman who had been operated on for the reduction of a labial cyst—which, we have been told, is a very simple operation—and that shortly after that operation, without any apparent cause, there being nothing in the condition of the woman herself to account for it, although she had been subjected to a particular examination before the operation, she developed pronounced septic symptoms, what do you say to that?—You might let me have the chart in that case.

5182. I want you to look at this document (Ex. xlvii.) and say whether it will assist you in any way?—This is rather against your theory of ward septicæmia, for the reason that we cannot suppose that it was the same germ that attacked Mrs. S—— and Mrs. T——. If it had been the same septicæmia, or that the trouble was due to the same poison in both instances, I fail to see any reason why Mrs. S—— should have died and Mrs. T—— should have had comparatively little trouble. Septic poison is intensely infectious if we get it into the system, and if the septic poison was sufficient to have killed Mrs. S—— I think it ought to have killed Mrs. T——.

5183. Suppose the atmosphere of the ward to be bad, and that there were germs in the ward, would it not necessarily follow that the same germs would get into more patients?—I think so. What you want to prove is that there was septicæmia in the ward. It is generally due to one and the same kind of poison.

5184. Do you suggest that this woman's case is a septic one?—I should certainly not call that chart a septic one.

5185. Several of the doctors who have been called here say it was, and Dr. Batchelor says that it was a pronounced case of septic poisoning?—I see her temperature was 102° at the highest; then 101½°, then 100°, the average temperature for four or five days being not more than 100°. I should certainly be inclined to deny that that was a septic chart. But there is no record of the state of her pulse, which would have assisted one to form an opinion.

5186. Now look at Mrs. P.——'s chart for the 26th, 27th, and 28th July?—I certainly should not call that a septic chart. There are only two recorded temperatures of 103°, and then the temperature goes down at once. You cannot base a charge of septicæmia on a temperature like that. A typical chart is that of K—— W——, which goes up and down.

5187. Assuming that Mrs. T——'s (who was suffering from a labial cyst) wound was attacked by the same septic germ that attacked Mrs. S——, and killed her, would not her temperature, and the condition she was in, point to the fact of the germ having attacked the wound before it could get

into the blood system, as otherwise she would have got pyæmia?—I do not see how the temperature could go up without the poison in some way getting into the blood system.

5188. You say that if you do not find that the temperature goes up the poisoning of the wound would be by infection?—Yes. It is believed to be caused by absorption. There are two forms in which septic mischief can arise. The one is sapræmia, which is produced by the absorption of the products of fermentation of tissues or dead-matter, while septicæmia is due to a number of germs self-multiplying in the blood.

5189. We have been told by recognised authority that the frequency of erysipelas is due to causes connected with the sanitary condition of a hospital?—In regard to the frequency of erysipelas, you must first of all decide between medical and surgical erysipelas. If you have many cases in the surgical wards it is a sign of the bad sanitary condition of a hospital. But medical erysipelas may be due to climatic and other influences.

5190. When we find in the Christchurch Hospital, which is ventilated according to the modern principles, and is admittedly greatly superior to our own Hospital in this respect, that there has not been a case of erysipelas for three years and a half, while on the other hand we find that in the Dunedin Hospital there have been ten cases of erysipelas within eighteen months, does not that throw any suspicion on our own Hospital?—You must make a distinction between cases occurring in the Hospital and those brought into the institution.

5191. But we have been given to understand that these ten cases are cases that arose within the Hospital?—I should then want to know whether they were surgical or medical. But I cannot recall to my mind any cases of surgical erysipelas.

5192. They were not brought under your notice?—If there had been anything like an outbreak it would clearly have been the duty of the surgeon to have called the members of the staff together; and if the surgeon had cases of surgical erysipelas the staff should also have been advised, so that we might know what to guard against, and take proper steps for preventing the spread of the cases.

5193. There is the case that Dr. Maunsell has mentioned, of a patient who was virtually better, was just on the point of going out, when he developed septic sore throat, and afterwards erysipelas of the knee-joint; and we have been further told that there was nothing to account for it. That was a case of surgical erysipelas, was it not?—I do not know. There have been so many quoted and denied.

5194. You have told us that in some patients draughts are liable to produce erysipelas?—Yes.

5195. What is the condition of the Dunedin Hospital so far as draughts are concerned?—It is a draughty Hospital, I should say.

5196. At what part of the year is the danger from draughts the greatest?—In the cold weather, of course; but it crops up at all times.

5197. Is it possible to avoid draughts under the present system of ventilation?—I never knew any hospital yet where it was possible to wholly avoid draught.

5198. Then, on the whole, you think that this Hospital is fairly off in the matter of draughts. Does it compare favourably with other hospitals in this respect?—I think perhaps that there are rather more than we should have. I remember that in one of the best hospitals in London a patient complained of "long prayers" and continual draughts.

5199. But it is impossible to ventilate this Hospital, except by means of the windows?—I think it is inadvisable to have a hospital ventilated entirely by means of the windows.

5200. And to have patients put directly under the windows?—I have not seen any serious results from it.

5201. The other day we heard of a patient who was killed in thirty-six hours through being exposed to these draughts: is that surprising?—There is nothing surprising.

5202. Then, it is a mere matter of detail?—Such a thing never occurred within my own experience.

5203. We have been told by Dr. Lindo Ferguson that never in all his experience did he hear of septic poisoning arising after operation for iridectomy, but that in the Dunedin Hospital he had two cases of septic poisoning within one week which he traced directly to the condition of the ward in which his operations were performed. Is such a result as that at all improbable, assuming the inefficient ventilation, &c., of the general wards of the Dunedin Hospital?—Ophthalmic patients, to be properly treated, require to be placed in a special ward. I have held that opinion all along.

5204. What have you to say about gynecological cases?—I think that a gynecological ward ought to be a part of every well-conducted hospital. The very nature of these cases requires that there should be a separate ward for such in every well-conducted hospital.

5205. At the present moment you are all exercised in considering in what sense and in what way the defects of our Hospital should be remedied: will you tell us in what directions you consider reform in the Hospital to be most needed?—I do not care to go into that question off-hand. I think that the first requisite is to establish a friendly feeling between the Hospital staff and the Trustees. I regard the rest as matters of detail.

5206. And as a matter of friendly feeling, you, after the initiation of this Commission, were anxious that Dr. Batchelor should withdraw from it?—I was.

5207. I think Dr. Macgregor and you had some talk together on the subject?—Yes, we had; and I talked with several other medical men on the subject.

5208. You exchanged ideas on the subject?—We were all of the same opinion in the matter.

5209. Although you admit that there are serious defects in the Hospital, and that nothing has been done to remedy them?—I do not admit that nothing has been done.

5210. From the time of sending in that report, in which fault is found with the number of beds, the want of bed-space, with the insufficiency of the ventilation, and the position of the water-closets, &c., have not things been practically allowed to remain the same—for instance, are not

the beds, as the report says, still too close for the health and comfort of the patients?—I think that the last paragraph of the staff's report has not been altered sufficiently. The whole matter is a very difficult one, and we cannot expect the Trustees to jump at conclusions all at once. We must give them time.

5211. You have been very anxious, have you not, to settle the whole matter so that there should be no friction between the Trustees and the doctors?—I have.

5212. That was one of the principal reasons you urged why Dr. Batchelor should withdraw from the Commission after initiating it?—Yes.

5213. Did you not, in a letter to the *Daily Times*, say that it was a matter of "paramount importance" for the safety of the lives of the patients that these reforms should be carried out?—Yes; but I also say that if we want to have these reforms carried out it is absolutely necessary to obtain a better feeling between the Trustees and the staff.

5214. Suppose you had in hand the making of reforms in the Hospital, what would be the first thing you would do?—The first thing I should turn my hand to would be to ask for a report from a sanitary engineer as to the suitability of the site. That seems to me to be the first question requiring determination.

5215. What do you think about that question yourself?—In it I should be entirely guided by a sanitary expert. I have been informed, with regard to the present site of the Hospital, that 5ft. or 6ft. below the ground there is thick black mud. In the next place, I should ask for the opinions of experts as to what use, if any, can be made of the present building, or if a good building could be built there. I think the matter of a new building is essentially one for experts and sanitary engineers.

5216. But supposing we were altering the present building, so as to make it as good for hospital purposes as possible, in what directions would you proceed?—Are you assuming that a new Hospital is not to be built.

5217. Yes?—I should say that the number of the beds in the present wards ought to be lessened and that the waterclosets ought to be cut off from the wards by a corridor.

5218. What about ventilation?—Some attempt should certainly be made to furnish a constant supply of fresh air night and day, by means of Tobin's tubes or some other method.

5219. *The Chairman.*] I suppose you include in that a supply of warm air?—Yes.

5220. *Mr. Solomon.*] You have not said anything about the other points: are they merely ideal subjects? What about the nursing system?—That is one of the first things that we have called for reform in.

5221. It has been promised, but it has not yet been done?—Nothing has been done.

5222. *Mr. White.*] We have increased the number?—I did not know that.

5223. *Mr. Solomon.*] Do your remarks on the closets include the baths?—Yes. The whole of that end of the wards should be shut off. I certainly think there ought to be special wards.

5224. *The Chairman.*] Is there anything else which is specially pressing? Have you any faults to find with the floors?—I think if it is possible to have the floors closer it should be done, and that the floors should be waxed.

5225. Would they not need to be thoroughly relaid?

5226. Is that all you have to suggest?—Yes.

5227. Are you aware of the position of the kitchen? Are you, as a medical man, satisfied with the present kitchen?—I think there should be a kitchen to every ward.

5228. What state is the kitchen in?—Any time I have been there I have always seen it clean and well kept. I certainly think that it is too low in the roof.

5229. What about the lighting of it?—I consider that good lighting is very essential for a kitchen.

5230. Then, it is too dark there?—It is.

5231. Is it an atmosphere such as food should be allowed to lay about in?—Any time I have been there the place was fairly ventilated. The doors and windows were all open.

5232. Do you think that the kitchen has any influence on No. 3 ward, which is directly over it?—That is always a close and stuffy ward, due probably to the kitchen being immediately underneath it. My experience of it is that it is a very bad ward.

5233. Have you noticed any unpleasant escape from the flues in the wards?—No.

5234. In the corridor?—It has frequently been unpleasant there. I mean just outside of No. 3 ward.

5235. Do you know where it came from?—I do not. It has been frequently suggested that it had something to do with dead cats or rats underneath. I have frequently noticed an intermittent bad smell there.

5236. *Mr. White.*] Has there not been a little irritation between the Trustees and the medical staff?—There has been a good deal of irritation.

5237. And you think that in order to remove it the best thing is to have a friendly conference?—Yes.

5238. You think that is best in the interest of the Hospital?—Yes; and it has been my opinion for some time.

5239. You know, of course, that the Trustees have received a sum of money that has been subscribed for the purpose of building a nurses' home?—Yes.

5240. Perhaps you did not know that it was only last week that the Trustees received the Government subsidy on that amount?—I did not.

5241. Do you not know that one of the proposals was that we should wait until the nurses' home was built, in order to see what further accommodation would be required?—I do not know anything of the details of that.

5242. In order to see if any of the rooms now used by the nurses could not be used as separate

wards, and that it was proposed to have the waterclosets isolated?—I am sure that the building-out of the closets would be satisfactory.

5243. Dr. Truby King suggested that a partition might be put up so that the closets should be entirely cut off from the ward, and so provide ample ventilation?—So far as my knowledge of the structure of the wards goes, I do not think that that would be satisfactory.

5244. *The Chairman.*] I suppose that the real difficulty is to find the money, which has to come from the public, who must be thoroughly informed of the reasons which render the expenditure necessary?—Just so.

5244A. And a conference with the Trustees would in some degree answer that purpose.

5245. *Mr. White.*] I understood you to say, in answer to Mr. Solomon, that you do not admit that nothing has been done in the way of improvements?—Since my connection with the Hospital in 1884 I have seen very great improvements effected, and they are going on constantly.

Mr. Robert Henry Hogg sworn and examined.

5246. *Mr. Chapman.*] What is your name?—Robert Henry Hogg.

5247. What are you?—A medical student at the Otago University.

5248. Do you remember the case of Mrs. S——, who was a patient in the Dunedin Hospital?—I do.

5249. Are you attached to Dr. Batchelor in any way?—I was Dr. Batchelor's clerk at that time.

5250. That was in July last?—Yes.

5251. The notes in part of this book [Dr. Batchelor's private case-book handed to witness] are in your handwriting, are they not?—Yes.

5252. Kindly read them?—"E. S——; ætat twenty-nine; married; admitted to ward 7, 7th July, 1890. Statement: Complains of sharp shooting pains in the left groin, of dragging-down character, when she walks; has a sticky, yellowish discharge."

5252A. I wish to draw your attention particularly to the words, "yellowish, sticky discharge:" how came they to be made?—I made those notes in the book because they are what was stated to me by the patient as to her condition.

5253. Who was present?—There was no one present but myself.

5254. Is this [pointing to entry in case-book] in your handwriting?—All this is in my handwriting.

5255. *The Chairman.*] Were these notes put in as the results of examination made in the Hospital?—Yes; some were.

5256. And that part which Mr. Chapman has directed your attention to was told you by the patient herself?—Yes; that is her statement.

5257. You did not see it yourself?—No.

5258. *Mr. Chapman.*] Do you read your notes over to Dr. Batchelor?—No, I do not, unless he asks for them.

5259. *The Chairman.*] Do you remember whether you read the particular notes over to him?—I cannot remember whether I did or not. Sometimes he asks for them, but I do not read them to him as a rule.

5260. *Mr. Chapman.*] They were subsequently entered into the case-book?—Yes.

5261. Were they put in by you under Dr. Batchelor's guidance?—In the case-book?

5262. Yes?—No; they were put in by myself.

5263. *The Chairman.*] That is what you just copied in from these rough notes, as it were?—Yes.

5264. When did you write that up in the case-book?—I cannot say exactly.

5265. Did you write it up the same day, or allow it to stand over?—It would stand over for a day, perhaps for a day or two; that depends very much on how much I have to do. As a general rule, I write the notes up the same morning.

5266. *Mr. Chapman.*] I observe that there are some marginal notes?—Those are not in my handwriting. I notice some notes by Dr. Batchelor against Mrs. S——'s case.

5267. *The Chairman.*] Are they made in connection with the "yellow discharge"?—There is no mark beside that.

5268. In making an examination of this kind prior to operation, would he refer to the case-book or to the original notes?—I have seen him refer both to the original notes and to the case-book.

5269. Would he necessarily refer to them, or trust to his own observations?—He would probably refer to either.

5270. *Mr. Chapman.*] Let us take this case of Mrs. S——, for instance: what is the process? Was a portion of the notes taken verbally from the patient herself, and a portion taken down while the examination was going on?—I dare say that that was the case.

5271. I suppose that the doctor, as he made his examination, would report to you what to write down?—In some cases of examination, yes.

5272. Were you present when Dr. Batchelor examined this patient?—Yes.

5273. *The Chairman.*] At what date?—I beg your pardon. I was not present at the first examination, because the notes are in Dr. Batchelor's own handwriting. There were two examinations, and I was present at the second one.

5274. *Mr. Solomon.*] In neither Dr. Batchelor's notes of the examination which he made, or in your notes of the examination at which you were present, is there any mention of any sticky discharge?—No, there is none.

5275. Did you ever call Dr. Batchelor's attention to the fact that you had made an entry about

the woman having "a yellowish sticky discharge"?—I have no recollection of calling his attention to it.

5276. Did you ever have any conversation with him, between the time of your making the entry and the time of the operation, that this woman had such a discharge?—I cannot recollect any.

5277. Do you recollect this fact: whether she had that discharge at the time of her admission to the Hospital, or whether she had it before admission?—I merely entered it as the statement of the patient herself on taking her case.

5278. Did it necessarily mean that she had it at the time of her admission, or did it mean that she had it at different times in connection with her uterine trouble?—I cannot say.

5279. Can you say as a fact whether she had it at the time that she was admitted?—No.

5280. Up to the time of operation in Mrs. S——'s case, was it ever brought before your notice, or did you bring it under Dr. Batchelor's notice, that Mrs. S—— had had a temperature of 101° just before operation?—No.

5281. Did you know anything about it?—I did not.

5282. You operated on Mrs. T——, did you not?—Yes, under Dr. Batchelor's direction.

5283. Was it a difficult operation?—No, it was a very simple one.

5284. Was it successfully performed?—Yes, so far as the operation went.

5285. Did you make any previous examination?—So far as my recollection goes, there was a previous examination made.

5286. With the view of ascertaining whether there was any objection to performing an operation?—That would be the object of it.

5287. Did any objection appear?—Not so far as I have any recollection.

5288. Did Mrs. S—— ever mention to you, or did you ever hear, that she had suffered from rigours?—No.

5289. Are you sure of that?—I am certain.

5290. Had she, to your knowledge, suffered from rigour after admission and before operation?—No.

5291. Did you see her after admission and before operation?—Before operation I saw her two or three times.

5292. Did she ever show any symptoms of an inflammatory character—any septic symptoms—before operation?—My attention was not called in any way to inflammatory symptoms.

5293. I understand that that examination which you have referred to was specially made with the view of detecting such symptoms, if there were any?—Yes.

5294. The patient was put under chloroform, was she not, in order to make an extensive examination?—She was.

5295. Did any of them come to light?—No, there were none recorded.

5296. To go back to the case of Mrs. T——, was there anything in the condition of the patient that you could see by examination, or anything in the operation itself, to call for the rise of temperature that took place afterwards?—The operation was not a serious one in itself. I am not prepared to offer any opinion as to the woman's condition; it is not within my province as a student to do so. I may say that there was nothing that came under my notice to account for it.

5297. Tell us what happened in Mrs. T——'s case? Did the wound do well or badly?—It did badly.

5298. Suppuration followed, did it not?—It did.

5299. *The Chairman.*] When did the bad symptoms begin?—If I remember rightly, there was a rise of temperature on the following morning, and there was a rise of temperature recorded in the evening after the operation.

5300. The same evening or the evening after?—The same evening.

5301. *Mr. Solomon.*] The wound had to be reopened and washed out, we have been told?—Yes.

5302. Do you know whether the patient is in the Hospital or not?—She is still there.

5303. Can you offer any opinion as to how long the operation would have lasted in the ordinary course, if these septic symptoms had not set in?—I should say that the wound would probably have healed by first intention if there had been no suppuration.

5304. It would have healed by first intention, in how long?—I think she would have been out in a few days.

Mr. Peter Miller sworn and examined.

5305. *Mr. White.*] Have you ever seen this letter [Dr. Batchelor's to Chairman of Trustees] before?—Yes.

5306. Where did you get it from?—Dr. Batchelor left it with me.

5307. *The Chairman.*] In what capacity did you get the letter—as Chairman of the Trustees?—Yes, I think so.

5308. *Mr. White.*] It is addressed to you as Chairman, is it not?—Yes. I may explain that Dr. Batchelor called on me on several occasions about various matters connected with the Hospital, and particularly about the time of Mrs. T——'s operation.

5309. Do you mean before the operation?—No, before her death. He said that he was not satisfied with the state of matters in Mrs. T——'s case. It was either in the morning or the afternoon before her death that he called on me about her.

5310. *The Chairman.*] The operation was performed between 4 and 5 in the afternoon, and she died at 10 o'clock next morning?—Well, he called on me on the afternoon or in the morning before she died—I will not be sure which—and, after hearing what he had to say, I said that, if the results were as bad as he thought them to be, he ought to put the matter in writing, when I would immediately put it before the Trustees. I further said to him that, to my mind, the only way in which the matter could be cleared up was, in the event of the woman's death, to have a Coroner's inquest held, so that the whole of the facts might be brought out.

5311. You recommended him to put his complaint in writing?—Yes, in such a way that I could put it before the Trustees.

5312. *Mr. White.*] She was operated on on the afternoon of the 21st, died on the morning of the 22nd, and that letter is dated when?—The 23rd. He called on me before her death and made his complaint, but he called again and left this letter, and asked me to look over it. He said that I was to look on his letter more as a kind of guidance to me as Chairman of the Trustees that the Hospital was in a bad state, and that he thought it necessary to have certain things remedied.

5313. I am afraid that you are mistaken, and that you are mixing two things up?—No. I know every word of his letter. Dr. Batchelor had several conversations with me in reference to Mrs. T——'s death, because he had complained to me about the want of light and the draughtiness of the ward in which he performed the operation. He complained very bitterly to me.

5314. *The Chairman.*] You had several conversations with him?—Yes. The letter was the result of these conversations. Then I made inquiries at the Hospital to ascertain if anything could be done to obviate any of the defects that had arisen in this case, and was told that the principal cause of the doctor's complaint was a bad light caused through a kerosene-lamp. I found that I could do nothing in the way of remedying what was complained of in the letter. At the time he left the letter I asked him if it was to be put before the Trustees, and he said that it was to be held over for the present; that he would let me know in the course of a day or two; and would meanwhile consult some of his own friends.

5315. He asked you not to act on it?—Yes.

5316. *Mr. White.*] What then?—So far as Mrs. T——'s death was concerned, the matter rested there.

5317. Did you receive another letter?—Simply that one asking me to take no further steps in the matter. [Letter of 27th July handed in.]

5318. Did you receive the original of that letter?—Yes.

5319. *The Chairman.*] That letter does not ask you to take no further action [letter read]?—I must say that the letter I received said so, and I think that Dr. Batchelor will bear me out in that.

5320. Was that the letter you got?—I cannot swear to the exact wording of the letter.

Dr. Batchelor: That is an exact copy of the letter I wrote.

Witness: Well, I was clear in my own mind, after reading it, that I was not to allow it to go before the Trustees.

5321. *Mr. White.*] Your understanding was that the matter was at an end?—Decidedly

5322. And that you were not to move in the matter?—I was not.

5323. Did you, as a matter of fact, ever bring that letter before the Trustees?—No.

5324. *The Chairman.*] Do you adhere to your statement that you received a second letter asking you to take no further action?—That is so.

5325. And you took no further action?—Exactly.

5326. *Mr. White.*] That was your understanding of the letter?—Yes.

5327. And that is the reason why you did not bring it before the Trustees?—Yes. And I made inquiries myself as Chairman of Trustees.

5328. Until this copy was brought before the Commissioners, where was the letter kept?—In my private house.

5329. Did you keep it yourself?—Yes. Nobody ever saw it except it myself.

5330. Until it was produced here?—Yes; until this copy was produced in Court here. My reason for doing so was that I was clearly under the impression that Dr. Batchelor did not wish that it should go before the Trustees in a formal manner.

5331. Will you kindly explain the position as to Mrs. S——'s matter?—I dealt with that in a similar way. Dr. Batchelor called on me on one or two occasions, and said that he was dissatisfied with the way his patients were doing. He thought he was having too many bad results; and, of course, he blamed the Hospital for those results. I said, "Very well; if that is so, the best thing you can do is to put the matter in writing; give me the document, and allow me to put it before the Trustees."

5332. Is that what you do when you have doubtful complaints?—That is the way I do with all medical gentlemen, and then we have time to consider their complaints. I think it is the best course to take in matters of this kind. Well, Dr. Batchelor did so. He came to me with the S—— letter—that is, the original complaint—immediately after her death. I think she died early in the morning, and he came to me about 10 o'clock with this letter. I read it through, and he asked me what I thought of it. I replied that it was a very serious matter, but I was not in a position to give an opinion one way or the other just then—that I should want time to think over it. He said that he would leave the letter with me, and call back in the afternoon; that, if there was anything in it which I thought was too strong—that if any of the details were unwarrantable or unnecessary—he was quite willing to take any portions of it back, or to alter it in any way, as he said that he had no wish to cause unnecessary strife or unnecessary noise over the matter. He left the letter with me, and called again in the afternoon, as he had promised. I then said that I had come to the same conclusion, so far as my lights had shown me—that the case was a very serious one, which demanded serious consideration; and, if the case was as he had stated it, there was not, to my mind, a single word which could be eliminated from the letter. I further said that the only course to be taken was, as I had said before in Mrs. T——'s case, and I should advise the Trustees, accordingly, to have a Coroner's inquest, as that, to my mind, was the best way of getting at the bottom of this matter, and having it thoroughly inquired into. Dr. Batchelor said, "Very well," that he was quite satisfied, and left.

5333. *The Chairman.*] Then, he agreed to that course?—Yes, he agreed with it.

5334. What took place next?—A meeting of the Trustees was held the same night, though it had been called for another purpose, and there was a general discussion on this matter. Some of

the Trustees wanted the Government to appoint a Commission to inquire into this matter, and others wanted a Coroner's inquest to be held. At the suggestion of Mr. White, who is one of the Trustees, it was decided, while the discussion was going on, to ring up Mr. Carew, and to inquire of him whether he could hold a coroner's inquest—we had received a letter from Dr. Batchelor on this matter—and Mr. Carew said "No," that the matter would have to be reported to him by the police. Mr. Carew was further asked if, in the event of the Trustees holding a *post-mortem* examination, it would be sufficient, and Mr. Carew replied "No," that he would have to order a *post-mortem* examination.

Mr. Carew: I said that a *post-mortem*, to be legal, must be held under my order.

Witness: When the result of the conversation with Mr. Carew was reported to the Trustees it was unanimously decided to ask the Government to appoint a Commission for the purpose of holding this inquiry, and it was decided to hold a *post-mortem* examination of the body.

5335. *Mr. White.*] As to the *post-mortem*, there is an element which you have not mentioned, which is that the resolution of the Trustees covers the consent of the husband being obtained?—Yes. In the event of the husband refusing to allow a *post-mortem* we were to get the Coroner to hold an inquiry.

5336. Then what happened?—Dr. Batchelor, in his letter, had stated that he would be present to give any further information on the matter which might be thought necessary. I mentioned that Dr. Batchelor was in waiting, and was asked to intimate to him that the Trustees had agreed to ask the Government to hold an inquiry, and had decided to hold a *post-mortem*, and to request Dr. Batchelor to make no statement for the present, but that it should be reserved for the inquiry. Dr. Batchelor came into the room, and I told him this. He suggested that Dr. Roberts (pathologist of the Hospital) and Dr. Ogston should be appointed to hold the *post-mortem*, but it was found that Dr. Ogston could not act, and the Trustees elected Dr. Jeffcoat in his stead.

5337. Were the medical staff invited?—I asked the secretary to intimate that the *post-mortem* would be held, and informing them that they could be present if they liked. I thought it would be well if they were there, but I did not invite them to be present.

5338. The minute goes on to say: "The chairman stated that Dr. Batchelor had intimated to him that he would be present to give the Trustees any further information they might require in reference to his letter *re* the circumstances attending Mrs. S——'s death. It was decided to inform Dr. Batchelor that, as the Trustees had decided to apply for a special Commission to hold an inquiry, it was not necessary that he should make any further statement." Was that the actual position?—Yes.

5339. Dr. Batchelor then left the room?—Yes.

5340. Did he come back again?—He made a remark in a half-jocular way: "Am I supposed to be on my trial in this matter?"

5341. He did not say, "Any way, my letter will be made public"?—Oh, yes. He said, "Of course my letter will be published."

5342. *The Chairman.*] What else took place?—As far as my memory serves me, when he said "Of course my letter will be made public," I said, "Decidedly; the inquiry is to be a public one;' and from the fact that we had agreed to ask the Government to hold a public inquiry there was not the slightest use in asking that his letter should be made public then.

5343. *Mr. Solomon.*] Is not this the resolution of the Trustees: "*Resolved*, That the Government be requested to appoint a special Commission to inquire into the alleged insanitary state of the Hospital wards," &c.?—I do not know I am sure.

5344. There seems to me some misunderstanding about these letters. Dr. Batchelor has sworn that that is a true copy of the letter which he sent to you after the letter of the 23rd: are you prepared to say that it is not so?—I am not prepared to say that it is not a copy. Unfortunately, I placed little importance on that letter, and it got destroyed among some other of my papers.

WEDNESDAY, 10TH SEPTEMBER, 1890.

Dr. JOHN MACDONALD sworn and examined.

5345. *Mr. Chapman.*] What is your name?—John Macdonald.

5346. What are your medical qualifications?—I am a duly-qualified registered medical practitioner in New Zealand, am a member of the College of Surgeons in England, and a member of the College of Physicians in England. I am a licentiate of King's College and of the Royal College of Surgeons, and also hold a diploma from the College of Surgeons, England.

5347. Are you on the teaching-staff of the Otago University?—Yes; I am lecturer on *materia medica*.

5348. In addition you are on the medical staff of the Hospital?—Yes.

5349. *The Chairman.*] Since when?—I have been a member of the staff for ten years.

5350. *Mr. Chapman.*] You were chairman last year?—I was.

5351. How long have you been in practice?—For thirty years.

5352. How many years have you been in practice in Dunedin?—A little over twelve years.

5353. And for the remainder of the time in Great Britain?—For about twenty years.

5354. What hospital experience have you had in Great Britain? What hospitals there do you know?—I know the Edinburgh Royal Infirmary, the Lincoln County Hospital, and the small hospitals of Kidderminster and Worcester.

5355. Do you know any of the London hospitals?—No.

5356. Do you know any of the hospitals in New Zealand?—I have seen the Christchurch and Nelson Hospitals.

5357. Lately?—I saw the Nelson Hospital in July last, but it is upwards of five years since I saw the Christchurch Hospital.

5358. You say that you have been ten years on the staff of the Dunedin Hospital?—Yes; I was an honorary physician for six years, and during the last four years I have been doing special work in skin-diseases.

5359. Have you any beds in the Hospital?—I have a certain number, but I very seldom have any patients.

5360. That is during the past four years?—Yes.

5361. But formerly did you have any?—Yes; I had my fair share of beds.

5362. Will you kindly give us your opinion as to the suitability or otherwise of the building,—the block plan, on which it is built, as against the pavilion system?—I do not think it is an exactly suitable building for a hospital.

5363. I suppose you know that it was not built for, but was adapted to, a hospital?—Yes.

5364. I will just ask you generally as to the closets: what is your opinion of them?—I think that they are fairly good. I do not think that there is very much to complain about them.

5365. And as to the lavatories and baths?—I do not think that it is advantageous that they should be in the wards, as they are now.

5366. Do you complain of them being in the wards?—I think that they would be better out of the wards.

5367. Do you approve or disapprove of the floors?—They are not all they might be; the boards do not come close enough together.

5368. And the walls?—I do not see anything particular to find fault with.

5369. And the ceilings?—I did not notice anything particular to find fault with in them either.

5370. What is your opinion as to the ventilation of the wards?—When I was one of the physicians I noticed, on two or three occasions, that the wards were slightly stuffy, but it was nothing very much.

5371. Is that an uncommon thing to notice in hospitals?—No, I do not think it is.

5372. Were they more stuffy than the wards in other hospitals that you have visited?—Not that I have observed.

5373. Did you notice anything wrong with the number of beds in the wards?—Well, they are just in about the same position as I have seen them in other hospitals.

5374. *The Chairman.*] You mean in reference to overcrowding?—Yes.

5375. *Mr. Chapman.*] Do you mean that they were not overcrowded?—I do not think they are. In speaking of hospitals, I forgot to mention that I have seen the Marine and Queen's Hospitals in New Brunswick.

5376. Do you know the ideal distances given for bed-space?—I cannot say that I do.

5377. Do you know whether the beds are too close theoretically?—I do not.

5378. Comparing this Hospital with other hospitals, what is your opinion of it?—I think that it compares favourably with any hospital I have ever seen, except the Lincoln County Hospital, which was built fourteen years ago, and is an entirely new hospital.

5379. How many beds were there in that hospital?—I forget the exact number.

5380. What were the results of your cases in the Hospital here?—I have had very good results.

5381. Do you agree with Dr. DeRenzi, who said that, under existing circumstances, "the Medical School, with its present surroundings, is not a proper place in which to teach the practice of medicine"?—I do not agree with that. I think that the men who have qualified here have received much more practical instruction than nine-tenths of the men who have been turned out at Home.

5382. *Mr. Solomon.*] I understand you to say that, after your thirty years' experience, you have found that the Dunedin Hospital compares very favourably with the other hospitals you have seen, with one exception?—Yes.

5383. But you have told us that you do not think that the building is suitable, but that you have not heard any complaints concerning it?—I certainly did not make any.

5384. Have you any complaint to make?—I do not think I have any particular complaint to make.

5385. May we take it that you do not know of anything of serious consequence to complain of?—Perhaps not.

5386. *The Chairman.*] What do you think?—I do not think that there is.

5387. *Mr. Solomon.*] I understand you to say that, in your opinion, you do not know anything in connection with the Hospital that is of serious consequence at all?—No.

5388. Anything at all, in connection with the Hospital, that is likely to interfere with the health of the patients?—I do not know of any.

5389. You were chairman of the medical staff in May of last year, were you not?—Yes.

5390. At that time Dr. Lindo Ferguson had prepared a report on the condition of the Hospital at the request of the Hospital Trustees. Do you remember that?—I do.

5391. At a meeting of the staff held on the 20th May, 1889, of which you were chairman, I find this minute: "Dr. Lindo Ferguson read a paper and showed a plan prepared by him containing suggestions whereby the present hygienic defects in the ward construction of the Hospital might be amended. The late hour prevented any discussion thereon, which was postponed till next meeting." You signed that as chairman, as being correct, did you not?—I suppose I did.

5392. And at the next meeting, on the 27th May, I find this minute: "Dr. Lindo Ferguson's suggestions for remedying the existing hygienic defects came up for discussion. Those present were unanimous as to the main contentions therein contained, but some differences of opinion prevailed as to the details of their being carried out. The secretary was requested to see such members of the staff as were absent from the meeting, and, if they were unanimous as to the main contentions, also to forward copies of the suggestions to the Trustees, and to add a paragraph to the

effect that they were unanimous as to the main contentions, but were not entirely agreed as to the methods of carrying them out." Do you remember these motions being carried?—I do not.

5393. Yet I find you stating here to-day that, in your opinion, there is nothing at all wrong with the Hospital—nothing that would be likely to interfere with the health and comfort of the patients?—So far as I know, there is nothing that will do so to any great extent.

5394. Now, I find this paragraph in the report to which that resolution refers, and which was practically unanimously adopted by the staff: "As, practically, there are only two walls available for beds, one of which in each ward is broken up by the chimney-breast and a doorway, the beds are necessarily placed too close to each other for either the health or comfort of the patients." Is that true or not?—I do not think it is proper.

5395. But you were a party to this report?—I was not. I said nothing, because it was useless to say anything.

5396. Did you not know then, and do you not know now, that that report was prepared at the request of the Trustees for their own guidance?—That is Dr. Lindo Ferguson's report.

5397. Did not the Trustees ask that it should be prepared?—Did the Trustees ask him to make it?

5398. The Trustees asked the staff to prepare a special report and forward it to them?—Excuse me, I do not think that the Trustees asked Dr. Lindo Ferguson to make a special report.

5399. What I now ask you is, is this paragraph from the minutes true or not: That the report came up before the medical staff for discussion, and that those present at that meeting "were unanimous as to the main contentions therein contained." The minute is signed by "John Macdonald," as chairman. I ask you, again, is that true?—If it is as you read it, it is true.

5400. Then, you had better read it for yourself. Why did you consent to it passing if you did not approve of it?—What was the good of opposing it? There were enough members on the other side of the staff to carry it.

5401. Did you not sign a statement to the effect that the members of the staff were "unanimous as to the main contentions" contained in that report?—I dare say I did.

5402. And did you not know that this report contains a statement that the beds are "necessarily too close for the health and comfort of the patients"?—I really did not recollect it at the time.

5403. I find it also stated in the report, in reference to the waterclosets: "We are strongly of opinion that no system of double doors will render a ward safe which has a closet opening directly off it. We consider (and our views are those of the best authorities on sanitation) that all closets should be entirely outside the wards, and that communication should be by a lobby or corridor which has free cross-ventilation." Do you find anything to complain about the closets?—I looked at them to-day, but could not find anything to complain of.

5404. Do you not observe that this report has entirely to do with "the present condition of the wards"?—But I had nothing to do with the drawing-up of that report, which was drawn up by Dr. Lindo Ferguson himself.

5405. Was it not discussed before the staff?—It was not; at least, I do not think it was.

5406. Goodness gracious me! Listen to what the minute says: "Dr. Lindo Ferguson's suggestions for remedying the existing hygienic defects came up for discussion." Is that true or not?—I do not recollect it.

5407. What are we to think about your statement that the report was not discussed?—I positively cannot recollect it.

5408. But you were chairman of the meeting which discussed it?—Yes, but it was quite useless to say anything at that meeting.

5409. Why?—Because the members of the staff were in such an excited state.

5410. Excited about what?—About a rumpus.

5411. *The Chairman.*] Who introduced the word "unanimous" into the minute?—I am sure I do not know.

5412. Did you write the minutes up?—No.

Mr. White: They are in Dr. Roberts's handwriting.

5413. *The Chairman.*] And were confirmed in the ordinary way?—Yes.

5414. Do I understand that three or four members agreed to this report when it was discussed, but now repudiate it?—I had nothing to do with drawing it up.

5415. Do you admit that it is correct to say that you repudiated it?—I do not think it is correct to say so.

5416. Yet you signed the minutes of that meeting, which say that the staff were "unanimous as to the main contentions" of that report?—Yes, I did sign it.

5417. *Mr. Carew.*] Was the motion put to the vote at all?—I do not recollect.

5418. Was there an addition or amendment to the motion for adopting this report?—I do not recollect.

5419. Would it have been recorded if there had been?—I suppose it would.

5420. *Mr. Solomon.*] Did you ever say that you disagreed with this report?—No.

5421. To anybody?—I may have said so outside, but I did not say anything at the meeting.

5422. Did you disagree with it at the time?—Well, I did not exactly approve of it.

5423. Do you remember whether, as chairman of the meeting, you invited the opinions of the various members of the staff on this report?—I do not think I did.

5424. Was the motion ever put to the vote?—I really do not recollect.

5425. Do you recollect whether there was any discussion?—I positively cannot recollect. There were so many meetings at about this time.

5426. All you can say, then, is that you do not recollect anything about it?—Positively, I had forgotten all about it until Dr. Lindo Ferguson spoke to me about it in the street the other day.

5427. You had forgotten that such a report had been prepared?—Yes.
5428. Do you approve of the system by which the Dunedin Hospital is ventilated?—No; that might be improved.
5429. What is that system of ventilation?—The wards are simply ventilated by means of open windows and fireplaces.
5430. Is that satisfactory?—Not altogether.
5431. Have you ever seen any other hospital ventilated in the same way?—The hospitals that I saw were old ones, except Lincoln, and I do not recollect much about them.
5432. You have seen the Christchurch Hospital?—That was upwards of five years ago. I believe it has been altered since then.
5433. Do you think the ventilation, which you say you do not approve of, is a matter of serious importance?—I do not think it is so serious as all that.
5434. Then, you do not think it is serious?—No.
5435. Do you see any particular objection to allowing the ventilation to remain as it is?—No, I cannot say that I do.
5436. Do you think that there is any necessity at all for reducing the number of beds?—No.
5437. Any necessity, in your opinion, for removing the closets?—No.
5438. Do you see any particular objection to the floors?—The floors might be in a better condition.
5439. Do you think that the matter is of any great importance or is of minor importance?—Of minor importance.
5440. Can it be quite safely left as it is?—Yes; there is no immediate necessity to do anything.
5441. The walls and the ceilings: is there anything the matter with them?—No; nothing worth mentioning.
5442. Tell us now if there is any necessity to alter anything at all in the Hospital?—The baths might be removed, and the lavatories also, because the steam from the baths gets into the wards.
5443. That is the only thing which you think requires any alteration?—So far as I can see, that is all.
5444. Have you devoted any attention to the study of particular drainage?—What drainage?
5445. Well, to the study of sanitation or hygiene?—No; I cannot say that I have.
5446. Have you taken the trouble to inquire how many beds, according to the number of patients, these wards should contain?—No.
5447. Then, you do not know how many they should contain?—No.
5448. Though you do not know how many they do contain or should contain, you say that the wards are not overcrowded?—So far as I know, they are not.
5449. But on what basis do you form that opinion?—On what I have seen in other hospitals.
5450. Have you ever read how much floor-space a patient ought to have?—I think so.
5451. How much space clear should there be between the beds?—I do not know; I have not measured it.
5452. About how much?—I cannot say positively.
5453. Suppose I tell you that persons who have studied this question tell us that wards which contain fifteen patients should certainly not contain more than eight: what do you say to that; are you prepared to contradict them?—I do not know.
5454. Do you know anything about it?—No. I am not an expert on these matters, and I have not posed as one either.
5455. On what basis do you form your opinion as to the number of beds?—I have already told you that I judge by what I have seen in other hospitals.
5456. How long is it since you saw the last hospital, other than Dunedin?—In July last.
5457. What hospital did you see then?—The Nelson Hospital.
5458. Are the beds close there?—I think so.
5459. Did you find them so in the Christchurch Hospital?—It was upwards of five years ago since I saw that Hospital.
5460. How did you find it then?—The beds were just as close as they are in the Dunedin Hospital now.

Mr. Nathaniel Y. A. Wales sworn and examined.

Witness: I am an architect practising in Dunedin. I have been practising here for about twenty years.
5461. *Mr. Chapman.*] Have you acted in connection with the Hospital?—Yes, I have.
5462. For how long?—Occasionally; about 1876 and 1877, I think, was the first time. I have had nothing to do with it since it became a Hospital. We were employed then to make several alterations in the building.
5463. *The Chairman.*] But you have a much earlier knowledge of the building?—Yes.
5464. You were with Messrs Clayton and Mason?—Yes.
5465. You were clerk of works?—I was constantly at the work, but Mr. Mathews was clerk of works. I was in the office, but I had occasion to be at the work almost all the time it was going on.
5466. That was in 1864?—Yes. It was in 1876 or so that we were required to make alterations.
5467. *Mr. Chapman.*] Had you anything to do with the original alterations when it was fitted up as a Hospital?—No, not when the patients were first removed into it.
5468. Now, there are various matters on which the Commissioners wish you to supply them with information. If you have a note of the different matters you have been asked to direct your attention to perhaps you will just mention them?—I scarcely know in what order to take them.

5469. Have you a plan?—I have a rough plan. I have not the original plans. They were taken away by Mr. Clayton, and I do not know what has become of them. They ought to be somewhere in Wellington.

The Chairman: They will be in the Public Works Office.

Witness: I tried to get a number of plans, but I could not. [Plans produced: Exhibit lv.]

5470. *Mr. Chapman.*] Have you recently examined the building?—I have not been through all the wards, but I have been in two of them—No. 2 and No. 7.

5471. *The Chairman.*] But the building generally?—I have been round and examined the drains and waterclosets.

5472. *Mr. Chapman.*] You have made a professional examination of the building?—Yes; and I have also looked at the state of the roof.

5473. *The Chairman.*] We had better take the different parts of the building, beginning with the roof. What state is it in?—The roof-timbers are sound. Many of the slates are broken, but there are no leaks, so it is just as well to let the roof alone. The chimneys and parapets are rather shaky in places; the cement work is crumbling away—has been, in fact.

5474. To a dangerous extent?—Well, it can scarcely be called dangerous as yet.

5475. Will it damage the walls?—It deteriorates the building and allows the damp to penetrate the brickwork.

5476. Well, it is dangerous to the state of the building. The object of the cement is to keep out the damp?—These are repairs that should be attended to if it remains as a hospital.

5477. *Mr. Chapman.*] Should they be attended to at once?—During the summer.

5478. Did you pay particular attention to the abutments of the beams of the main supports of the roof?—Yes; they are quite sound. I examined these about two years or eighteen months ago, and they were quite sound then; I reported so to the Trustees. The bottom rails of the skylights round the main building have decayed.

5479. From the damp resting on them?—Yes.

5480. *The Chairman.*] What are the defects in the plumbing?—There were men on the roof when I was down lately. They are constantly repairing parts of the ridging. The ridging is very much corroded, and should be renewed all over. It is galvanized-iron ridging, I think.

5481. And the gutters?—They are in a fair state of repair. Some parts of them might be repaired, but there is no leaking. They are old, and should be renewed before long. Since the building was erected in 1864 the gutters have been renewed, except in certain parts.

5482. *Mr. Chapman.*] What kind of gutters are they?—Lead; and they are pretty substantial. I think 6lb. lead was put in the ridging.

5483. *The Chairman.*] We have heard of a kind of wooden trunks or drains that are carried over the ceilings of the upper wards?—Yes.

5484. Can you describe them?—Yes. They are wooden boxes or troughs carried over the ceilings of the upper wards, one over each ward, leading the water from the centre gutters to the outside. Their position is nearly over the centre of the wards, close to the man-holes.

5485. Are these kept open or shut?—They are open on the top, and are lined on the inside with lead—that is to say, the bottom and two sides. I did not examine the lead, and I cannot say whether it is corroded.

5486. Was there any sludge or stuff in these troughs?—There was a little. There might have been from half an inch to an inch.

5487. Was it wet?—It was.

5488. And offensive?—No; I did not smell anything.

5489. Did it seem as if it had been at any time higher up on the sides? Was there a skin?—There was a slight skin.

5490. That was dry, of course?—Partly dry.

5491. *Mr. Chapman.*] Have these troughs a fall?—They have a slight fall.

5492. *The Chairman.*] Is there sufficient fall?—They carry off the water.

5493. But do not keep themselves clean?—No; and they would not even if there was a great fall. No spouting in a horizontal or nearly horizontal position is clean, but has to be cleaned out periodically.

5494. Is that done?—I do not know. I think it must be, because, if it was not, they would become almost filled in time.

5495. *Mr. Chapman.*] Are these man-holes closed?—They are.

5496. Does the air rise to them, or under any circumstances can it come down?—It both rises and comes down, according to the state of the atmosphere outside. On the day I examined it the current was outwards—a pretty strong current, too.

5497. And you are aware of it sometimes reversing?—Yes.

5498. Is there any considerable opening for the ingress and egress?—Not much. I think it is about 6in. by 4in.

5499. Smaller than the trunk?—I think it is about the size of the trunks. I did not measure them. The two ends are the same size, and they will be parallel through.

5500. There will be an aperture for air of a smaller size?—Yes, at both ends of the trunk.

5501. *The Chairman.*] What about the drains, beginning with the soil-drains—that is, the drains connecting with the wards? What is the method of carrying off the soil?—There is a closet in each of the corner towers, and a 4in. soil-pipe leads the soil from the closets down to the cellar, and is then connected with a drain outside. The upper part of this soil-pipe is of galvanised iron of the same size. The pipe is continued up to the lead gutters on the roof, and takes the roof-water away.

5502. *Mr. Chapman.*] Is that the form of the closet [plan produced]?—Yes. Some are Unitas, and some are Jennings's. A connects with the soil; B, I think, is closed, but I am not sure; C is the inlet where the water-supply comes in.

5503. *The Chairman.*] What is it connected with?—In the case of No. 7 it is closed up. I think some of the other wards are opened, and the ventilators carried up from them.

5504. So that B and D, the two ventilators supplied by the inventor, are closed?—Yes.

5505. *Mr. Chapman.*] In what way?—Blocked up with the cement.

5506. Would that be in accordance with the theory of the inventor of the working for such closets?—No. The pipes should have been continued from these; but I may say that probably whoever put that closet in, knowing of the window-opening in the closet, and also of the ventilator in the ceiling—about 6in. in diameter—imagined that was sufficient.

5507. He would look on the window and the ventilator as a substitute?—It could hardly be called a substitute, because the ventilator would only take foul air from the room, but this is intended to take foul air from the ventilator. The person putting them in, however, might suppose they would answer all purposes.

5508. *The Chairman.*] That is an error, and opposed to the inventor's intentions?—That is so.

5509. The closet cannot be properly ventilated?—No. The closet-room is ventilated by a window and a ceiling-ventilator, which comes out into the floor of the tower.

5510. But in the tower ward?—I am not sure, but I think it is carried outside.

5511. *Mr. Chapman.*] Is it that little corner turret you mean?—Yes.

5512. *Mr. Chapman.*] We have used the towers in another sense.

5513. *The Chairman.*] Can you describe the condition of the flushing of the tanks? Does a certain amount of water descend in a given time, in accordance with the instructions of the inventor?—The flushing-tanks are rather over than under; it is an excellent flush, and will wash everything away.

5514. Have you ever happened to be examining any of the closets during a heavy fall of rain?—No, I have not.

5515. Have you heard anything to lead you to believe that a heavy downpour of water from the roof would siphon-out that closet if the ventilator is closed?—Well, practically it is not possible.

5516. Why?—Because the quantity of the rainfall, unless something abnormal, would not fill the pipe, and it is hardly possible to fill it in the way it is connected with the gutter. In hydraulics, to get a pipe full, it is necessary to exclude the air at the top. [Witness explained the plan.]

5517. *Mr. Chapman.*] Have you inspected the Seacliff arrangements of a similar kind?—No, I have not. It would require a rainfall of at least 12in. in the hour to fill one of these pipes.

5518. If they were flowing free?—Yes; at the recognised quantity they would take 400 gallons a minute.

5519. But how much would fill the pipe from top to bottom if it was temporarily plugged at the bottom?—About 17 gallons, I think; but it could not be practically temporarily plugged. In theory it might be, but it is a thing that might not occur in a hundred years in practice.

5520. *The Chairman.*] What traps are these? Leaving the closet, what traps do you meet? There is a closet-trap, is there not?—Yes, going to the drains.

5521. Is there no trap between that and the next closet?—No, it is a straight pipe.

5522. Then No. 2 closet?—No. 2 closet is closed, and connects with the straight pipe.

5523. What is the angle at which the pipe turns at the bottom?—They are of the round turn, not the straight turn.

5524. Is it a quarter-bend?—I think it is.

5525. And that leads with a length of what?—I do not know how far it is. It may be 6ft. or 10ft.; probably, 6ft. or 8ft.

5526. With a fall of?—Well, that fall also varies. I am not sure about it.

5527. *Mr. Chapman.*] What is the size of the pipe?—4in. It goes into the 6in. pipe.

5528. Where?—On the outside of the building.

5529. But we have not got to that?—Well, the next trap is at the bottom of the pipe in the cellar.

5530. Do you consider that satisfactory?—No; I would have another shaft from the main sewer with a slight fall and a right-angle bend where it enters the 6in. drain-pipe that connects the ventilator, which goes right up above the turret-flue. It comes from the grating side of the grease-trap, and goes up to the turret-roof.

5531. No ventilation is provided for the drain side of the trap?—No, not there.

5532. Then, you say this is not satisfactory?—No, that is not satisfactory.

5533. Could you give us information about other connections from the ward—lavatories and baths?—The waste-pipe from the lavatories and sink and baths are connected with the soil-pipe. [Plans examined and explained.] I have tested the pipes, and found they did not siphon. Dr. Truby King, Dr. Maunsell, and Dr. Jeffcoat were present, and Dr. Truby King superintended the work.

5534. But you think that under certain circumstances they might siphon?—Yes, it is possible.

5535. You say they have no ventilators from two sides of the trap, which they should have?—That is so.

5536. Is that a defect?—It is a defect.

5537. Important?—Well, it is and it is not. It is more a theoretical defect than a practica one, because the water never fills the pipe practically.

5538. But even if they do not siphon out, is it not defective plumbing to have, practically, a soil-pipe without ventilation?—It is a defect, no doubt, but it is just a question of cost.

5539. The only ventilation of the connections with the lavatories, sink, and bath is through the aperture through which the water runs away?—Yes, and through the grating with which the water-pipe is connected.

5540. Then, as to the ventilation with the sewer itself—that is, the sewers beyond the stench-trap to the main sewer?—Yes; there are three of these stench-traps connecting with the main sewer in Cumberland Street.

5541. *The Chairman.*] Did you go on the roof and examine the top of that ventilator from the stench-pipe?—Yes.

5542. Did you examine the outlet?—Yes; it has what is called a cap or a bonnet on it.

5543. There are four of them?—Yes, there are four, and they are quite open.

5544. Was there any smell?—No.

5545. Was it not acting?—Yes; I lit a match and put it alongside and the flame tended away from it. There was not much draught as it was a particularly calm day, but there was a slight current of air coming out of it.

5546. But it had no smell?—No; I could not smell anything, and I am pretty cute of a smell.

5547. How do you account for the absence of smell?—It shows that the drains are well ventilated, I think, and probably by the time we are finished an explanation will be given of it.

5548. That it is not connected with the drains, do you mean?—It is connected.

5549. *Mr. Chapman.*] When we left off your examination we had got through the inside drainage-arrangements: do you know where the gullet-trap connected with No. 7 drains to?—Into the King Street sewer.

5550. By means of what?—A 9in. pipe, I think.

5551. Do you know where the sewage flows to?—Towards Hanover Street sewer, I think, but I will examine the sewers plan and make sure of that.

5552. Do you know how the outfall from the Hospital is ventilated?—I am not sure about that.

5553. But it is ventilated on the Hospital side of the gullet-trap, is it not?—Yes.

5554. And the other side of the gullet-trap leads into—what?—Cumberland Street. I think it is a 3in. by 2in. pipe, and I think the outfall goes away to the north-east corner.

5555. Where is the outfall of the 9in. pipe?—I think it is towards Hanover Street, but I am not sure of that either. The sewage flows into the harbour. The contents run into the harbour at the foot of Hanover Street, whence it flows from the reclaimed land into the harbour. This part of the sewer is open, and the surroundings are certainly unsatisfactory. In connection with the sewers, there are gratings opening into the channels of the streets, but I do not know whether they are trapped or not. Certainly these gratings are not so good as ventilators. There are two ventilators within the Hospital grounds, from a 9in. pipe that leads into the main drain. I do not know that these ventilators are the best plan that could be adopted, but I think they are sufficient for the purpose. I saw the linoleum lifted from the floors, and I think that the boards are in a sound state. There were no signs as far as I noticed of dry-rot in the timbers. The best way to improve the floors would be to lift them and lay down new flooring. Possibly cement might be used for filling up the joints, but probably that would cost as much as would put down a new floor. A cheaper method would certainly be putting down an asphalt cover all over the floor, but I do not know how the medical gentlemen would like that, though the asphalt could be finished off very smoothly. The walls in Nos. 1 and 2 wards have been cemented, finished off very nice and smoothly, and painted; and I think that all the walls should be treated in a similar way. I also think that all the walls should be made non-absorbent. The ceilings should be similarly treated. They have been plastered in the meantime.

5556. You have taken out a number of measurements, have you not?—Yes.

5557. Well, we will take the lower wards first?—In the lower wards I found that as nearly as possible a cubic space of 66ft. is given, not taking in the timber of the windows.

5558. And in the upper wards?—I measured in the same manner there, and found that 111 cubic feet of space is given.

5559. Do you know what the authorities say is the proper proportion?—1 in 50 to 60.

5560. Now, about the ventilation?—The ventilation of the lower wards is obtained by openings in the windows. There are at least seven of them in the lower part of the window and there are three openings in the upper part. If I remember rightly, there is in addition a circular ventilator opening into a flue which comes from the fireplace. The whole of the heating of the Hospital is done by means of steam-pipes. I made calculations as to the amount of air—supposing that the lower parts of the windows were taken as inlets—and the velocity at which the air would enter the wards, and found that it would enter at the rate of 1½ft. per second per patient, which is laid down by the authorities as a safe rate. Anything under 5ft. might be called free from draught. [Witness here explained the effect of his calculations as to inlets and outlets for air-supply.]

5561. In answer to the Chairman, witness said that prior to 1876 the kitchen was in one of the annexes at the rear of the main building. The boiler in the basement was at present in very fair order. The fumes from the coal that was used might have opened a few joints lately and affected the iron roofing to some extent. Last year a little over £30 was expended in renewing the greater part of the roofing of the southern tower. The drains from the kitchen, as far as witness recollected, were led into the original drain, which was carried from the building to the corner of Hanover Street. This drain was not used for sewage purposes, nor did it take the down-water from the roof; the roof-water went into the soil-pipes. In this kitchen-drain there is a grease-trap about 30ft. away from the main building, and there is a grating over that. This grating is on the Hospital side of the trap. Witness also thought that there was a trap in the kitchen, or just outside of the kitchen. There were sink-traps, but these were not ventilated in the sense of the ventilators that had been already spoken of. There was, however, a ventilator leading up from the outside pipe, between the grease-trap and the kitchen. So far as witness knew, there was no ventilator in the kitchen. The pipes from the washhand basins in the operating-room discharge

into the open air, and the matter falls into the gulley-traps, and if there were any contamination it might enter the kitchen by means of the open windows. The traps were nearly 30ft. away from the kitchen, and there was always a good deal of water in these traps. The washhand basins, but not the sinks, in the operating-room had traps on the gratings.

5562. *By Mr. White.*] Witness had measured the lower wards and found them to be 53ft. 9in. by 24ft. 9in., and 16ft. 2½in. high; but the tower area had to be deducted from that measurement. Dividing the total cubic space of the No. 7 ward—21,168ft.—among fifteen patients, it will give an average of 1,411·2 cubic feet per patient. The superficial area of the lower wards, deducting the area of the corner tower, the lavatories, &c., leaves nearly 79ft. per patient. The upper wards are a little larger, the walls being a little longer, the dimensions being, length, 54ft. 10½in. by 25ft. 2in., and 14ft. 11in. in height. Taking away the corner tower, &c., from this leaves a cubic space of 20,189ft. No. 7 ward, when witness examined it, had fifteen patients in it, but he understood there had been sixteen persons in it. He had, however, divided the total by fifteen, which gave 1,346 cubic feet per patient, while the superficial area was 82ft. per patient. That was also deducting the bath-room. But if he divided the total by sixteen, the cubic space was 1,262ft. per patient, and the square space 76½ft. per patient. He had also measured the bed-space of No. 7 ward. He had it as having fifteen patients—nine on the window side and six on the other side—that was three on each side of the fireplace. The beds ranged along the side where the windows were measured nearly 2ft. 8¾in., while the space between the beds was 3ft. 1½in., which together gave 5ft. 10¼in. as the bed-space. On the other side—one side of the fireplace they were nearer than the other—there would be 4ft. between the beds, making the actual bed-space on that side 6ft. 9in. But on the right-hand side the distance between the beds was 5ft. 2in., which would give 7ft. 10in. as the actual bed-space. This latter space affected three beds. Witness did not measure the beds in any of the other wards. Witness's figures were taken entirely independently. Witness had been in the employ of Messrs. Mason and Clayton when the Exhibition building was built. It was originally built for a market, and there was an idea at one time of using it for colonial purposes. The site was originally very marshy—what might be called a flax-swamp. There was considerable difficulty about the drainage at the time—about getting a proper fall. The ground was always more or less covered with water. There was a fall in the ground towards the western side. There was a good deal of filling-in done, but he did not think it was done with rubbish. The stuff was brought from Bell Hill. The rest of the filling-in stuff was obtained from sections in the town and partly from off the streets, and to the best of witness's recollection it was good soil. The foundations were carried down to the gravel. There had never been any subsidence of the ground; he had never noticed settlement anywhere. In putting down the foundations for the operating-theatre they had in some places to go 4ft. below the surface, or on the average 3ft.; perhaps it would be better to say from 3ft. to 4ft. all round. Under the gravel they got some black moss which they took out. The foundation of the operating-theatre was not as deep as that of the main building. Probably 5ft. would reach the gravel, but 4ft. would give a fair foundation.

Mrs. Janet Burton sworn and examined.

5563. *Mr. Chapman.*] What is your occupation?—I am matron of the Dunedin Hospital.

5564. For how long have you been matron?—For about twelve years.

5565. Have you been in the Hospital for more than twelve years?—I have been twenty years in the coming November.

5566. Previously what position did you occupy?—I was housekeeper after my husband died.

5567. Do you remember a patient named Mrs. T——?—I do.

5568. When was she in the Hospital?—In the month of June, I think.

5569. She was operated on on the 20th May. Do you remember what happened to her?—I was not present at the operation, but I saw her two or three hours afterwards.

5570. Where?—In the ward.

5571. Which ward?—The special ward, No. 5.

5572. What did you find?—I found her very pale, and when I went in I remarked on her appearance, and the nurse said that she had observed the same thing. The patient said that she was cold. I felt both her hands, which she had had outside the blankets, and saw that her arms and legs were rolled in blankets and cotton wadding. I did not see any bleeding then, but when I went back shortly afterwards the nurse had found that the woman had been bleeding. Drs. Maunsell and Copland were there.

5573. *The Chairman.*] When you went back?—Yes. I asked Dr. Maunsell how it was that the patient had been bleeding in that way, and he said that she had been bleeding in the operating-room. I saw her occasionally before bedtime. The doctors had been to see her several times. I saw her next morning at 7 o'clock, and I saw her when she died.

5574. *Mr. Chapman.*] What was it that Dr. Maunsell said?—He was coming downstairs as I was going up, and I asked him what was the cause of the bleeding, and he said that she had been bleeding in the operating-room.

5575. Are you in charge of the nursing department of the Hospital?—I am one of the female nurses, and have done a great deal of nursing, under the whole of the surgeons, since I have held my position.

5576. Who are the nurses who nurse Dr. Batchelor's patients?—Sometimes they vary.

5577. Male or female?—Sometimes the one, and sometimes the other.

5578. Mostly female ones, I suppose?—Yes.

5579. Have you had any complaints about the nursing-staff?—Never; not in the female department.

5580. Have you ever had any complaints about the nursing itself?—Never.
5581. You never heard of any complaints?—Never to me.
5582. Do you visit the wards at different times?—Yes, I do.
5583. Day and night?—Yes.
5584. At different times during the day and night?—I have not done so much night-work lately, but before we had so many nurses I used to be in the ward often.
5585. Were the nurses increased last year?—Yes. Three or four years ago we took on a number of probationers.
5586. What was the state of the wards when you visited them?—I never felt anything bad in them, and I have been in them late and early.
5587. You never found anything to complain of?—Never.
5588. That is, in the way of ventilation?—Yes.
5589. Do you visit the closets?—Yes. I never could find any complaints against the closets; they were always kept clean.
5590. Was there any offensive smell from them?—No.
5591. Did you find the wards stuffy?—No.
5592. Not stuffy in the mornings?—No.
5593. *Mr. Solomon.*] You have been continually in and out of the wards, and say that you never noticed anything stuffy?—Not in the female department.
5594. What are we to understand by the evidence of the witnesses who have been called on behalf of the Trustees, and who say that they found the wards both close and stuffy?—That was not so in the female wards.
5595. That was the state in which they found the wards in the Hospital. You cannot understand it then?—I cannot.
5596. What do you say to a gentleman saying that he found an hour's work in the Hospital more fatiguing than a whole day's work outside, in consequence of the stuffy state of the wards of the Hospital?—I can only say that it is not so in my own department.
5597. Do you think, then, that it might happen in the male wards?—I do not visit the male wards.
5598. Do you know No. 3 ward?—I have taken visitors into the male wards.
5599. Did you notice any offensive smell about that ward?—I did not.
5600. Was there ever anything that reminded you of dead rats?—No; but there was a smell of burnt smoke.
5601. Where did that come from?—The kitchen.
5602. Was that common?—I do not know.
5603. Have you noticed that often?—Occasionally.
5604. Did you notice any smell in the female wards?—There is a little, very little. On a stormy day you cannot have the windows open.
5605. On a stormy night there would be a danger in having the windows open?—They are always a little open.
5606. Does that make any difference?—I do not know.
5607. If you got into the ward in the early morning, and the windows have been shut up all night, would not the ward be stuffy?—I have been in the ward early in the morning but never felt any stuffiness.
5608. Then, you cannot agree with Dr. Colquhoun on this subject?—I noticed that one of the doctors stated that the night-nurses neglect their patients. I deny that altogether. I suppose I am included among the nurses.
5609. I suppose you cannot find any fault with this Hospital?—What I have to say is that I have faithful nurses. I have been in the ward at 12 o'clock at night, and even later, and I have always found the nurses attentive to their duties.
5610. *The Chairman.*] Do you live and sleep in the Hospital?—Yes.

MARY ELLEN FRASER sworn and examined.

5611. *Mr. Chapman.*] What is your occupation?—I am a nurse.
5612. In the Dunedin Hospital?—Yes.
5613. For how long have you been a nurse?—Two years and nine months.
5614. Are you a certificated nurse?—Yes.
5615. *The Chairman.*] Were you a probationer in the Hospital?—Yes.
5616. Is that included in your two years and nine months?—Yes.
5617. Then you got your certificate about a year ago?—Yes.
5618. *Mr. Chapman.*] Were you nursing in No. 7 ward in July?—No.
5619. In June?—Yes.
5620. Do you remember one of Dr. Batchelor's cases being under your care?—Yes. I had several.
5621. Had you Mrs. T——?—Yes, until just before her operation.
5622. Mrs. B——?—Yes.
5623. Mrs. A——?—Yes.
5624. Mrs. S——?—Yes.
5625. Mrs. S——?—No. I was not in the ward when Mrs. S—— was there. One of the nurses was laid up, and I was nurse in charge of the children's ward.
5626. Do you remember K. W—— being in No. 7 ward?—Yes.
5627. Do you remember anything special about her temperature?—She had a temperature that was very much up when I came down one morning. She had been brought from No. 8.
5628. Did Dr. Batchelor speak about her in any way?—One morning, while Dr. Batchelor was visiting the ward, he said that Mrs. B—— wanted extra light, and asked that she should be moved

into Mrs. A——'s corner. I was moving her bed, and while I was so engaged Dr. Batchelor looked at K. W——'s chart, and remarked: "What is the matter with that, nurse? I hope it is not a septic case." I replied that it was a heart case, and he said, "Oh, in that case it is all right;" and he allowed me to remove the bed.

5629. Was Mrs. S—— in the ward at that time?—No.

5630. Do you remember a patient named A. D——?—Yes.

5631. Do you remember what was the matter with her?—Yes.

5632. She was near the other patient?—Yes.

5633. Had she ever complained of the draughts there?—Well, there is always more or less of a draught there in that ward.

5634. That is at the door?—Yes.

5635. Do you mean when the door is open or when it is shut?—There is a draught both from the door and the window, but it depends on the wind. If the wind comes in from the front of the ward we must close the windows there, and open the end windows. We have to use our own judgment about opening and closing these windows. If we find a draught coming from one window we must close that window and try another one.

5636. *The Chairman.*] Do you ever have to close the whole of the windows?—I have never seen all the windows closed, though perhaps they may be with the exception of a few inches.

5637. You say that they have never all been closed?—I have not seen them all closed.

5638. *Mr. Chapman.*] I suppose you have been in the ward night and day?—I have been in the ward both night and day, but I have never closed them all.

5639. *The Chairman.*] Are you always on the same duty night and day?—I am nearly always on day-duty.

5640. But you have also been on night-duty?—Yes; I was on night-duty for six months.

5641. When do you come on in the mornings?—At 6 o'clock.

5642. How did you find the wards when you came on duty in the mornings?—I have always found them very fresh.

5643. *Mr. Solomon.*] Did you never find these wards close or unpleasant?—Never.

5644. We have been told by a number of doctors that during winter the atmosphere of the wards is frequently found to be close and oppressive. Have you ever experienced that?—None of the patients ever complained of it to me.

5645. Have you never experienced it yourself?—Never.

5646. Have you never had to keep the windows closed in cold weather?—I never keep them closed.

5647. Have you found considerable difficulty in keeping them open in stormy weather?—You do not open them quite so much; still, they are kept open.

5648. Still, you say, you keep them closed all except a few inches?—Of course, if it were windy some air would come in.

5649. Can you agree with the condition that Dr. Colquhoun found, who has told us that he found the atmosphere so oppressive that an hour's work in the Hospital fatigued him more than a whole day's work outside, in consequence of the ward being close?—Well, I have worked in the wards for twelve and sometimes sixteen hours a day, and I do not think that they were either close or oppressive. Coming in from the outside you would probably experience the smell of tow or iodoform, but that is about all that you would notice.

5650. Then, how can you account for such a statement?—All I can account for is my own statement.

5651. Can you understand how a man continually about the place could notice the wards being close and stuffy?—No; if he wished to speak the truth.

CAROLINE SHAW sworn and examined.

5652. *Mr. Chapman.*] What are you?—A nurse.

5653. In the Dunedin Hospital?—Yes.

5654. How long have you been there?—Four years on the 2nd February next.

5655. Doing day and night duty?—I was on night-duty for two years and nine months.

5656. You are on day-duty now?—Yes.

5657. Do you remember Mrs. S——?—No.

5658. Do you remember Mrs. T——?—Yes.

5659. Were you present at the operation on her?—Yes.

5660. Were you present at the whole of the operation?—Yes.

5661. Do you remember the sound being applied?—Yes.

5662. Was there anything about it that struck you as being special?—Yes.

5663. What was it?—It was about the tube. Just before the dressing was going on Dr. Batchelor said to Dr. Maunsell, "By Jove! its filling." Then I was asked to get a sponge, and cut it into four pieces. I put the pieces of sponge in perchloride and water in a small basin, and they were used in absorbing the blood from the tube. That is all I had to do with it.

5664. *The Chairman.*] The tube was in the wound?—Yes. It was all ready for the dressing when the blood was seen.

5665. *Mr. Chapman.*] Did you see the sponges used?—Two pieces.

5666. For what?—Absorbing the blood from the tube.

5667. *The Chairman.*] From around the tube?—No, from inside the tube. Of course, only the upper part of the tube was to be seen, and that part was full of blood.

5668. The sponge absorbed the blood, and the tube refilled with blood? You saw that?—Yes.

5669. *Mr. Chapman.*] Did the supplying of the sponges end your connection with the matter?—Yes.

5670. You are in the wards necessarily at all hours of the day and night?—In the day.
5671. How are the wards ventilated?—By the windows.
5672. Is it your duty to attend to these windows?—Yes.
5673. You see that the ward is kept properly ventilated?—Yes; I always endeavour to do that.
5674. *The Chairman.*] Do the patients complain of the windows, or wish to have them closed?—Yes, at times they do. If a patient says there is a draught from such a window, I will close that window and open another.
5675. *Mr. Chapman.*] When you have gone into the wards in the early morning, have you found them close?—No.
5676. Dr. Batchelor has told us that he found one ward so close one morning that it made him retch. Did you ever find the wards in such a state?—No; nor did I ever feel anything like that.
5677. You have told us that you have been a nurse for four years in February next: how long have you been off duty during that time?—Three weeks and two days.
5678. What was the cause of your being off duty?—When I had been here three months I was ill for about three weeks.
5679. Were you ill when the influenza was about?—I had a cold for a few days.
5680. Do you get any holidays during the year?—A fortnight.
5681. *The Chairman.*] Are you including the holidays in your answer?—Not in the three weeks that I was off duty through being sick.
5682. *Mr. Solomon.*] About Mrs. T——'s operation: had you ever been at an operation of that sort before? I mean at an abdominal operation in which a drainage-tube was used?—Yes.
5683. You say that the tube had been inserted, and the patient was ready to be dressed, when Dr. Batchelor remarked that the tube was filling. Did you see that it was filling?—Yes.
5684. Then the doctors asked you to give them sponges?—One of them did.
5685. Which one?—Dr. Maunsell.
5686. And two quarters were used for the absorption of the blood?—Yes.
5687. Did you remain until the patient was dressed?—Yes.
5688. Then the other two pieces of sponge were not used?—No.
5689. You say that you have not noticed the wards too close?—I have not.
5690. Never?—They may have been close occasionally, but then I would open an extra window. But they have never been so close as to make one feel uncomfortable in them.
5691. Sometimes when you have gone into the ward, have you not noticed yourself the atmosphere close, and have had to open a window or two?—I do not think so.
5692. You have just told us that when you found it close you opened an extra window?—That was about 5 o'clock in the evening.
5693. In stormy weather?—No, in mild weather. Sometimes it is very warm in the evenings, and then you have to open more windows. There is not always the same temperature in the wards.
5694. Have you ever noticed the state of the wards in the early morning?—Yes.
5695. Have you always found them fresh?—Yes. And for two years and nine months I was in them from 6 in the evening till 6 next morning.
5696. And you declare that you never noticed that the wards were stuffy?—Never.
5697. Then, according to you, it would be an exaggeration to say that an hour's work in a ward was more fatiguing than a day's work outside the Hospital?—Well, I have had a great deal more than an hour's work there, and I have never felt the slightest fatigue.
5698. Well, that is Dr. Colquhoun's experience?—Then it is according to how he exerted himself.
5699. I mean from the unpleasant nature of the atmosphere of the ward?—I do not know how long he remains in the ward. If he said that, I do not know how he managed it.

MARY WAYMOUTH sworn and examined.

5700. *Mr. Chapman.*] You are a nurse in the Dunedin Hospital?—Yes.
5701. How long have you been there?—Eighteen months. I am certificated by the St. John's Ambulance Society, and received my certificate before I went to the Hospital.
5702. Do you remember Mrs. T——'s case?—I remember the operation.
5703. Were you present at it?—Yes.
5704. What were you doing?—Waiting on the doctors.
5705. Throughout the operation?—Yes.
5706. Did you see the bleeding?—Yes.
5707. Did you hear what nurse Shaw said just now?—Yes.
5708. Did you see what was done?—I heard the words.
5709. What words?—What Dr. Batchelor said.
5710. What were his words?—"By Jove, Maunsell, it's filling!"
5711. Did you hear anything else that was said?—Dr. Batchelor said that he would put the dressings on and "chance it."
5712. Did you see the dressings put on?—Yes.
5713. Did you see the tube yourself?—Yes.
5714. What did you see done with it?—They just took the blood out of it. It was empty for a moment.
5715. *The Chairman.*] When the dressing was put on, the blood had just been removed from the tube?—Yes.
5716. Did you put the dressing on yourself?—No.

5717. Who did?—I think one of the doctors did, but I am not sure.
5718. What happened after that? Did you continue to attend on Mrs. T—— ?—Yes; I went upstairs with her, but I have had nothing to do with her since.
5719. Who has been attending her?—Nurse Monson.
5720. When did you go into the ward again?—At 6 o'clock the next morning.
5721. What did you find then?—That there was a great commotion.
5722. Who were there?—Drs. Copland and Maunsell and Nurse Monson.
5723. Anyone else?—Not that I remember. Mrs. Burton came into the room afterwards.
5724. What was done to the patient?—Dr. Copland dressed her wound again.
5725. Did Dr. Batchelor come again?—He came later on.
5726. Was there a further operation?—Yes.
5727. Were you there then?—I was.
5728. Was there any trouble about the water, or about anything of that sort?—There was plenty of hot water available.
5729. Had any special arrangements been made for obtaining hot water?—Yes. We kept the steam-boiler full of hot water, and we had a can of hot water besides. Hot water was also kept in No. 8 tower ward, and we had only to run there for it.
5730. That is the adjoining ward to where the woman lay?—Yes.
5731. *Mr. Solomon.*] How was the blood removed from the tube during the operation on Mrs. T——?—There was no tube in during the operation.
5732. After the operation then?—By means of the sponges. They were put into the tube, and absorbed the blood.
5733. When you saw it, was the tube quite empty?—As far as I could see, it was.
5734. How long was it from the time that the sponges were used before the patient was wrapped up?—Before the dressing was completed?
5735. Yes?—Just immediately.
5736. Was there no waiting to see if the tube had filled up again?—Not that I am aware of.
5737. Can you say that it was not so?—Not that I am aware of.
5738. Was it spoken about?—Not that I am aware of.
5739. Do you not know that that is the very object for which these pieces of sponge are used?—Yes.
5740. Do you not know that when a tube is put in almost invariably some blood comes into the tube immediately after the operation?—But not so quickly as it did on that occasion.
5741. Do you not know that in an abdominal operation of that sort blood always does come into the tube?—But here the tube was full of blood.
5742. Do you not know that the reason for using the sponges was to absorb the blood which necessarily came into the drainage-tube; that a few minutes are allowed to elapse before dressing in order to see whether the tube would fill again; and that if not the patient is dressed? Do you know whether the tube filled again?—Yes, it had filled again.
5743. How do you know that?—I saw it.
5744. But you told me only a moment ago that the blood was removed from the tube and the patient was dressed?—Yes, but you could see the blood rising again in the tube.
5745. I want you to tell us which is correct. I understood you to say, in answer to Mr. Chapman, that the tube was filled with blood, and that two pieces of sponge were used to absorb that blood, and by that means the blood in the tube was emptied; that no time was allowed to see whether the tube was filled again, but that the patient was immediately dressed. Now you tell us that the tube welled up again?—But the tube was twice emptied.
5746. Tell us what condition it was in when both the pieces of sponge had been used?—I do not remember.
5747. When the patient was dressed was there any blood in the tube?—It had just been soaked away out.
5748. Was there any in it at the time?—Not that I saw.
5749. *The Chairman.*] The dressing was not removed?—Not in the operating-room.
5750. *Mr. Solomon.*] You say that after the sponges were used the tube filled up again with blood. Are you sure of that?—Yes.
5751. Are you quite sure?—As far as I remember, it did.
5752. "If I remember." Is that what you intended to say?—Yes.
5753. What time elapsed from the time that blood was first absorbed out of the tube until the tube filled up again?—I cannot remember.
5754. How long did the patient lay there while the tube was being sponged out?—I do not know.
5755. You have told us that Dr. Batchelor, when putting on the dressing, said that he would "chance it." Was that said after the first or the second bleeding?—After the second bleeding.
5756. I ask you again: what time elapsed from the time that the drainage-tube was sponged out a second time until the wound was dressed? How long did they wait?—I do not know.
5757. Was it half a minute, or a minute, or two minutes?—I do not know.
5758. May they have waited five minutes?—Perhaps they did.
5759. But when the wound was dressed the last time there was no blood in the tube?—Yes.
5760. *Mr. White.*] Were you present at the operation on Mrs. S——?—Yes.
5761. Did you prepare her for the operation?—Yes.
5762. Were you the nurse in charge of that case?—Yes.
5763. *The Chairman.*] She was in No. 7 ward, was she not?—Yes.
5764. *Mr. Chapman.*] Do you keep the temperature charts of the patients?—Yes, I take them sometimes.

5765. Do you know if you took Mrs. S——'s?—Yes.
5766. Some doubt has been cast on this chart. Is it in the state it was when you took it?—Yes.
5767. Do you remember when you took it?—I always take them before 9 o'clock in the morning—I will not be quite sure of the time—and before 6 o'clock at night.
5768. Was that chart taken at the time it is there stated to have been taken?—Yes.
5769. And taken on that day?—Yes.
5770. Are you sure of that?—Yes.
5771. You took the temperature of the patient, and wrote it down on the chart at once?—Yes.
5772. *The Chairman.*] You say you marked it down at once?—Yes.
5773. Can you recollect marking it down on this [second chart handed to witness]? You will see, on looking at them, that there is a little confusion. Do you know where the confusion began?—I notice it, but cannot say where it began.
5774. I understand that it is not suggested that more than two observations of Mrs. S——'s temperature were made within the twenty-four hours. Is it possible that an error may have taken place in filling up the spaces?—Yes, it is possible.
5775. Do you observe that the temperature, instead of falling in the morning, as is the usual rule, and rising in the evening, is lower that evening. Could that be a mistake?—Yes.
5776. How do you think it arose?—I cannot tell.
5777. Which chart did you fill up?—This one [chart No. : Exhibit].
5778. Then you never saw this one [hands second chart, No. : Exhibit] before?—Both charts are mine.
5779. Where does this "operation" come in?—On the 15th.
5780. Where does this one [second chart] begin?—On the 15th.
5781. Does that chart [No. 2] agree with this one [No. 1]?—It does up to here [indicated on chart].
5782. Did you fill up this chart [No. 2] from memory, or did you reconstruct it from this one [No. 1]?—From the 15th I did.
5783. Who marked this one [No. 2]?—I cannot tell you.
5784. You say that this chart [No. 2] is not the one that you marked?—I have no recollection of it.
5785. You do not know anything about this second chart?—I do not.
5786. This one [No. 2] begins on the evening of the 13th?—So I notice.
5787. On the evening of the 13th it marked a temperature of 98°; while the other chart marked on the evening of the 13th a temperature of 98° and a fraction?—I do not understand it.
5788. Is that [indicating figures on the chart] your handwriting?—Yes.
5789. How came you to keep the two charts at the same time?—I cannot tell.
5790. You never carried out this one?—No. I do not remember that other one.
5791. *Mr. Chapman.*] Do the probationers sometimes write up the charts?—Yes.
5792. Was there a probationer in your ward at this time?—Yes.
5793. Who was she?—Nurse Veitch.
5794. Would the temperature be taken more than once?—It would not be written down more than once.
5795. Would anybody else take it besides you?—No. If I took it no one else would.
5796. *The Chairman.*] After the operation did you keep this chart [No. 1]?—Yes.
5797. Is that your handwriting, "after operation"?—Yes.
5798. Is that the last thing you wrote on this paper?—As far as I remember it is.
5799. You do not remember writing any more on this chart?—No.
5800. Then you began a new chart?—Yes.
5801. You appear to have written "after operation" on both these charts?—They look like it.
5802. You certainly appear to have marked the temperature twice over for the 13th and the 14th?—Yes.
5803. *Mr. Chapman.*] Suppose you made a mistake, how would you commence to correct it?—I have never made a mistake in any chart before.
5804. *The Chairman.*] Was there any reason why the temperature should fall, as indicated here?—I do not know.
5805. You began this chart two days afterwards, did you?—Yes.
5806. And you never continued this one after that?—No.
5807. But this is not the chart at all?—It must be, because it is in my handwriting up to there [indicating on chart No. 2].
5808. *Mr. Chapman.*] Have you any independent recollection that there was a change of temperature before the operation?—No.
5809. Do you remember the morning of the operation?—Yes.
5810. Did you see Dr. Batchelor that morning?—I saw him in the operating-room.
5811. Did you see him before then?—I think I saw him in the ward, but I will not swear to it. Mr. Hogg, his student, was certainly there.
Mr. Solomon: I do not know if anything turns on this point, but we can bring the evidence (volunteered to us) of half-a-dozen patients, who will swear that Dr. Batchelor was not in the ward that morning.
5812. *Mr. Chapman.*] Do you remember the douche?—Yes.
5813. Did anything particular happen to the douche during the operation?—It ran out, but it was filled up immediately.
5814. Where was it placed?—On the top of the instrument-case.
5815. Who placed it there?—The first time I do not know, but Dr. Jeffcoat lifted it there the second time.

5816. *Mr. Solomon.*] You say that the douche ran out. Do you not know that it is made to stop purposely—that it has to be pumped in order to be set going again; that, instead of being a defect, it is a decided advantage to have the douche to stop?——

Dr. Batchelor: It is a misuse of terms to say that the douche stops.

5817. *Mr. Solomon.*] How long have you been in the Hospital?—Eighteen months.

5818. You knew that Mrs. S—— was to be operated on?—Yes.

5819. And you were present at the operation?—Yes.

5820. Now, nurse, do you not know that, if a patient had a temperature of 100° on the morning of the operation, it was important that the attention of the doctor who was to operate should have been called to the fact?—[Unanswered.]

5821. If you had known yourself that her temperature was 100°, would you have allowed her to have been operated on without calling the doctor's attention to it? Was that at all likely?—[Unanswered.]

5822. Has not your experience in the Hospital taught you that it was not proper to operate on a patient with such a temperature?—But his clerk saw what it was. It was not for me to say anything when his clerk was there.

5823. Do you not know that with a temperature of 101° it is not proper that a patient should be operated on?—Was it 101° in the morning?

5824. That is according to your own marking. On the night of the 14th the temperature is supposed to have ran up to 101°—that was the last temperature taken on this chart; but on the morning of the operation it was 100°. I ask you again, does not your experience tell you that it is not right that a patient in that condition should be operated on?—I never took it into consideration.

5825. What do you think about it now, if your experience did not tell you that it should have been thought of before? Suppose, for instance, that you knew to-day that one of the patients under your care was to be operated on to-morrow morning for an Emmet, and that you had noticed that to-night she has a temperature of 101°: Do you think that, under these circumstances, you would be likely to allow the patient to be operated on without telling the doctor of that fact?—If I thought about it I would.

5826. Did you ever tell anybody that this patient had had the night before operation a temperature of 101°?—I do not remember.

5827. When was the first time that your attention was called to the fact that this woman had had such a temperature before the operation?—Since this inquiry.

5828. Do you remember anything about it at all?—No.

5829. I suppose that this woman's death was talked about almost immediately afterwards. There was a great row after her death, and it has been going on ever since—in fact, the Hospital has been in hot water ever since the woman died. Do you think it likely that the fact that she had had a temperature of 101° the night before operation could have escaped your attention all that time, and that you have never thought of it?—I never thought of it.

5830. Still it would be a very important matter would it not?—[Unanswered.]

5831. Seeing that you never thought it worth while to mention the fact, and that you have told us that it never occurred to you until after this inquiry had commenced, may I ask what has drawn your attention to it now?—The newspapers.

5832. Then the first you knew of it was seeing it mentioned in the newspapers?—Yes.

5833. Seing that that was the first you heard of it, and that it had escaped your memory altogether, are you prepared to swear now that a mistake may not have occurred in the entry on that day in the chart?—[Unanswered.]

5834. Let me tell you this: that Mr. Hogg was in the ward that morning—he has told us so in the witness-box already—and that he never heard from you or anybody else that this patient had had such a temperature as is recorded on that chart; that Dr. Batchelor has also sworn that he never heard of it before the operation; and, remembering further that you admit that you never told the doctor or anybody else, are you prepared to swear that there may not have been a mistake in that chart?—She did have it, if it is so marked.

5835. Are you positive about it?—I cannot say anything different: she had it if it is marked there.

5836. Have you never made a mistake in any of your charts?—Never.

5837. Do you mean to say that, with all your experience, that knowing a patient is to be operated on who has had a temperature of 101° on the night before operation, and a temperature of 100° on the morning of operation, it is not a part of your duty to tell the doctor that?—I did not mention it.

5838. And you will be faithfully discharging your duties as a nurse to allow a patient to go to operation with such a knowledge in your own mind, and yet say nothing about it to the operating surgeon? Will you please tell me if that is your idea of performing your duties?—I never thought of mentioning it when it was marked on the chart.

5839. Do you never mention to any doctor that a patient's chart is up, or never draw the doctor's attention to such an important fact?—Yes.

5840. Could such an important fact have escaped your attention if you knew that the patient was to undergo a severe internal operation? Would it not be far more likely that the chart should be in error than that you should so far forget your duty? Would you be likely to forget it if it were the case?—I did not mention it.

5841. *The Chairman.*] You knew it was an abdominal operation that was to be performed?—Yes.

5842. And you knew that she had no right to be operated on in that condition?—Yes.

5843. *Mr. Solomon.*] You knew that this woman's temperature was at 100° on the morning of the operation?—Yes.

5844. Do you think it is at all likely that you would stand by Dr. Batchelor and see him operate on a patient who was in that condition without telling him about it?—I would not, when his clerk saw it.

5845. Then you stood by, without saying anything about it?—Yes, I did.

5846. These two charts were given to the hall porter, we have been given to understand?—They were taken down immediately after the woman's death.

5847. *The Chairman.*] Do you remember taking the two charts down to the hall porter?—No, I did not take them down. The porter came up for them.

5848. Do you remember how many charts were given up to him?—I do not.

ELLEN MARIA MONSON sworn and examined.

5849. *Mr. Chapman.*] You are a nurse in the Dunedin Hospital?—Yes.

5850. For how long have you been there?—Eighteen months from 1st September.

5851. Are you a certificated nurse?—Yes.

5852. *The Chairman.*] Did you come to the Hospital with a certificate?—No. I have been certificated since the 1st March.

5853. *Mr. Chapman.*] Do you remember Mrs. T——'s case?—Yes.

5854. Did you prepare her for the operation?—Yes, I got her ready.

5855. Were you present at the operation?—No.

5856. Did you see her after the operation?—She was brought to my ward after the operation.

5857. *The Chairman.*] That is No. 5 ward?—Yes.

5858. *Mr. Chapman.*] By whom was she brought?—She was brought up on a stretcher carried by two men. Dr. Copland and Nurse Shaw accompanied her.

5859. Was she conscious at that time?—No; she was under chloroform.

5860. Did you notice anything special about her?—After she was put into bed I noticed that her face was very blanched. She was very cold, and seemed to be almost collapsed.

5361. Did Dr. Batchelor see her?—He came in for a few minutes after we had packed her in bed, and before he went away from the Hospital after the operation.

5862. I suppose she came out of the chloroform?—Yes. I tucked in the bedclothes, and tried to keep her warm. When she came up she complained of being cold.

5863. What then?—She still said that she was cold, and complained of pains in her back. I could not understand how she was so cold. I put pillows under her knees and then found a pool of blood right under her back. I told the housemaid to go for Dr. Copland, who came and undid the stitches. Neither the bandage nor the bed were wet. The blood was coming up through the tube. Dr. Copland took out the stitches and found that the blood was coming out through the tube.

5864. *The Chairman.*] Who took off the dressings?—Dr. Copland took them off, in order to see where the bleeding was coming from. I was looking to see hemorrhage, but did not see any until I lifted up her knees to put the pillow under them.

5865. You did not see the blood through the dressings?—No; it was not on the dressings. The blood was welling up from the tube. Dr. Copland applied the usual remedies for hemorrhage.

5866. What did you do?—I got hot water for him at once.

5867. *Mr. Chapman.*] What happened then?—He put in hot water with a syringe. That stopped the bleeding for a second or two. The tube filled slightly, it seemed to come half-way up; but it filled when she was retching.

5868. *The Chairman.*] When did she retch?—When she came out of the chloroform.

5869. How long?—She had been retching two or three times before I noticed the bleeding. She would lay quiet for a bit and then give a kind of struggle.

5870. How long had she began retching before you removed the dressings?—I cannot tell the time. I was just watching by and did not observe the time. Dr. Copland went out, and a little while afterwards Drs. Maunsell and DeZouche came in. Dr. Maunsell asked me for a board to elevate her legs with, and I brought one in from the bath-room and put it over two chairs and so raised her legs up. Dr. Maunsell (I think, but am not sure) kept washing the wound out, and left in a little wool with iodoform.

5871. Did it seem to keep filling up then?—Yes; but it filled slowly.

5872. The applications did not stop it?—They would stop it for a little while, but then it would fill again. The bleeding stopped for a bit, and Drs. Maunsell and DeZouche went away. So long as she lay quiet I saw no blood, but when she moved it came up quickly.

5873. How long was this after she had been brought from the operating-room?—It was about 4 o'clock when she came up, and about 5 o'clock when I called the house surgeon. It was a little before 6 o'clock when Drs. Maunsell and DeZouche were there.

5874. Did you leave at 6 o'clock?—No; I stayed with her till about 7·30.

5875. *Mr. Chapman.*] When did you come on again?—At 6 o'clock next morning.

5876. What did you find then?—Dr. Batchelor was in the ward, as were Dr. Roberts, Dr. Copland, and Nurse Waymouth. Dr. Batchelor said, "Come along, nurse, get some hot water." They had shifted the bed under the gaslight—it was now about 6·30—in order to look where the bleeding was coming from.

5877. Was there plenty of hot water?—Yes. Mrs. Burton had told us to be careful and keep a good supply.

5878. Did the water supply run out?—Not in the ward. There was plenty of hot water in the barrel.

5879. Had the supply run out beside the patient's bed?—All the water in the jug might have been emptied out, but we can always keep filling it, to have it of even temperature.

5880. How long does that take?—Only a few seconds.

5881. Was the operation stopped from the want of water?—No; we held sponges all the time.

5882. Was the wound opened up?—Yes, and well washed out.
5883. And closed up again?—Yes.
5884. Were you with her after that up to the time of her death?—Yes.
5885. You have told us that you have been eighteen months in the Hospital: How long during that time have you been off through illness?—A whole week with influenza, but at no other time.
5886. Where have you to do duty?—All over the Hospital, except in the male wards.
5887. At what time of day?—Both night and day.
5888. Have you found the atmosphere of the wards very bad in the morning?—I cannot notice anything smelling disagreeable except the tow and the iodoform.
5889. Have you found your wards stuffy or close?—Not in the morning.
5890. They have never made you feel sick when you went on duty in the morning?—No.

THURSDAY, 11TH SEPTEMBER, 1890.

Before the taking of evidence was commenced, Sir James Hector stated that he had visited the Hospital that morning before 6 o'clock, and had spent about an hour in the institution. He was alone, and no one had had notice of his visit. The morning was calm and fine, the temperature being 51°. The temperature of the main hall was 55°, and in the board room—unoccupied—it was 54°. In No. 1 ward washing floors was just begun. Five window valves were open and two windows. The air was fairly fresh, and the closets were in order. The temperature was 56°. No 2 ward had three windows open and three valves. The air was fairly fresh, and the closets were clean. The temperature was 56°. In No. 3 all the valves were closed, and only one end-window was open. The atmosphere was very close and bad, and the closet not flushed out. The temperature was 64°. The warder said they could not open the windows all the previous day, and the chimney smoked, and strong cold draughts poured in by the top ventilators. In No. 4 one valve and one window were open. The air was very close, with a very offensive smell, and the temperature was 61°. These were all the men's wards. In No. 6 three top-windows in the side and two in the end were open; the air was quite fresh, and the temperature was 56°. In No. 8 five windows were open; the air was quite fresh, and the temperature was 55°. He had also examined the rain drain-traps, and also the kitchen connections; each sink had a trap. The temperature in the kitchen was high. In answer to Mr. White, Sir James Hector said he did not visit the children's ward.

Dr. COPLAND recalled.

Witness: [Report of the *post-mortem* on Mrs. S—— and the certificate of death were handed to the witness.] The report of the *post-mortem* is in my handwriting, but I do not know anything about the certificate.
5891. *The Chairman.*] How came you to write that report out?—I wrote the report at the dictation of Drs. Roberts and Jeffcoat, who made the *post-mortem*.
5892. Can you say exactly how much was written at the dictation of Dr. Roberts and how much at the dictation of Dr. Jeffcoat?—I cannot do so at this length of time. It is almost entirely at Dr. Roberts' dictation. A few words at the end were put in at Dr. Jeffcoat's dictation. What was put down at Dr. Jeffcoat's dictation was agreed to at the time by Dr. Roberts.
5893. Was there any difference of opinion between them at that time? Did they argue at all about the matter?—Yes. There were one or two little bits of argument.
5894. Do you remember on what point?—I do not remember.
5895. Was there any final difference?—No.
5896. Did they agree to what was written?—Yes.
5897. *Mr. Carew.*] You say that anything Dr. Jeffcoat dictated Dr. Roberts agreed to?—Yes.
5898. *Mr. Chapman.*] I see that there is a matter of opinion at the end of the report—"Cause of death, septicæmia." At whose dictation was that written?—I cannot say positively at this time, but I think it was at Dr. Roberts'. They both seemed to be agreed about it at the time.
5899. *The Chairman.*] At whose dictation were the words at the end written?—Dr. Jeffcoat's, but they were agreed to by Dr. Roberts, I think. There was no objection made to my writing them down.
5900. *Mr. Chapman.*] When I was absent the other day some questions were asked about Mrs. S——'s chart. Are you able to give us any explanation of the fact of there being two charts?—I think it may be accounted for in this way: On the night of the 15th—I know that her temperature was very high that night—her temperature was taken at several intervals, so I suppose it was written on pieces of paper that were attached to the chart, but I do not know what became of these slips. Her temperature was taken at intervals of two hours that night, I think.
5901. *The Chairman.*] Do you remember seeing two charts yourself?—I do not. The chart hangs at the head of the bed.
5902. You say that there was another paper. There was a small slip of paper which the nurse was keeping to show me. This sort of thing is often done at night, if there is any doubt about the temperature, or if the temperature is too high.
5903. You will see in the notes of the treatment that the first occasion on which the temperature went up there was nothing ordered?—I was not in the ward that night, and did not see anything about it.
5904. Is it possible that there may have been an error in transferring the figures?—There has evidently been a bungle here. This one has been copied from the original chart.
5905. But we had it in evidence yesterday that this second chart was the original one?—I do not believe it.
5906. *Mr. Chapman.*] Nurse Waymouth admits that this is wholly in her handwriting, but she did not do any part of this [on the second chart]. She wrote the word "temperature" on each

chart, she says, but cannot remember anything about two charts. Have you found her to suffer from loss of memory?—She is sometimes apt to forget things. She loses her head, to put it shortly.

Dr. COUGHTREY sworn and examined.

5907. *Mr. Chapman.*] Your name is?—Millen Coughtrey.

5908. What are your qualifications?—I am a Bachelor of Medicine and Master of Surgery of the University of Edinburgh.

5909. You were for some time Professor of Anatomy in the University of Otago?—Yes.

5910. And you are a registered medical practitioner for this colony?—Yes.

5911. Practising in Dunedin at present?—Yes.

5912. How long have you been in practice in Dunedin?—Since about Christmas, 1876. I really commenced practice in the first week of January, 1877.

5913. What is your official connection with the Dunedin Hospital?—I am a member of the Honorary Medical Staff, and Chairman of the medical staff for this year.

5914. And in that capacity you have been requested to attend this inquiry?—Yes.

5915. You have had some experience in and knowledge of hospitals in the Old Country, have you not?—Yes.

5916. Of what hospitals?—The Liverpool Royal Infirmary, the Northern Hospital and the Southern Hospital (both in Liverpool), the Manchester Royal Infirmary, the Leeds Royal Infirmary. I have seen the Blackburn Infirmary; I have also seen the London hospitals cursorily—more particularly one part of St. Thomas's, the Edinburgh Royal Infirmary, the Glasgow Royal Infirmary, and the Western Infirmary.

5917. *The Chairman.*] Do you mean the new or the old Edinburgh Infirmary?—The old one. I also visited the Chalmers Hospital—commonly known as Watson's—in Edinburgh.

5918. *Mr. Chapman.*] Have you seen any foreign hospitals?—Yes.

5919. Begin with America?—I have been in the Bellevue Hospital in New York.

5920. When?—I was there in 1869 and again in 1872. In 1869 I was there as a student. I also saw the Roosevelt Hospital in New York. I saw that hospital in the latter part of 1872. I also saw the Boston City Hospital.

5921. Do you know anything of the hospitals of the continent?—I have seen part of the Moabite and also part of the Friedrischen.

5922. And in France?—I have seen the Hôtel Dieu in Paris.

5923. Any others in Europe?—I do not recollect any more.

5924. What about Vienna?—I saw the Rudolph Steifnung.

5925. Any others?—I have seen the Jamsetje Jeehejeeboy Hospital in Bombay. I have also seen the Australian hospitals.

5926. Which of them have you seen?—The Melbourne Hospital, at the corner of Lonsdale and Elizabeth Streets. I have not visited the Alfred Hospital, but I have discussed it with an old friend of mine, who is one of the directors.

5927. You have not been inside of it?—No. I have only seen the outside of it.

5928. But you know something of it through having had discussions about it?—Yes.

5929. Have you seen any other Australian hospitals?—I have seen the old Sydney Hospital in Macquarrie Street.

5930. Do you know anything about the hospitals in this colony?—Yes. I have seen the Oamaru, Timaru, and Christchurch Hospitals.

5931. *The Chairman.*] When did you see the Christchurch Hospital?—Last year. I also saw the Auckland Hospital; but that was about sixteen years ago.

5932. What had you to do with the Dunedin Hospital before your present connection with it?—The first time that I had anything to do with the Dunedin Hospital was when I visited it partly at the instance of the University Council and partly at the instance of the Provincial Executive. I have a record of that visit, which, if I remember aright, was made in June, 1875. I have extracted it from page 253 of my private note-book.

5933. Was it from your report to the Provincial Executive?—It was accompanied by a private report, which I gave to Mr. Macandrew, on the accommodation of the Hospital.

5934. That, I understand, is the material on which you founded your report?—Yes. I suggested that the Hospital should be used for the purpose of affording medical education. The private report to Mr. Macandrew was made at his request.

5935. Had you anything further to do with the Hospital?—There was another report on the 5th July, 1875, drawn up by myself, and afterwards submitted to Dr. Hulme, who at that time was the only surgeon connected with the institution. Dr. Hulme was Provincial Surgeon. In that report, which was directed to "His Honor James Macandrew, Esquire," I dealt with the methods of utilising the institution for clinical teaching, and for throwing it open to the profession.

5936. Was your recommendation adopted?—Yes. Not exactly at that time, but later on. The whole of it was carried out with one exception.

5937. *The Chairman.*] Then the whole of the scheme which you suggested was carried out?—With the exception of the main thing that I had recommended to Dr. Hulme.

5938. What, do you mean that the whole plan was adopted with the exception of the main thing?—It was the main thing, as it happened. I suggested that the gentlemen who came on the honorary staff, partly for the purpose of giving clinical instruction and partly also as members of the medical staff, should receive from the Provincial Executive a fee of £100 per annum.

5939. Then your plan was adopted, with the exception of the part relating to the fees?—Yes. That was for giving clinical instruction to the Medical School. [Report handed in: Exhibit lvi.]

5940. How does this document bear on the present state of the Hospital?—It does not exactly bear on the present state of the Hospital; but it shows the scope I took, of it being used for the

purposes of medical education. At that time, I think, speaking from memory, the number of patients was 170.

5941. The average number was?—About 170.

5942. *Mr. Chapman.*] You subsequently became a member of the Honorary Medical Staff?—Yes. I acknowledged my appointment by letter on the 29th December, 1877.

5943. And you retained that position for about eight months?—Yes. I then retired in accordance with a paragraph in the last part of my letter of the 29th December, 1877. After acknowledging the notification from the Committee of my appointment as one of the honorary visiting surgeons to the Hospital, I wound up by saying: "If I find that I cannot, consistent with my duties to myself, satisfactorily perform the duties of my appointment the Committee may rely upon me resigning in favour of someone else." I do not remember who was Chairman, whether Mr. Strode or Mr. Houghton, but I think it was Mr. Strode, and I made a verbal communication—I did not write a letter—to him to that effect.

5944. It has been said that on more than one occasion, when you were asked why you did not again become a member of the staff, you replied: "I do not want to have anything to do with the beastly place." Have you any recollection of giving such an answer?—I have no recollection of giving such an answer, and I think it is improbable that I should have done so, because it was not the main reason why I left the staff.

5945. Just give us an explanation of why you left the staff?—Well, I really did not care to go any further with the institution; it would be almost ungenerous for me to mention my reasons. I simply wanted to lead a quiet life: that was just the long and the short of it.

5946. Do you remember being asked at any time to rejoin it?—I have been asked by several medical gentlemen why I did not go on again.

5947. Do you remember the reasons which you gave?—I have given reasons.

5948. Do you remember giving any such answer as has been mentioned?—Not that answer.

5949. Do you think it is unlikely that you would have given any such answer?—I think it is, because that is not at all the reason why I left.

5950. Do you know what reasons you have given?—Yes; but it would be almost unfair for me to state them now.

5951. *The Chairman.*] Did you at that time have any reason to be dissatisfied with the condition of the Hospital?—I was not satisfied with it.

5952. Did you think it was not suitable for the work you had to perform as a member of the medical staff, and at the same time as a teacher in the Medical School?—Practically, there was no teaching going on at that time, because there were no students.

5953. What was the state of your mind at that time regarding the condition of the Hospital?—I regarded the institution as certainly not perfect. I was not satisfied with it.

5954. Did that want of satisfaction with the building weigh with you in not rejoining the staff?—It weighed very little with me.

5955. Did it do so to some extent?—It may have swayed me to some extent, but very little. I have a very vivid recollection of the reasons which did sway me.

FRIDAY, 12TH SEPTEMBER, 1890.

DR. WILLIAM COUGHTREY, examination continued.

5956. *Mr. Chapman.*] You became a member of the Hospital staff again recently?—I think it was in April last.

5957. That was after an interval of eleven or twelve years?—Yes.

5958. Did you find any changes in the Hospital?—Great changes.

5959. In what direction?—Well, starting with the basement, that was considerably improved. The wards were much cleaner than at the time I saw the Hospital in 1875 and 1878. It appeared to me to have a fewer number of beds. I think that all the wards had been fitted with what was a doubtful improvement—with baths and lavatories. I think these had been placed in since I saw the Hospital last.

5960. *The Chairman.*] What were they before that?—They were in process of putting them in. In 1875 a wretched thing was used—a galvanised-iron can was kept in the ward in the corner and was scouted out in the morning.

5961. You say this was a doubtful improvement?—I think it would have been much better that these things should be outside; and I think that at that time the bath-rooms were up—at the present time used on the upper floor as one of the house surgeon's rooms. I speak subject to correction, purely from memory.

5962. *Mr. Chapman.*] Well, were the improvements such as to strike you on renewing your acquaintance with the place?—Yes.

5963. I want you to give your opinion on one or two matters. As to the site—the site of the present building?—Well, as to the site, I would like to consider it from the aspect in which hospitals are considered now—in relation to the number of beds; and I made a calculation, compared with modern hospitals, and I hand in a list showing the comparative relations to bed-space.

5964. Then the authorities do apparently rely upon a proportion of beds to acreage?—Yes.

5965. *The Chairman.*] That is, to the size of the site?—Yes.

5966. I understood it was the nature of the site?—First of all they deal with the size. My attention was first called to the matter of the site about three or four years ago, as I was thinking of building a private hospital when I purchased a site at St. Clair. This is the calculation of beds per site, practically taken from a paper in *The Practitioner*, in the latter part of 1888, a paper

bearing on the question of hospitals, and I find that the number of square feet per bed to the acreage, calculated to the ratio of 100 beds, the extent of the site being five acres, is 1,815. In Manchester, with 1,400 beds, nine acres in extent, you get 280 square feet; in St. Marylebone Workhouse Hospital, 744 beds, 5¾ acres in extent, 336 square feet; St. Thomas's Hospital, 8½ acres, 537 beds, 660 square feet; Herbert Hospital, 650 beds, 17½ acres, you get 1,162 square feet. The tendency in all the later modern hospitals is to increase the number of feet per bed.

5967. What should you say?—I should say that 1,500 square feet per bed is the proportion to which they are coming in the cities.

5968. *Mr. Chapman.*] That has a bearing on the general question of the suitableness of site of a hospital in a town of such size as this?—Yes.

5969. Then as to the site in other respects?—The site seems to have improved on what it was formerly. It has improved in respect of the street drainage.

6970. And is it not an unhealthy part of Dunedin?—It is not what I would call an unhealthy part of Dunedin, but it is not what I would call an ideal sanitary site.

5971. But is it objectionable?—I do not think so. An ideal sanitary site, from the modern point of view, would be on the top of the highest mountain or in the middle of the sea, but that is not compatible with the requirements of common-sense as to the use of a hospital; but at the same time I think we ought to consider this Hospital with regard to the Medical School; and its propinquity to the Medical School I look on as of serious import to that school and of value to the community. I do not regard the Medical School, *per se*, as doing any harm to the Hospital itself.

5972. I suppose where you have a medical school the surgeons and physicians are likely to be more up to the mark than in other places?—Quite so. I do not think the Medical School, *per se*, is injurious to the Hospital. I think you might take that from such places as St. Bartholomew's for one, and from other places. At the Leeds Royal Infirmary there is a *post-mortem* room under the basement of the hospital. That hospital has been affected prejudicially by the medical school.

5973. But under proper regulations that need not be?—It need not be.

5974. Now, as to the Hospital itself—its structure and defects. I wish you shortly to state your views?—Well, the block is purely a building built for another purpose, and converted into a Hospital.

5975. *The Chairman.*] You mean that the building is not suitable?—Not for a modern hospital.

5976. *Mr. Chapman.*] Is it to any extent suitable?—It is, as a building of expediency, suitable—as a temporary expedient.

5977. Having that, what are its defects and advantages?—One defect in modern hospital sanitation is the block system, but at the same time that feature is presented in a large number of hospitals in existence elsewhere.

5978. What are the most recently-built hospitals in London?—St. Thomas's, I think.

5979. That is twenty years old?—Yes. I do not know a recently-built hospital of any magnitude.

5980. Do you call that the block system or the pavilion system?—It is supposed to be on the pavilion system; but, in my opinion, it is neither fish, flesh, nor fowl. It is intended to be on the pavilion system, but it is vitiated owing to its being connected by so many corridors.

5981. Have they in London any ideal hospital on the pavilion system?—Not on what I would call the continental plan of the pavilion system, in which the wards are not in any way connected with one another by corridors.

5982. *The Chairman.*] When were you last in London?—I was in London last in 1875. I saw St. Thomas's in 1874 and 1875.

5983. *Mr. Chapman.*] As far as the large hospitals are concerned, that is the most recent?—That I know.

5984. So that they have not in London, at any rate, pulled down their old hospitals to build on the pavilion system?—No.

5985. That is a general defect in the structure?—A general defect.

5986. What are the defects, now, in detail?—Well, I agree very much with what has already been said. Take the floors: there is no doubt that they are of soft wood, possessing cracks, and rough. That is a defect that is common in many hospitals that I have seen.

5987. That is one item that everybody seems to be agreed upon, or very nearly so. And the walls are of rough brick, whitewashed, and in some places faced with cement?—Yes.

5988. *The Chairman.*] Do you happen to know the nature of the whitewash used?—I do not know.

5989. If size was used, do you think it a good thing?—I do not think so. I remember asking Mr. Burns if that was so, if any disinfectant was used at all, but I do not recollect the answer that he gave me.

5990. *Mr. Chapman.*] Apart from that, the walls are in a rough state or nearly so, and they are whitewashed?—The roughness of the walls is an objection.

5991. And the whitewashing, is that useful?—No doubt modern hospitals should have smooth walls—sanitary walls they are called; and I would even go so far as to say that I would have the walls thoroughly saturated with turpentine paint, which gives off a large amount of ozone.

5992. Still, as the matter now is, would you expect very much harm to arise?—No; I do not think that one could say that much harm would come from it.

5993. *The Chairman.*] Even if size is used?—If size is used it would be an objectionable feature; if pure lime is used it would not.

5994. Suppose there was no lime, but whiting?—There must be some form of size used; and then that is modified if any disinfectant is used along with it.

5995. *Mr. Chapman.*] Did you read that report, about which we have heard something, drawn up by Dr. Lindo Ferguson, and approved of by some gentlemen, and apparently not by others?—I

have read the paper, and know pretty well about it. This paper was read at one meeting of the medical staff.

5996. *The Chairman.*] Were you a party to that report?—I was not a member of the medical staff.

5997. *Mr. Chapman.*] To what extent were you a party to it?—To say that I was entirely a party to it would be almost to misstate, but I assented to many of the main propositions contained in it, on this assumption—that nothing else could be done to improve the present building. As far as I know, I think that at the first meeting at which the report was read a short discussion took place, and at my suggestion it was printed. I think it was on my resolution. Then, at the second meeting, at which it was partly discussed, I was called away before it properly came on for discussion. Then, I think—I am not certain—that the next morning, or a morning or two afterwards, Dr. Roberts called on me and told me what had been generally agreed to; and I gave him a note telling him of the main points on which I assented to it. This is the note: "Dear Roberts,—I am in favour of increased floor-space per patient in general wards, of an alteration in number of beds, and sanitary arrangements in tower ward; also of removal of closets, bath-rooms, &c., out of general wards, and of improving the ventilation and warmth in wards, but do not bind myself to any detailed method.—M. COUGHTREY."

5998. It was a qualified adhesion to the report?—That was purely on the assumption as to what could be done to improve the present building.

5999. You wrote to the Trustees too?—Yes; I wrote to the Trustees clearly defining my position in the matter.

6000. About this time?—Yes; about this time. I shall read what I wrote. [Letter read.]

6001. *The Chairman.*] Did you show that letter to the members of the staff?—No, I did not.

6002. *Mr. Chapman.*] What are the most pressing defects in the present building?—Meantime, I think the most pressing defect is the necessity for a thorough isolation of such cases as erysipelas cases.

6003. What would be your proposal?—My proposal is that there should be built ——. Before answering that, do you mean supposing the present building is dealt with?

6004. Yes, under present conditions.—Supposing the present building is utilised?

6005. The present building and adjuncts—substantially the present conditions: what would be your proposal?—It is difficult for me to answer that, because I have such a strong conviction that if any public money is to be spent it should not be spent in adding wards to the present building unless you make the present building an administrative block pure and simple.

6006. Suppose you were to deal with the present building, where would you put such cases until such time as general new wards could be obtained?—I would strongly advocate the isolation of such cases in a cottage, or in some such cheap expedient.

6007. *The Chairman.*] You mean isolation of special infectious cases in a cheap, detached building?—In a cheap, detached building, as far away as you could get it in the present grounds, or out of the grounds if you can get it.

6008. *Mr. Chapman.*] Suppose you had to deal with this aspect of the case; that you had to use the present building as an administrative block, and add wards, would you still use any portion of this building for hospital purposes?—Well, I thought of dealing with that position afterwards. I think it had better come in serial order.

6009. Very well, what do you find to be the next defect or claim?—I think one of the next claims is a ward for eye cases, on account of the special light they require. By erysipelas cases I mean wards for both sexes.

6010. Then you want two cottages?—That means two cottages. The second defect is the subject of ventilation. The point is this with regard to ventilation, that it is intermittent ventilation. If carefully administered I do not think the ventilation is imperfect, but it is intermittent window-ventilation, and as such is liable to get out of order.

6011. It makes greater demands on good management than the system should?—Yes.

6012. With careful and intelligent management how does it work?—With careful and intelligent management the evil may be minimised and mitigated.

6013. And with such management may it be made to work so as to counteract the evil of too many beds in the wards? This subject connects with that of ventilation, and space in wards?—Yes, they do connect together.

6014. *Mr. Solomon.*] Do you mean to say that if the windows are attended to it counteracts to some degree the evil of overcrowding?—Proper management will mitigate these evils, and among these evils is that of overcrowding.

6015. *Mr. Chapman.*] Well, now, take the subject of ventilation a little further. It is imperfect, and much dependent on management?—That is practically the meaning I want to convey.

6016. Do you know if ventilation by windows is in use in other hospitals?—Yes.

6017. And in hospitals built upon the block plan, either it has to be resorted to or some mechanical system of pumping air out and in?—To call the system adopted in the tower wards a system of ventilation of the wards is hardly correct. It is a system of "Tobination." In the upper wards the appliances for admitting air are not on Tobin's system.

6018. Have you anything further to say about the ventilation?—Not beyond that if it is not managed well it is liable to be draughty; but, on the other hand, it is better to have draughts than to have foul air.

6019. Then, what do you find to be the conditions with reference to bed-space, cubic space, and crowding?—The bed-space, I think—I have calculated this on paper—ranges from about 79 to 85 square feet per bed. Now, I think myself that in modern hospitals the more floor-space you can get the better, as that bears upon the cubic capacity and upon the crowding of the patients.

6020. That is a low proportion?—It is a low proportion; but I see that the Herbert Commission, that sat to inquire into the Herbert Hospital, came to the conclusion that the amount for each bed should be 87 square feet; and in the new hospital build at St. Marylebone the square feet per bed is 72. Still, that is a very low average.

6021. *The Chairman.*] Have you got the figures of that report?—Yes; but I think that was calculated on the basis of seventeen patients in a ward, and now there are fifteen patients in the lower wards. In the upper wards there were seventeen patients, and now there are sixteen. I think the 79 square feet was worked out by Dr. Lindo Ferguson. In an ideal hospital the more floor-space you can get, taking economy of administration into account, the better. For instance, if you could get a floor-space of 150 square feet, and the public were willing to pay for it, I would have it; but with what we have I think success can be insured, with great care.

6022. *Mr. Chapman.*] Now, as to the cubic space per patient?—The cubic space per patient necessarily follows upon the floor-space, and I do not accept the cubic space given in Dr. Lindo Ferguson's paper as being a fair average. He calculates on the capacity to a certain height in the wards. I take to the highest point of the windows.

6023. Then, you are of opinion that it does not require an absolute limit—12ft. or about, it is—above which you are not to go?—No.

6024. You take to the top ventilation?—Yes, to the top of the ventilation outlet.

6025. In that do you find yourself borne out by authorities?—The method on which this calculation is based is that adopted in the Army and Navy Hospitals.

6026. What height have they given to the wards in Wellington Hospital?—I do not know.

6027. If the ventilation outlet is in the ceiling it gives you the whole space?—Yes; and I may mention that if you will consult an original paper by Parkes in the *Medical Journal* for 1867 and De Chaumant in the *Proceedings of the Royal Society, London*, for June, 1875, and the succeeding paper by Burke before the Massachusetts Board of Health, you will find that the ventilation outlet is the guide to the calculation of cubic space.

6028. Then, you have reckoned it in this Hospital to the top of the windows?—To the top of the ventilation outlet.

6029. What is the height of that?—In the lower wards 15ft.—1ft. more than is calculated in Dr. Lindo Ferguson's paper. Then, in the upper wards it is 1ft. 5in. from the top of the ceiling, and the height of the ward is 14ft. 11in.

6030. The lower wards?—The height of the wards is 16ft. 2½in., and the height of the windows above the floor is 15ft.

6031. Parkes and De Chaumant are original authorities on the subject of hygiene?—They are recognised authorities. On the basis mentioned I take the cubic space of No. 7 ward as 20,600 cubic feet. I deducted from that the cubic space of the watercloset tower. I deducted sixteen beds, and deducted for twelve men and for the chimney, but not including the attendants. That would give a cubic space of 1,675 per person for twelve beds. For thirteen patients, 1,546 cubic feet; for fourteen patients, 1,435 cubic feet; for fifteen patients, 1,340 cubic feet; for sixteen patients, 1,256 cubic feet, leaving out fractions. Now for No. 1 ward, a tower ward, I calculated the gross cubic capacity of the ward, without reductions, at 21,567 cubic feet deducting 379 for the watercloset——

6032. They give a method of measuring the cubic space that does not eliminate length?—At page 179 of De Chaumont I find this: "The three dimensions of length, breadth, and height are simply multiplied into each other. If a room is square or oblong, with a flat ceiling, there is of course no difficulty in doing this, but frequently rooms are of irregular form, with angles, projections, half-circles, or segments of circles. In such cases, the rules for the measurement of the areas of circles, segments, triangles, &c., must be used. By means of these, and by dividing the room into several parts, as it were, so as to measure first one and then another, no difficulty will be felt. After the room has been measured, recesses containing air should be measured, and added to the amount of cubic space; and, on the other hand, solid projections and solid masses of furniture, cupboards, &c., must be measured, and their cubic contents (which take the place of air) deducted from the cubic space already measured. The bedding also occupies a certain amount of space. A soldier's hospital mattrass, pillow, three blankets, one coverlet, and two sheets will occupy almost 10 cubic feet, about 7 if tightly rolled up. It is seldom necessary to make any deductions for tables, chairs, and iron bedsteads, or small boxes, or to reduce the temperature of the air to standard temperature, as is sometimes done. A deduction may be made, however, for the bodies of persons living in the room; a man of average size takes the place of about 2½ to 4 cubic feet of air (say three for the average). In linear measurement, it is always convenient to measure in feet and decimals of a foot, and not in feet and inches. If square inches are measured, they may be turned into square feet by multiplying by ·007. . . . . The cubic capacity of a hospital marquee must be got by dividing the marquee into several parts. First, into bodies; second, roof: (1) body, as a solid rectangle, with a half-cylinder at each end; (2) roof, solid triangle, and two half-cones. The total number of cubic feet, with additions and deductions, must then be divided by the number of persons living in the room: the result is the cubic space per head."

6033. *The Chairman.*] In the previous case, how much for the tower?—350 cubic feet.

6034. And for the twelve beds?—36 cubic feet; and for the chimney space 60 cubic feet. In the tower ward, I deducted for the watercloset tower 379 cubic feet; for the press in the ward, 72 cubic feet; for fifteen beds, 45 cubic feet; for the occupants, 45 cubic feet; for the chimney, 104 cubic feet; and for contingencies, such as presses, and one thing and another, 117 cubic feet; which, deducted from the total, left a net cubic capacity of 20,800 cubic feet.

6035. *Mr. Carew.*] That is, allowing 3 cubic feet for each bed?—3 cubic feet for each bed.

6036. Parkes allows 7 cubic feet for each bed?—Not in my edition of Parkes.

6037. *The Chairman.*] Did you measure the beds?—No, I did not.

6038. Then, these are not observed figures?—No, they are not. In that case, perhaps they had better be struck out.

6039. Assuming these to be correct, what do you find as the cubic capacity?—For twelve patients, 1,733 cubic feet; for thirteen persons, 1,600 cubic feet; for fourteen persons, 1,485 cubic feet; for fifteen persons, 1,386 cubic feet.

6040. *Mr. Chapman.*] Then as to the space on the floor, the lineal wall-space?—There is no doubt about it, it is too small in the Dunedin Hospital.

6041. *The Chairman.*] Do you mean the bed-space?—Yes.

6042. *Mr. Chapman.*] Do you say that the beds are too close?—Yes.

6043. Have you made any calculations?—No. I have taken Mr. Wales's figures.

6044. Now, what is the next matter in order?—Well, taking the floor-space and the bed-space: what I wish to say is that one should also take into consideration that the same thing maintains elsewhere. What is practised is an evil, in fact.

6045. And elsewhere, have they found great inconvenience?—I know that the results in some of those hospitals have not been so bad as the results in this one would lead you to think they were.

4046. What hospitals do you refer to now?—I am now comparing our Hospital with such hospitals as the Liverpool Royal Infirmary, where the beds were very close.

6047. I suppose the number of bed returns for a hospital does not altogether represent the total number of patients put into the wards?—That is so. We had an example of that in Dr. DeRenzi's evidence the other day. I said to him, "You have occasionally more beds," and he said, "Oh yes, we sometimes have shake-downs."

6048. In Christchurch the cubic space is not more than in Dunedin?—I think it is more.

6049. Then, in comparison with Melbourne?—At the time I was in that hospital last, in 1884—I did not go through it when I was over in 1888—the beds, speaking from memory, or some of them, seemed much closer than the ideal standard. They seemed quite as close as in the Dunedin Hospital.

6050. Now, what are the matters in order of urgency?—We have dealt with ventilation and with floor-space, cubic space, and lineal bed-space. I suppose we now come to the baths and lavatories.

6051. Those you regard as defective?—I do regard them as defective, although the position of the waterclosets is practically the same as you will find in some of the modern hospitals. I have plans at home of the new Royal Infirmary, Edinburgh, and if you examine them you will find the water-closets there are almost the same as ours, in the corner. They have no cross-ventilation, and they open directly into the ward by two doors.

6052. *Mr. Solomon.*] Have you the plan?—I have not got it here, but I will produce it later on.

6053. *The Chairman.*] You have not seen the hospital itself?—No.

6054. Are you aware they had to revise the drains?—I know that they had to revise the drainage underneath, but they did not revise the position of these closets.

6055. *Mr. Chapman.*] What doors have they?—I think they have the same kind of double doors as we have.

6056. Do they have a vestibule?—They have no vestibule.

6057. *The Chairman.*] Do you approve of that plan?—No; that is quite a different matter.

6058. Then you point it out as a defect that exists in a modern hospital?—I might say that what struck me in one hospital, that has been taken as an ideal one, was that right at the end of the ward they had almost a similar arrangement to what we have here. That was in Blackburn, and I saw it when I first went to that infirmary on a visit. I was there for about a week, and I went, I dare say, three times to it.

6059. *Mr. Solomon.*] What was the death-rate?—I do not know.

6060. *The Chairman.*] The arrangement was almost the same, you say?—It was practically the same. I have a distinct recollection of it.

6061. *Mr. Chapman.*] Blackburn is the home of hospital reform; they are a most energetic people in that way. (To witness:) When did you see the hospital?—My visit to the hospital was between 1865 and 1867.

6062. Do you know anything of the Roosevelt Hospital in America?—It possesses a faulty plan, in that the waterclosets are at both ends of the wards. The closets have no cross-ventilation. In the Bellevue Hospital they are worse still. [Plan sketched.] At the time I visited the latter, Professors Woods, Gourley, and Delafield told me that this was the cause of so many patients being in extemporised huts.

6063. Have you known any practical evil come of it?—I have not known any practical evil.

6864. But it is a threat?—It is. It would be better to have the closet so arranged that the suction of air would not be towards the ward but away from it. The air should be warmed there, so that it would draw the air to it and not impel it the other way.

6065. You would need a shaft overhead?—Yes.

6066. The baths are a defect?—Yes.

6867. A serious one?—I do not regard it as a very serious one.

6068. These are matters in and about the ward. What are the next defects in the Hospital, in order of urgency?—Well, in pointing out all the defects I should strongly object to the position of the kitchen.

6069. What is objectionable about it?—The effluvia from it rises and permeates the general building, more especially No. 3 ward. That is the ward immediately over the kitchen.

6070. Both the heat of the kitchen and the effluvia affect it?—Yes, and the flue connected with the steam-boiler as well.

6071. Does that affect all through the house?—Well, nearly every part.

6872. What else now?—I am now dealing with the main defects, and I think, taking them as a body, I have given them.

6073. Then you have spoken of certain other defects. In what order will they come: for instance, the absence of an eye ward?—I do not regard that as of the same gravity as want of strict isolation for cases such as erysipelas cases.

6074. What is the size of the erysipelas ward you think is required: how many patients should it hold?—I think there should be accommodation in a Hospital of this size for six patients on each side. In Christchurch they have tried to remedy the omission of an erysipelas ward, and have certainly succeeded in obtaining isolation; but I do not think they have a very effective building, as the air of one ward is common to the other; there is no separation.

6075. Then in the case of a separate eye ward?—I want that more for the purpose of light.

6076. For what number of patients would you have light?—I think Dr. Lindo Ferguson would be a better guide in that than I can be, but I suppose there should be a few beds in each ward—male and female. But I might say there are other things I should like to see established. For instance, another thing that would be a great advantage to the Hospital would be the existence of a convalescent hospital.

6077. That is a defect: it is absent?—It is an omission.

6078. *Mr. Solomon.*] Would you only have one ward?—You know I mean two, Mr. Solomon—one male and one female. All new wards should be distinct from one another. I am very firm on that; and in anything that is done, I say, if it is to be a building for a permanent erection, let it be built in that way. Now, also, looking to the modern views as to the causation and production of phthisis and tubercular mischief, I should say I think these separate wards are necessary here for consumptive cases.

6079. Then it is a defect not having separate wards for cases of phthisis?—Yes.

6080. That is to say, the requirement is to isolate the person for the sake of the eye?—Yes; that is, for ophthalmic cases.

6081. And also to isolate such cases for the sake of others?—Yes, but that does not apply so much in the case of eye wards. My chief reason for having separate wards for erysipelas and other infectious cases is more for the sake of others. I think that doubtful mental cases should also be in a separate ward. There is a class of cases that occur in the Hospital that you cannot tell what they are—such as people suffering from drink, and others lying-in, wanting hospital treatment. Then, further, for the sake and comfort of the others—carrying this principle of isolation for the sake of others further—I think you should have stinking cases, empyema and hydatid abcesses, separate.

6082. *The Chairman.*] Cancer cases, what would you do with them?—They might go into some of the separate wards. Where the cancerous ulceration has gone on to some extent—advanced cases, that is—by taking such from the general wards you would decrease the number of patients in them and increase their purity. Then, if money flowed in, I would go in for gynecological wards, or wards, more properly speaking, for abdominal cases of both sexes. I may say that abdominal cases are performed nearly as frequently now on men as on women.

6083. *Mr. Chapman.*] Are they as frequent?—Well, the number of abdominal sections performed in modern surgery is very great. I think I am safe in saying that about two-thirds as many as are performed on women are performed on men in modern surgery.

6084. In those cases the matter concerns the patient, and not the general patients of the Hospital?—Yes.

6085. Now, what other things are there for an ideal?—For an ideal?

6086. *The Chairman.*] We are not concerned with an ideal state of things. I think, Mr. Chapman, you will meet the witness if you put the question in this way: Supposing the present building is used as a building of expediency, which of those things you have mentioned would you have done, in order of necessity?

6087. *Mr. Chapman.*] Yes.—Well, I should have an erysipelas ward built as the first thing that is absolutely necessary. That is the only ward I should urge to be built in the meantime, when the present building is used as a building of expediency, except a special building for ophthalmic cases. And then, next in order, comes a convalescent hospital. These are what I call the more urgent requirements of the Dunedin Hospital at present. Then, if any means could be devised—and it is quite possible they can—improved ventilation of the general wards might be undertaken, at small expense, so that public money would not be thrown away.

6088. *The Chairman.*] The question of money is not before us, but whether the Hospital is dangerous to the patients in its present condition. I have noted: "They are not suffering to any extent except from the want of an erysipelas ward."—But you must think of the public money.

6089. *Mr. Chapman.*] You do not think they are suffering very much from the defects of the building?—No; I think the present building gives to the patients who use it a much better sanitary home than their own homes.

6090. In that connection a good deal has been said about results, statistics, and so on. Do you consider that the mere quotation of statistics throws any light on the question?—I think statistics can be turned all round, inside out, and upside down; you can treat them any way you like. In connection with statistics shown in Lawson Tait's book I take this stand: that at the very first you have to take in the question that New Zealand hospitals are partly State institutions, and to a small extent only voluntary institutions. Now, British hospitals are on the contrary voluntary institutions. That bears on the question in this way: that the sympathies of the public are acted upon in collecting subscriptions, and a large amount of work is shown to be done for that purpose. Then in Tait's statistics, if you go through them, you will find that those from which the most full and correct returns have been got give the highest death-rates. From that death-rate it does not follow that one hospital is more unhealthy than another, but that one hospital is more active than

another. Then, again, we have to consider the intake. If you have a critical intake of patients, and a close scrutiny of them when they are admitted, and only the most serious and grave cases are taken in, the returns of the death-rate are sure to be greater than if the intake was all picked or on the voluntary system.

6091. What effect has that on the statistics?—The effect is this: that the mere statement of so-many patients taken in, and that so-many leave the institution cured or improved, and so-many die, is not to be taken as a fair index of the salubrity of it.

6092. *The Chairman.*] The statistics are apt to be fallacious?—Yes.

6093. *Mr. Chapman.*] Can you say whether, taking them generally, the class of cases are the same in colonial hospitals as in British provincial hospitals, or English provincial hospitals. One witness said that in England a large number of our cases would be infirmary cases—that is, poor-house cases, and that they find their way into the Hospital here and increase the death-rate?—I know that, because I often went to the Brownlow Hill Hospital in Liverpool—one of the largest in the United Kingdom, Dr. Alexander had charge of it—and one could not help being struck with the type of cases compared with what is found in the Liverpool Royal Infirmary. There is a provision existing in Dunedin Hospital for the intake of patients. We take those that demand hospital treatment, and they are admitted by the house surgeon: whereas, in the Old Country, a certain number of beds are allotted to the various surgeons, and the surgeons pick their cases. Thus, one man will devote himself to a certain class of cases, and another man will take another class of cases, and so fill their beds and keep them well filled with good cases from their point of view to get good results.

6094. *The Chairman.*] What do you mean by "good cases"?—Cases from which they can expect good results; and they leave to flow into the workhouses those cases which give bad results. That is a well-known fallacy.

6095. Do the poor-houses take in the sick cases?—Yes.

6096. *Mr. Chapman.*] As to the death-rate in colonial hospitals comparing with some of the provincial towns in the Old Country: is this comparison, as a rule, of value as showing the condition of a colonial hospital?—No, one would require other things—more clear details as to age, constitution, and method of admission. As bearing on that, I would like to place in the hands of the Commissioners an article which appeared in the *Sanitary Record* of 1889 (page 213), in which the writer gives details relating to King's College Hospital from 1879 to 1883, and the proportion of the death-rate there, which is lower than our death-rate. They gradually rise from 4·29 in 1879 to 7·75 in 1888. I say that the presence of a medical school attracts to this city,—I undoubtedly think so,—a greater proportion of grave cases than the Hospital would otherwise get.

6097. *The Chairman.*] Do you know that for a fact, or is it a suppositious case you are putting?—No, I know it is the case. I will put it in this way: more people now come from other parts of the colony, so far as my experience goes, than formerly did, for treatment in this place.

6098. And you believe it to be due to that fact?—Yes, I believe it is.

6099. *Mr. Chapman.*] Do you know it as a fact that a number of people do come to Dunedin from other places to be treated?—Yes. Let us take the statistics in connection with that matter. Take Lawson Tait, at page 40 of his book. These are statistics, I think, which tell favourably in view of the gynecological practice in Dunedin Hospital. We find that in Soho Square Hospital, out of 337 patients, 5·7 per cent. died, as quoted by him in that book.

The Chairman: In what years?

Mr. Chapman: From 1870 to 1875.

Witness: That is the average number for those five years.

6100. *The Chairman.*] Out of 337 patients, what is the average number for last year?—5·7. In Vincent Square Hospital, London, with an average of thirty patients per year, 4·35 per cent. died.

6101. *Mr. Solomon.*] What date was that?—From 1873 to 1875. I am quoting these statistics just to illustrate my contention. Now take the Dunedin returns for 1888. Out of forty-two patients—so far as I can make out from the Registrar-General's return that is the number—4·75 per cent. died. And taking the 1889 returns of gynecological patients—of whom there were sixty-two—3·27 per cent. died. Birmingham, out of an average of 61·5 patients per year, 8·1 per cent. died.

6102. What date was that?—From 1871 to 1875. Now, in the series of returns presented by Sir Spencer Wells and Knowsley Thornton, the following are the proportions of deaths: In the first series of Sir Spencer Wells's, 1 in 10 per thousand; in the second series of Thornton's, 1 in 30 per thousand; in the third of Wells's, 1 in 52 per thousand.

6103. *The Chairman.*] Is not the decrease in the number of deaths owing to the improved antiseptic methods employed?—Undoubtedly it is due to that partly.

6104. *Mr. Solomon.*] Here we take in as gynecological cases Emmet's and labial cysts?—I am taking all those into account. I am giving you purely gynecological cases. Those were gynecological cases at Soho Square. The tables are comparing like with like.

6105. *The Chairman.*] I understand that, in the Dunedin returns for 1889, you have carefully eliminated all cases that would not compare with Thornton and Wells?—They comprise all kinds of gynecological cases.

6106. *Mr. Solomon.*] Are all the cases abdominal cases in Dunedin Hospital?—No. There is one thing to be remembered, that the cases you take into the Dunedin Hospital are not picked. They come in voluntarily for treatment, which is always a modifying factor. In 1889 there was only a small number of cases to judge from; it is, therefore, very difficult to do so. This is a list I have prepared. In 1887 we had three ovariotomies and no deaths, and four oophorectomies and no deaths (I may state that this return was made up for me by Dr. Copland, the house surgeon). In 1888 we had three ovariotomies and no deaths, and thirteen oophorectomies and one death—that of

L. Y——. In 1889 we had four ovariotomies and one death, but that death could not be clearly putdown to being due to the operation, as the death occurred two months afterwards from other causes. In 1889 we had seven oophorectomies and one death. In 1890—that is, during the first half of the present year—we had two ovariotomies and no deaths, and we had four oophorectomies and two deaths. The house surgeon will be able to give details as to the cause of the death in 1888—the girl Y——'s case—and these, I think, will clearly show that it should not be put down to "hospitalism."

6107. *The Chairman.*] What was that death due to then?—I do not know. I have the details of it somewhere, but I have forgotten them; but I know that it can be explained as due to causes other than "hospitalism." In 1889 there was the case of J. G——, who died two months after the operation, and the house surgeon has informed me that that case could not be put down to "hospitalism."

6108. *Mr. Solomon.*] What did she die from?—Phthisis and intestinal obstruction. In the oophorectomy cases in this year (1889) of J. M——, which was dealt with by Dr. Stenhouse in his evidence. During this year there have been two deaths from oophorectomy. One was that of E. T——, whose case has been referred to this Commission to inquire into.

6109. *The Chairman.*] What was her death due to?—Hemorrhage. The second case was that of M. H——, but the cause of her death is also doubtful. As bearing on the healthfulness of our Hospital, I have taken details of some of the hernia operations that have occurred here. In 1887 there were four operations for hernia.

6110. Cannot you give us the totals?—During three years, from 1887 to 1889 (inclusive), there were twenty-six operations for hernia, and four of these died. The case that died in 1887 was one of strangulated hernia, in which there was gangrene of the bowel.

6111. *Mr. Solomon.*] Where do you get these figures from?—From the house surgeon.

6112. *Mr. Chapman.*] Are they obtained from the official returns?—Yes.

6113. *The Chairman.*] Are they the printed returns?—I do not think they are given in detail in the printed returns.

The Chairman: The house surgeon is then the proper person to put them in.

Witness: Am I allowed to put in returns made up by myself from the public records? They are taken from the Inspector-General's reports for those years. I took the following hospitals: Dunedin, Christchurch, Auckland, Wellington, Oamaru, Invercargill, and Hokitika. I took the total number of indoor and outdoor patients, the total number of gynecological cases, and the total number of deaths from gynecological operations. I took from the year 1885 down to the date of the last report. I have not had time to work out the percentages. This return shows the proportion of indoor patients to deaths, the total number of gynecological cases, the total number of erysipelas cases, and the total number of septicæmia cases that have occurred in these hospitals as far as the returns show. I have excluded puerperal cases from the list, because I did not take them right through. [Return handed in: Exhibit lix.]

6114. *Mr. Chapman.*] Compared with other hospitals in New Zealand and with hospitals in the other colonies, you say, do you not, that the Dunedin Hospital comes out favourably with regard to septic mischief?—That is the inference I have drawn.

6115. Christchurch Hospital seems to be held up as a model for New Zealand?—Christchurch Hospital is the model one for New Zealand from what I have been given to understand. I can only speak of what I know and what I have seen.

6116. Do you consider it a good model?—A fairly good model, with some defects. If you will permit me to point out the defects I will do so, if the Commissioners think it desirable.

6117. How do these statistics work out? How do they compare with Dunedin as to results?—I have not worked them out as compared with Dunedin. I only heard them the other day when they were produced here, and I was much struck with the statements then made.

6118. *The Chairman.*] What are the defects of the Christchurch Hospital?—The chief defect is in the position of the waterclosets. They are on the plan of the Herbert Hospital. The cross-ventilation in these closets is in such a position that the air would be wafted towards the vent-inlets of the ward in certain directions of the wind. This plan has been strongly disapproved of by the Herbert Commission. What I consider to be another defect—I have been critically through the Christchurch Hospital, under the guidance of Dr. DeRenzi—is the trunk containing warming-tubes. The Hospital is not built sufficiently high above the basement-floor to allow these things to be thoroughly cleaned. At the time I was visiting the Christchurch Hospital there was a derangement of the whole of these things.

6119. Is it apt to go out of order?—It has been objected to in many places. The objection has been strongly raised to much of this complicated apparatus, especially in the channel-ways, where the air is admitted to the ward, because it favours the accumulation of dust and germs, besides being apt to get out of order. [Exhibit liv. handed to the witness.] I wish to say, first of all, in regard to this return, that it contains a large number of cases which cannot fairly be called operations.

6120. How many?—I really do not know the number.

6121. Have you carefully gone through the return?—I have not had an opportunity of seeing it.

Mr. Solomon: There were fifty minor operations.

Witness: But I do not accept your returns.

6122. *The Chairman.*] How many of these cases should be included, do you think? Are you not able to criticize it?—A mere cursory examination of it shows that there is a very large number of cases included in that return which would never be thought of being included in our return.

6123. It is not a question of what would not be. Are they not included in your return?—Well, they are not included in the Dunedin returns.

6124. Are those simple cases that you refer to?—Yes.

6125. And you say that the Christchurch return includes simple cases which are not included in the Dunedin return?—Yes. Perhaps it would be better if I were to leave Dr. Copland to analyse this return, as he was my guide in this matter.

6126. But I understand you to adhere to your statement that the Christchurch return contains a number of operations that are not included in the Dunedin return?—Certainly; a very large number.

6127. *Mr. Chapman.*] You can say that as a general conclusion from reading over that paper?—Yes. I find a case of radical cure of hernia and of death resulting from it in the return used by Mr. Solomon the other day, but I cannot find it in the Hospital book.

6128. *Mr. Solomon.*] The man's name was D. H——, and he was operated on on the 30th November?—Well, if it was put down as a case of radical cure of hernia it is grossly unfair to the surgeon and to the Dunedin Hospital.

6129. But he was operated on for strangulated hernia?—That is a misleading statement. I am clearly given to understand that it was for strangulation of the bowel. I take this case as a fair illustration. I say that before you can compare one hospital with another on the point of these operations you must know all the conditions under which the operation is performed. What may be called radical cure in one hospital is a totally different thing under another surgeon.

Mr. Solomon: We do not say that this man's death was due to the operation, but that death occurred after the operation.

6130. *Mr. Chapman.*] But you give that case as an instance in support of your statement that cases are wrongly included in your return?—Yes; and I say that the use of the case in that way is unfair both to the Hospital and the surgeon who operated.

6131. *The Chairman.*] It was a death after operation?—Yes.

6132. But was not caused by the operation, and you desire to draw attention to that fact?—Yes.

6133. *Mr. Chapman.*] But probably the Christchurch returns have carefully kept that out?—I cannot say anything about that.

Mr. Solomon: In the Christchurch return you have every operation that was performed there during the period named, and every death that occurred after operation.

6134. *Mr. Chapman.*] Those are the only observations you wish to make in regard to that return, apart from any information which has been supplied to you by the house surgeon?—Yes.

6135. And I understand that the information supplied to you by the house surgeon is to be found in the operation-book?—Yes.

6136. Now, in connection with the subject of septicæmia, we have heard a great deal about several cases that have occurred in the Hospital. Have you directed your attention to Mrs. S——'s case?—Yes.

6137. Do you know anything of that case yourself?—Not personally.

6138. You have heard the evidence of the various witnesses?—I heard the evidence of Dr. Batchelor and the various witnesses.

6139. *The Chairman.*] Those are the sources of your information, and that is all you know about it?—Yes.

6140. *Mr. Chapman.*] At all events, you heard the letter that Dr. Batchelor wrote on the subject?—Yes, I heard that read.

6141. You have also seen the *post-mortem* certificate, have you not?—Yes.

6142. And you were present at the *post-mortem?*—Yes.

6143. Did you form any conclusion as to whether this woman's death was due to the condition of the Hospital?—The conclusion that I have formed is that, before her death can be placed down to any alleged insanitary state of the wards, other causes must be eliminated.

6144. *Mr. Carew.*] Other possible causes, I suppose?

6145. *Mr. Chapman.*] May there have been other possible causes not mentioned?—Yes; the temperature for one, if the state on the chart is correct.

The Chairman: I think that the temperature chart carries no weight with it. The Commissioners have consulted together, and are clearly of opinion that it is quite broken down as a piece of evidence. It cannot be assumed that the temperature was shown on the chart. (To Mr. Carew): You agree with that.

Mr. Carew: Yes.

6147. *Mr. Chapman.*] You can only express your opinion on an assumption which may not be well founded?—I think that other causes besides the temperature chart should be eliminated.

6148. If the entry in the clerk's record of a sticky yellow discharge is correct, would that be a cause to be eliminated?—Yes; the sticky yellow discharge might be a cause of infection.

6149. *The Chairman.*] Would it necessarily be a septic discharge?—I cannot think of it except as a clearly-defined purulent discharge.

6150. Would you call it a purulent discharge?—I never get any discharge which does not contain some pus. I cannot think of such a sticky yellow discharge which does not contain a certain amount of purulent element.

6151. Such a discharge must, in your opinion, have been purulent?—It must have contained purulent elements.

6152. *Mr. Chapman.*] These records that were kept by the doctor's clerk, what do you consider is the duty of a surgeon in regard to them?—I can only speak for myself. I read them over myself. You see, each man is a law unto himself.

6153. *The Chairman.*] Do you read over from the case-book what has been written?—I read the notes that are made on slips of paper.

6154. Even when you made a special examination of the patient yourself?—That is my order of procedure in these cases.

6155. You think it necessary to take notes as a rule?—The students do not always do it.

6156. But you generally get them to take notes on the cases?—Yes, they take what notes I want, and I read them over.

6157. In a particular case, where you are making a special examination to satisfy yourself whether it is a case that should be operated on or not, would your opinion in that case be influenced by what the clinical clerk had written?—I should certainly read it.

6158. Do you always read it?—I always read it in cases of this kind.

6159. *Mr. Chapman.*] Are these records taken for any useful purpose?—They are taken practically to keep as a record. In some cases, where we do not think the records of sufficient importance to be kept, they are just kept along with the Registrar's papers.

6160. Are there any other matters that would have to be eliminated?—The only matter—I do not attach much weight to it either—is as to whether there had been any degree of pre-existing pelvic peritonitis.

6161. Was there anything to suggest it?—One of the ovaries was dragged in towards the side of the womb, acording to the record that was read out here.

6162. You were present at the *post-mortem:* did you not see it?—If there were any symptoms of it they would be masked by the more recent inflammation.

6163. *The Chairman.*] Are you speaking of what you saw at the *post-mortem?*—I am speaking of what has been read over from the case-book. I take the expressions just as they appear there. It is not my duty to add to them.

6164. Would it suggest, as one possible consequence, previously existing peritonitis?—Yes.

6165. Why do you suggest that?—Simply on account of the statement in the case-book that one of the ovaries was said to be drawn in towards the uterus.

6166. *Mr. Chapman.*] You say that you could not see that yourself at the *post-mortem?*—Oh, no.

6167. *The Chairman.*] You mean that the symptoms were not observable on account of there having been recent inflammation, or that they were absent?—I say that they were masked, probably by the recent inflammation, and I therefore did not see them at the *post-mortem.*

6168. *Mr. Carew.*] Might they have been there?—I have my doubts as to whether they were there or not.

6169. *The Chairman.*] It only states, "no inflammatory changes"?—That is a very minor point.

6170. *Mr. Chapman.*] Does the pathological features of Mrs. S——'s case give any guide as to whether it was a case of septicæmia arising in the Hospital?—The only feature in connection with the *post-mortem* was that the womb was larger than normal, and its interior—I was present, and am speaking of what I saw—contained purulent fluid, also the tubes leading from the womb. That would indicate another source of infection to be eliminated before the Hospital could be fairly charged with causing any septic mischief.

6171. Do you indicate that as another source that would have to be eliminated? Was it determinative or indeterminative?—I do not clearly understand your question.

6172. If it were wished to show conclusively which cause it was due to, would that be determinative evidence?—Yes.

6173. Or would it be consistent with either view?—Yes, it would be consistent with either view.

6174. Is Emmet's operation one that is regarded as free from danger?—I do not regard it as free from danger.

6175. Have you any authority for that statement?—Yes, I take Hart and Barbour for one, and another is a discussion on this very operation which occurred before the Obstetrical Society of New York in 1888, in which several cases of inflammatory trouble and several deaths following this operation are recorded. I think it is only fair to say they put it down to septic trouble, but the exact determination of that septic trouble is not stated.

6176. By that you mean, I suppose, that whether it was from internal or external sources is not stated?—That is so.

6177. You have also referred to English authorities on it as an operation not entirely free from danger?—The English authorities are all mentioned in the course of that discussion.

6178. *The Chairman.*] Will you mention an authority?—The most direct English authority is a little book by Croom, in which he points out the indications where operation is justifiable (pages 149 to 151).

6179. Tell us, generally, what he says?—He just quotes a certain class of cases in which the operation may be done, and other classes of cases in which it may not be done. Mr. Berry Hart points out how many deaths have been recorded after this operation.

6180. *Mr. Chapman.*] I think that one authority speaks of nine deaths?—Not nine deaths altogether. One man speaks of having one death, another man says he had two, and another says he had one. One man speaks of having had six deaths, and also forty-three troublesome cases of serious inflammatory mischief, following this operation.

6181. I understand you have something to say on the question of nursing?—Yes. I should like to clearly place my position with regard to the nursing before the Commissioners. I hold that it is necessary in this colony to have some place where male nurses can be trained as well as female nurses. Trained male nurses are a desideratum in the community, more especially in this colony, where we have a large number of small country hospitals. The want of them is also occasionally felt in private practice, and I look on it as being the duty of public institutions to train a certain proportion of male nurses. But I am a strong advocate of the training of nurses of both sexes. That, briefly, expresses my view on the question.

6182. I want to ask you this question: You have attended consultations from time to time at the Hospital?—Yes,

6183. Have you at any of these consultations heard the alleged insanitary state of the Hospital brought up as an element in the question whether or not an operation should be held?—Not until this inquiry came about.

6184. May we say, then, not until Mrs. S——'s death?—Yes.

6185. Have you been at many of these consultations?—I have been at most of them since I rejoined the Hospital staff.

6186. Have you consulted with all the members of the staff?—Yes; I have been at nearly every consultation. If I can go to a consultation I make it a point of honour to go.

6187. And you say you have not heard such an allegation brought up in connection with the question whether an operation should be performed?—No.

6188. Now, we have heard something about deaths after operation. [Return for 1889 of deaths after operation handed to witness.] Suppose that the facts connected with that list of persons who died after operation be true, what do you say to them?—Most of those cases I should expect to die, and with regard to some of the other cases I should require further information before I could give a decision.

6189. And with regard to those other cases, is it not perfectly evident that they too must have died?—The greater probability was in favour of their death than otherwise. That, I think, is the fairest way of putting it.

6190. *Mr. Solomon.*] How many cases are there in that return?—Fourteen.

6191. *Mr. Chapman.*] There is a list of similar cases for 1890—eleven cases in all. Are there any cases there which would have resulted in death had they gone into the Hospital or not?—Yes, there are several cases of that kind.

6192. They were, in fact, desperate cases—too far gone?—Yes. [Return here handed in: Exhibit lxi.]

6193. *Mr. Solomon.*] Let us dispose of Mrs. S—— first. We have been told by Dr. Jeffcoat with characteristic insistence that it is highly improbable to expect that Mrs. S——'s death could have been caused by septic poisoning from a wound travelling from the uterus to the fallopian tubes and thence to the peritoneal cavity. Do you agree with that?—I tell you that I agree with the statement, but I disagree with his reasons. I agree with that part of his statement in which he says it is highly improbable that she died from suppuration passing from the womb to the fallopian tubes and thence into the peritoneal cavity; but I disagree with him in that part of it in which he says it is not probable because he would have expected it to find its way through the lymphatics.

6194. Do you think it highly probable that the poison was there?—I do not think so. I would not expect to find it.

6195. It is not a question of what you expect. Do you think it is at all probable?—I do not think so.

6196. Listen to what Dr. Coe says on the subject of Emmet's operation: "Dr. Coe wrote that it seldom happened to a pathologist to observe in the course of six weeks four fatal cases of minor operations on the cervix uteri. . . . . Dr. Wells had reported forty-three cases of serious inflammatory trouble after Emmet's operation, with six deaths. . . . . In Dr. Coe's opinion death was invariably due to peritonitis from direct extension of the inflammatory process from the uterus to the tubes; he had in all his previous autopsies in such cases found appearances which led him to infer that the inflammatory process was not cellulitis, but peritonitis; . . . . that the peritonitis in such cases was essentially septic, and not simply traumatic"?—Quite so.

6197. You will see by that that Dr. Coe gives it as the invariable cause of death?—But that does not exclude other causes.

6198. In the face of what Dr. Coe has placed before you, can you now say that it is improbable that the poison travelled from the uterus into the fallopian tubes, thence to the peritoneum?—I would not say that it is improbable, but I say that there are more probable explanations of how the septic infection occurred.

6199. I will now read to you from an American work (page 698) in which Coe makes the following remarks: "Dr. H. C. Coe, the pathologist to the Women's Hospital of the State of New York, in a paper entitled 'The Exaggerated Importance of Minor Pelvic Inflammations,' makes the following statement: 'Of half a dozen fatal cases of hystero-trachelorrhapy and incision of the cervix, in which I have enjoyed the rare opportunity of studying carefully the consequences, in every instance the cause of death was acute diffuse peritonitis. The inflammation could be traced straight up from the wound along the mucous membrane of the uterus as an endometritis, along the tubes as a pyosalpinx, and then to the peritoneal cavity. In none of these cases was there any evidence of acute cellulitis, although old cicatrices were not wanting.'" In the face of that opinion, is there any foundation whatever for Dr. Jeffcoat's assertion?—I am not Dr. Jeffcoat: that is his opinion. I think that that statement is too positive. I partially agree with it, but I do not think it excludes all the channels.

6200. There is a case of death after an Emmet, and we are told that the cause of death in such cases is invariably diffused peritonitis; and the doctor who attended to the case and examined the woman declares that in his opinion the poison travelled directly from the uterus to the fallopian tubes, and thence to the peritoneal cavity. Do you think that is unlikely?—To that question I make answer that I should require more details before I could give in my adhesion to that.

6201. In your opinion, is there any other foundation for a doctor saying it is highly improbable—almost incredible—to expect that septic poison would take that route?—No, but I think there are other sources which are fairer to your client.

6202. It is not at all unlikely, is it, that a person operated on for Emmet, under the conditions that Dr. Batchelor says existed, should become poisoned from the presence of bacteria in the air of the ward, supposing always that what we have heard is really what happened?—That is, of course, assuming it to be so.

6203. Yes, and on that assumption is it unlikely that the wound was poisoned by bacteria in the air of the ward?—Yes, but it may have been obtained through another channel. You must clearly understand that.

6204. You thoroughly understand what I am saying: assuming that this lady was poisoned by bacteria in the air of the ward, is it at all unlikely that the poison travelled in the way I have described? In short, is it unlikely or improbable that what we are told did happen would have happened?—If she were poisoned by the bacteria in the air of the ward it might have happened, or it might have gone into the lymphatics, or directly into the blood.

6205. Have you no cellular inflammation?—No.

6206. Are you sure of that?—Yes.

6207. But I do not distinguish between septicæmia, sapræmia, and pyæmia?—But I do.

6208. Do you mean to say that modern science says that septicæmia, sapræmia, and pyæmia are anything more than clinical distinctions?—They are a good deal more than clinical distinctions.

6209. Does modern authority say so?—Yes.

6210. Listen to this: "In the various degrees of pyæmia" . . . [Extract not supplied.] Is that true or is it not?—It is not true, whoever your authority is. I know lots of authorities say that, but I take my standpoint on what I believe to be more correct pathology.

6211. Then do you disagree with that authority?—I do.

6212. What do you say yourself is the distinction between septicæmia and pyæmia?—I do not regard pyæmia as a disease *per se*. I look upon it as merely an extension of a suppurative process from its primary seat of infection into secondary foci—into different organs and places. Now, septicæmia must be distinguished from sapræmia. Sapræmia is septic poisoning — ptominic poisoning due to the absorption of a chemical poison manufactured in some putrefactive process external to the body. It is not attended by any gross pathological changes observable after death. It is a poisoning—putrid poisoning; while in septicæmia proper, *i.e.*, true, progressive septicæmia, you have an infective process to deal with. It is due to the entrance of septic organisms into the system and their multiplication there. Here you have a good deal of pathological change observable.

6213. Now, we have heard one learned gentleman who has gone into the witness-box and said that if you have these germs in the atmosphere which produce septicæmia, and that if one person in the ward is poisoned and dies, and another person is similarly affected but does not die, it is impossible it can be septicæmia, because, if it had been, both persons must have died. What do you say to that?—You may have degrees of poisoning.

6214. Now, come, Dr. Coughtrey, tell us in plain English, is it not nonsense?—I should not say it was nonsense.

6215. Is it sense?—It is not according to my ideas pathologically.

6216. Is it reasonable?—Not in my view of modern pathology.

6217. Dr. Jeffcoat has stated that it is improbable—I think he said incredible—to expect that if this woman was poisoned in the ward the poison could have travelled in the way I have suggested?—If he said that, I could not agree with him. I may say that I go further than even the pathologists here go in discussing this matter from a purely scientific standpoint. I should require to be put in the same position as if I were supposing it to be a case of poisoning by alkalies: that is, I should require the presence of the specific germs to be made out.

6218. *The Chairman.*] Your answer amounts to this: While Dr. Batchelor's theory is that the poison travelled from the uterus to the fallopian tubes and thence to the peritoneal cavity, your answer, as I understand it, is that it is not unlikely Dr. Batchelor's theory is correct?—Yes; but I say there are other explanations.

6219. And you cannot agree with Dr. Jeffcoat's view of the subject?—Not as expressed by Mr. Solomon in his question.

6220. That is, if Mr. Solomon has correctly stated it?—Yes.

6221. But Dr. Jeffcoat said it was impossible?—Well, uterine liquids can pass that way.

6222. *Mr. Solomon.*] What I want to ask you is this: Is it not reasonable to expect that the septic poison in this case of Mrs. S—— would be absorbed?—Yes; and it might infect the system by different channels.

6223. Do you disagree with this: Dr. Roberts tells me that the two theories are quite consistent: that the poison might be absorbed either through the lymphatics or through the tubes?—Or through the blood-vessels. In the first place, if it does, you will find an inflammatory appearance of the tissues in this region. In Mrs. S——'s case she was specially examined to see whether this was so or not.

6224. And, if there was no evidence of that, does it not show that the poison went along the route that Dr. Coe says it does?—No.

6225. No evidence whatever?—No. I have made a great many pathological examinations in my time, and I do not think Dr. Roberts is entitled to say that. I saw everything at the *post-mortem* as closely as he did.

6226. He says they found pus in the tubes, but that there was nothing to show antecedent chronic mischief in the tubes?—I do not think you can say that, in fairness.

6227. *The Chairman.*] You were present when these notes were taken down. Did you differ from those notes?—I never opened my mouth.

6228. *Mr. Solomon.*] Did you differ from them in your own mind?—Yes, in one or two things.

6229. Tell us now in what points you differ?—In this respect: I looked upon the womb as being much larger than it is there stated to be. I cannot give you the exact details. That was the impression that was in my mind at the time.

6230. In your opinion death resulted from acute diffused peritonitis?—Yes.

6231. Following Emmet's operation?—Yes, acute peritonitis, which is one of the manifestations of blood-poisoning.

6232. You say there was distinct evidence of enlargement of the womb?—Yes: there was distinct evidence in the womb of the presence of endometritis.

6233. Was there any evidence of acute endometritis?—You cannot go so far as that.

6234. Without the woman being ill?—But she was ill.

6235. You say you can get acute inflammation of the interior of the womb without the woman being ill?—You assume there was acute inflammation of the womb.

6236. Did the appearance not show that?—It showed that there was some mischief there, which might have been chronic as well as acute.

6237. If it were chronic would not the walls be thickened?—The walls were thickened.

6238. Not to such an extent to indicate the presence of chronic mischief?—The walls were not examined with sufficient care.

6239. How do you know that?—Because I was there to see.

6240. Dr. Roberts says that the walls were not so thickened. Can you contradict that?—Yes.

6241. And you say to the contrary?—I do.

6242. And you declare the walls were not examined with sufficient care to see if there was evidence of chronic metritis?—Yes.

6243. Can you have congestion without thickening of the wall?—No.

6244. Are you sure of that?—Certainly.

6245. Would there be thickening in an acute case?—Yes.

6246. Is there anything in that paragraph in the report on Mrs. S——'s death which indicates or excludes its existence?—No.

6247. Did you form an opinion that it was there?—Yes.

6248. Did you tell us about it to-day before this?—Yes; I told it to Mr. Chapman in my answer about the yellow sticky discharge.

6249. You told us a short time ago that "the only feature in connection with the *post-mortem* was that the womb was larger than normal, and that its interior contained purulent fluid, as did the tubes leading from the womb." Where, in that, do you make mention of chronic metritis?—You will see it is one of the questions put to me immediately after the adjournment.

6250. If you, as a careful surgeon and a witness called to tell us all you knew about this case, were asked by your counsel to give us what causes you would eliminate when deciding what caused this woman's death, are you satisfied in your own mind that she was suffering from chronic endometritis?—I have not said that.

6251. But you have not said to us that it should be eliminated in accounting for the woman's death?—I did say so, because of the large womb combined with the yellowish discharge—purulent fluid.

6252. Do you tell me that the fact of the womb being enlarged and there being a yellowish fluid is accounted for by acute disease?—Do you mean acute blood-poisoning?

6253. Yes?—Of course it is, but it does not exclude the other causes.

6254. Yet you say you formed an opinion, on that, that the woman was suffering from pre-existing metritis?—Yes; and I can tell you something more. When the womb was being examined at the *post-mortem* and was found to be enlarged, Dr. Batchelor made the remark, "I knew that she had metritis."

6255. If the patient had chronic endometritis, was there anything in that to cause septic trouble?—Yes.

6256. Why? Do you mean to say that the germs may lie latent in the womb?—I want you to understand this: In the discharge in the interior of the womb the germs may have been there in a latent condition, and were capable of lighting up septic poisoning.

6257. Where do they come from?—They come in the same way that the air gets into the womb. Every examination of the vagina increases the risk.

6258. So that examination of the vagina in an impure atmosphere would open the door to these germs?—Yes.

6259. And if this woman's womb were examined three times in this impure air, and in a ward where it was known there were septic cases, there would be nothing more likely, I suppose, than that the germs should find their way into her body in the way I have described?—That may have been one source, but it does not exclude the other sources.

6260. Will you tell me other sources which are sufficient, in your mind, to account for this woman's death?—One source that occurs to me—but that I would not say is sufficient—was that, after the operation was performed, there was a raw surface over which this purulent fluid trickled down.

6261. And what reason had you to expect it there before operation?—Just as much right to expect it before as after operation.

6262. Supposing the patient was suffering from a laceration at the mouth of the cervix uteri—by the way, is not irritation produced by that, and all persons who require Emmet's operation necessarily suffer from discomfort?—I do not think so.

6263. You have just told us that irritation is necessarily produced?—Yes; but it does not necessarily follow that operations should follow all cases of laceration.

6264. Is not Emmet's operation for the purpose of allaying the irritation caused by the laceration?—Yes; that is the reason given for the operation.

6265. Is that irritation likely to be caused without there being a discharge of some sort from the patient?—No; the reason for that is that co-existent with the laceration there is some metritis or endometritis, and that is where the discharge comes from just as much as from the cervix.

6266. Supposing there was metritis in a patient, accompanied by laceration, do you think it likely that such a condition would escape a surgeon who was specially examining the patient? Do you mean to say he would not notice it?—Yes; but I do not blame him. It is a question of degree. It might be so small as not to be easily observed.

6267. But yet would be a source of danger in the operation. Where do the septic germs come from there?—From the air; you cannot avoid that.

6268. Would there not likely be a high temperature ?—That all depends.

6269. A patient might be under the doctor's constant care and supervision, and the doctor might know nothing about it?—Yes, the degree might be so small as not to be easily detected.

6270. In connection with the Edinburgh Royal Infirmary, I want to call your attention to this plan [plan produced]. You will see that the usual appendages are in the round towers and another in the lobby with cross-ventilation?—The statement in that book is partially correct and partially incorrect. There is a fault even in the construction of that plan. [Witness produced his copy of Edinburgh Royal Infirmary plan, and pointed out its agreement with his statement.]

6271. What happened to Mrs. S—— we might have expected to happen if she were poisoned from the air of the ward?—Quite so.

6272. Now, we have been told that in the same ward there was a patient discharging pus from a suppurating wound, and that that discharge had been going on for two months previous?—Yes.

6273. Such a wound as that, every one of the witnesses is agreed, would be likely to contaminate the air?—Quite so.

6274. That being the case, remembering the number of beds that there were in the Hospital, the insufficiency of the ventilation, and the presence of these septic cases, I ask you, do you think it at all unlikely that Mrs. S—— would have been poisoned in that way?—I think you cannot eliminate that source as a cause.

6275. Is it anything surprising that she should have been so poisoned?—I am not surprised at her being poisoned, or, rather, I would say it is not unlikely on your assumptions.

6276. Is not the probability very much increased by the fact that in the same week you get septic symptoms appearing in the same ward from a woman who has been operated on for labial cyst?—Not necessarily.

6277. Why do you say "Not necessarily"?—Well, you see, all our differences are differences because you do not understand our terms. In these cases of labial cyst it is extremely difficult to keep on the dressing well, while the operation is one that is frequently attended by suppuration no matter how skilful the surgeon may be.

6278. Knowing there was a case in the same ward in the same week, and that a woman had become poisoned, does not that fact lend colour to the assumption that the other one was similarly poisoned?—We at once come to quarters again. You have to take Mrs. S——'s septic case away, as she was the initial septic case in that ward.

6279. Mrs. P——'s was the first?—She was in the ward some time before that. Mrs. S—— was first, Mrs. T—— was next, and then sepsis appeared to show itself in Mrs. P——.

6280. But was Mrs. S——, although she was a septic case, in a position to infect other cases?—Yes.

6281. Can you show me any authority for that?—It is a well-known rule that a clearly-defined case of septic infection must be isolated from the ward for the sake of the other patients in it.

6282. Before there is a danger of infection must there not be a discharge? Where do the germs come from?—The germs come from the dry secretions in the wound. The particles would just as easily get into the atmosphere as from any other case.

6283. Now, we have the fact that Mrs. P—— and Mrs. T—— became subsequently poisoned within a few days of Mrs. S——. Does or does not that fact lend weight to the assumption that she was poisoned?—I do not understand your question. You are introducing a well-known trick among lawyers of putting several questions at once—the fallacy of many questions.

6284. Is it or is it not the fact that Mrs. P—— and Mrs. T—— developed septic symptoms within a few days of Mrs. S——'s death, and I ask you, does not that fact lend probability to the assumption that Mrs. S—— was poisoned by the bad air of the ward?—I do not think so.

6285. Does it lend probability to it?—I do not think you can fairly say that. At the same time you cannot fairly exclude it.

6286. Now, take the whole thing generally. I ask you, as a skilled medical expert and as a man, this question: Suppose we have Dr. Batchelor in his outside practice performing several operations with success, that we find him operating upon a healthy person for a minor operation, in which the young woman contracts acute peritonitis in a manner quite consistent with the impure condition of the Hospital, and in the same week we have a woman operated on for labial cyst who also contracts symptoms of septic poisoning; and we have yet another woman who had almost totally recovered, yet developed the same symptoms—in view of all these things, I ask you, is there not thrown on your mind a somewhat strong conviction that the air in which these women lay must have been impure?—No; I would not go beyond a suspicion.

6287. You admit that there would be a suspicion that the air was impure?—Yes.

6288. Then, is it at all unlikely that Mrs. S—— would have been poisoned by the air in that ward?—I would not exclude the air in the ward.

6289. In that case, would not the results be exactly the results that have happened?—I have not subscribed to that, and will not do so. I cannot exclude the air of the ward any more than I can exclude the other sources of infection. These germs cannot be formed inside; they come originally from the air.

6290. Supposing it is admitted that the Hospital is imperfect, as all admit it to be, is it at all reasonable to expect that you would ever get a result you could positively trace to the imperfections of a ward?—No.

6291. You have told us it is impossible to expect to ever positively trace a result to the imperfect state of the Hospital?—Quite so.

6292. Can you ever expect to get nearer to a positive result than you have gone—that is to say, assuming the imperfections are not unlikely to be the cause of the results, seeing that a suspicion

has been raised in your mind as to the cause of these results, do you say that if the results were so caused it would in all probability be what you found it to be?—My answer is, that I always bear it in mind as one of the factors.

6293. You have already told us that you have not known of any evil results from the defects in the Hospital?—I have not known any.

6294. That comes directly as a sequel to what one person has already said in the witness-box. What practical evils could you expect to trace positively to the defects in the Hospital?—The practical evils are simply those which have shown themselves in many ways.

6295. They would be what, for instance?—The prolonged duration of the cases.

6296. Can you give us examples of that during the last year or two? Is B——'s case an illustration?—I do not think it would be fair to you to take that case.

6297. Do you expect that, where these evils exist sufficiently active to have attention drawn to them, that everything may go on all right for a long time, yet accidents will happen occasionally? Or I will put it in this way: Is it not a fact that, where these defects exist, it is only occasional evils that result in attention being drawn to these defects?—I should expect it to be only occasional.

6298. We have been told throughout this inquiry by fully a dozen gentlemen that this Hospital admittedly violates most of the modern rules as to hygiene; that it admittedly violates most of the rules as to ventilation, as to closets, kitchens, lavatories, bath-rooms, walls, floors, and bed-space?—Quite so.

6299. Is it not a fact—I do not speak of before 1875—that within the last fifteen years the practice of medicine has taken great strides in respect to sanitation?—Undoubtedly it has.

6300. And with modern surgeons and physicians alike this question of sanitation is regarded as one of the most important elements in the treatment of the sick?—Undoubtedly.

6301. Now, in the first place, can you, as a reasonable man, agree with the statements of some of the witnesses that, though this Hospital violates all these principles of sanitation, in their opinion it does not make very much difference?—I think you cannot eradicate these violations from your mind; at the same time they can be overcome, as I have pointed out, by more constant supervision and by the more careful use in the surgical wards of antiseptic methods.

6302. Does it not necessarily follow that, as the Hospital contravenes all these recognised rules, it must be a source of immediate danger to the patients?—Yes, in some degree, but you cannot avoid that.

6303. Do you think it can be reasonably said that a hospital that offends against all the rules of hygiene, &c., is up to the standard of most hospitals of the present day?—I do not know. When you come to look over a lot of the old hospitals you will find a tremendous number of defects in them. At the same time, I admit that our Hospital is not up to the standard of real model hospital arrangements.

6304. As to ventilation, do you think that even by intelligent supervision you can guard against the evils of imperfect ventilation, seeing the very stormy and cold weather that we sometimes have in Dunedin?—Yes.

6305. We know that in some of these wards there are patients suffering from phthisis and chest-complaints: do you think it is practicable, however intelligent the supervision may be, to efficiently ventilate those wards?—Yes. I think that the windows may be kept open, even in stormy weather, with a minimum of draught.

6306. Do you think that there would be a sufficiency of air then?—Yes.

6307. Have you tried it?—I am going on the data presented by Mr. Wales.

6308. But it is not fair to take that alone. Did you hear what Dr. Truby King had to say on the subject?—Yes. I did not exclude from my calculations the windows as the only outlet, which Dr. King did. I would point out that Buck, in his latest edition on hygiene, says that the tendency now is to go in more for simple window-ventilation, which is attended to by the nurses.

6309. You admit in your letter that the ventilation requires to be altered?—Yes.

6310. Is it not a fact that this question of ventilation is one of the most, if not the most, important questions in connection with the Hospital?—Pure air is one of the most important things in connection with a hospital. There can be no doubt about that.

6311. If we go to improve this Hospital, in order to make it a satisfactory institution, as is the aim of every one concerned in it, you would have, I understand, complete isolation wards before ventilation. Is it not a matter of opinion whether ventilation is not the most important thing that should be taken into consideration at once?—I think it is rather a matter of secondary importance in the Dunedin Hospital.

6312. Because of urgency, I understand?—Yes. I think very strongly about isolation—especially of erysipelas cases.

6313. Do you think the statement of one of the witnesses, who when asked as to the position in which he should place the question of ventilation replied, "Oh, somewhere about the gynecological ward," a reasonable statement?—I should simply say that I do not agree with him.

6314. Did you agree with Dr. Stenhouse's "balmy breezes"?—No.

6315. By the way, I may tell you that Dr. Ogston does not at all agree with you about the healthiness of the site of the Hospital: do you disagree with him?—I do not know whether I disagree with him or not.

6316. He has told us he considers it one of the unhealthiest parts of the town?—I regard him as a specialist, and specialists have exalted notions as to the paramount importance of their specialty. It is a choice of two evils. If you have the Hospital too remote from the town it would be practically shut off from the people and the Medical School. If it is in the town it should be near to the Medical School, and the Medical School and the Hospital can be of service to each other.

6317. There seems to be a concensus of opinion against the gynecological ward?—I am not opposed to having a gynecological ward in due time. I think it is a very desirable thing.

6318. You were asked about the baths: do you regard them as a very serious defect?—I do not.

6319. Are they a serious defect?—No. I would not pay much attention to the baths at present. I would not do any more to the present Hospital than is expedient.

6320. *The Chairman.*] I understand you to say that you are opposed to extensive changes because you do not think that it should be looked on as a permanent hospital?—That is my view clearly, and consequently I do not care to propose any extensive changes in the present Hospital.

6321. *Mr. Solomon.*] You have already told us that the system of ventilation is defective?—Undoubtedly it is. It would be much better if the wards could be ventilated from both sides.

6322. Under those circumstances, are not the evils of overcrowding aggravated?—Yes.

6323. And the fact that the waterclosets open directly into the wards, and that it may occasionally happen that the closets may be left without being emptied, is likely to increase the inconveniences, is it not?—Undoubtedly. I think that in the meantime the suggestion made by one of the witnesses during this inquiry should be adopted—viz., connecting the closet flush with the door, so that the latter might act as an automatic flushing process.

6324. A suggestion made by another witness was that wax-cloth should be laid down on the floor of the wards: what do you say to that?—I think you would get chinks in that.

6325. Do you approve of that suggestion?—I do not.

6326. Do you think that the fact of ten cases of erysipelas having arisen in this Hospital in eighteen months is a satisfactory condition of affairs?—I do not think that ten cases of erysipelas have arisen here.

6327. But we must assume that there have. On that assumption, do you think that ten cases of erysipelas having arisen in our Hospital in that period is satisfactory?—No. At the same time, I think it is only fair to say that I do not know of any hospital wherein erysipelas has not arisen, even in well-ventilated hospitals, as far as I can judge from the records I have read.

6328. But in a hospital containing, roughly speaking, a hundred beds, where the crowding and defective ventilation are such as we have had explained to us, the fact that ten cases of erysipelas should have arisen within the Hospital in eighteen months is not a satisfactory state of affairs, is it?—At all events, I do not think that they should arise.

6329. Their arising in such numbers shows, does it not, that there must be something wrong?—Well, I should inquire into the causation of the cases.

6330. You would first of all look after the sanitation, would you not?—I should inquire into the sanitation and as to the causation of each case.

6331. We have been also told by Dr. Lindo Ferguson that, in his experience as an ophthalmist, he has never heard of septic trouble following an operation for iridectomy. Have you ever heard of such a thing?—I do not know that I have.

6332. And he has further told us that in Dunedin in one week he performed three operations—two cases of iridectomy and one of cataract extraction, a very serious case, which was performed outside, and which went on well; but that in the two cases in the Hospital septic poisoning followed the operation most unaccountably. Does not that go to deepen the suspicion already existing in your mind?—Assuming them to be facts, they do.

6333. Does that not necessarily go to deepen the suspicion the foundation of which has already been laid?—As I said before, before you can say that definitely, you must eliminate all other causes.

6334. But does not that statement, assuming its truth, deepen the suspicion that we have already laid the foundation of?—I tell you again, you must first eliminate other causes.

6335. I ask you, would not those facts, assuming them to be facts, lend probability to the belief that these deaths were due to septic influences in the Hospital?—They would weigh with me in coming to a conclusion, but that is all I can say.

6336. We have been told by Dr. Maunsell and Dr. Copland of the case of a lad who was brought into the Hospital not long ago and operated on for excision of the knee-joint, in the children's ward. Do you remember that case?—Yes.

6337. And we were further told that the boy had almost got better—was on the point of being discharged cured—when he developed a septic sore throat, and the joint broke down. Is not that also a suspicious circumstance?—That would also weigh with me. At the same time, your question intensifies the facts, for it is more than the evidence led me to believe.

6338. Was it an old trouble: it need not have been there originally?—Dr. Copland went further than what you said, and he told you that Dr. Maunsell was apt to put everything down to septic trouble.

6339. I ask you, is not the bare statement of that case in itself suspicious, and whether or not it would weigh with you?—It would weigh with me.

6340. We have also heard of the case of a man who was brought down from Lawrence in a perfectly healthy condition, and who, three or four days after his admission into the Hospital, developed erysipelas and suppuration in the leg?—That is not according to the statement made to me.

6341. Do you know that yourself, or merely from what you have been told?—I know it myself, because I have inquired into that case.

6342. Here we find a man who three or four days after his admission into the Hospital develops erysipelas of the joint and suppuration sets in. Assuming these things to be true, would they weigh with you?—They would weigh with me, undoubtedly.

6343. I ask you as a man, are not all these things that I have been putting to you—the suspicious results—what you would expect to find in an unhygienic hospital?—Not altogether; I cannot eliminate the causation of each case.

6344. But assuming the Hospital is unhealthy, are not the facts I have been placing before you, one after another, facts you would expect to find in an unhealthy hospital?—It seems to me that there gravitates towards this Hospital a large number of patients, some of whom have received this very septic poisoning before they entered the Hospital.

6345. But you say all these cases are suspicious, and would assist you to come to a conclusion as to the sanitary condition of the Hospital?—Yes.

6346. Now, let us assume for a moment that the Hospital is unhealthy, and in an unsatisfactory condition. I say that if it is so, are the suspicious cases which are occurring in this Hospital from time to time what we should expect to occur in an unhealthy hospital?—Yes. At the same time, I cannot eradicate from my mind that such cases occur in what I should call sanitary hospitals.

6347. *Mr. Carew.*] Are they consistent also with a sanitary hospital?—Yes.

6348. *Mr. Solomon.*] I want, in the first place, to put before you general results. We will take that comparative table of results in the Dunedin and Christchurch Hospitals in a given period. First, I will ask you do you agree with Dr. Ogston's Anglo-Scotch theory about Englishmen going into the hospital early, and about Scotchmen keeping out of a hospital till they were almost moribund?—Being an Englishman, you could scarcely expect me to agree with that.

6349. I ask you, is it not a farcical explanation? Is it in any shape reasonable?—I think Dr. Ogston was certainly joking.

6350. Assuming that the facts recorded in that table are true—of course, we cannot prove that what Dr. DeRenzi states there is true further than that he says it is true—you will find in that return that in the Dunedin Hospital during the period covered by the return there were 122 operations and twenty-one deaths, and in the Christchurch Hospital during the same period we have 146 operations and only one death?—I will suspend judgment in regard to that return. [Return handed in: Exhibit lxii.]

6351. But we must take it to be a fact in the meantime until it is disproved. It shows that in the last twelve months in the Christchurch Hospital they had 146 operations and only one death; that out of those 146 operations fifty-two are classed as serious operations, forty-four as medium operations, and fifty as minor operations; while in the Dunedin Hospital during the same period there were forty-four major or serious operations, fifty-three medium operations, and twenty-five minor operations. Is there any process of reasoning that will account for the fact that there should be only one death in Christchurch and twenty-one in Dunedin?—No; beyond what I know.

6352. And what is that?—I observe that in the last annual report of the Christchurch Hospital that only one surgeon—and there are several surgeons connected with that Hospital—was specially thanked—specially congratulated on the fact of there having been only one death in the whole of his operations. Why he should have been singled out for special mention I cannot understand. It certainly seems to me to be rather singular.

6353. We have skilful surgeons in Dunedin, have we not?—Yes, I think so.

6354. Now, in the Christchurch Hospital, according to this return, there were fifty-two serious operations, forty-four medium operations, and fifty minor ones—I am taking it for granted that they have been correctly classified—and we know also that the Christchurch Hospital has ventilation of its wards very much in advance of what there is in ours?—I do not think there can be any doubt about that.

6355. Does not that fact convey an irresistible conviction to every reasonable man's mind that the ventilation has a good deal to do with it, and that the Christchurch good results are due to it?—If your assumption be true, it is the fact.

6356. That the different results are due to the better state of the Christchurch Hospital?—Yes.

6357. Now, we will turn to your own results. There are only one or two that seem to have been due to influences over which you had no control. For instance, I find out of your forty-three cases twelve had septic symptoms. First of all, on the 8th June there is the case of M. H——. The note I have about it is, "Removal of a bony tumour from the cheek"?—I know that case.

6358. The temperature chart shows: 8th, 100°; 9th, 99°; 10th, 100·2°; 11th, 101°; 12th, 103°?—That is what is called erythema, which is treated as erysipelas. I always treat that more as a precautionary matter.

6359. Are there no septic symptoms there?—Yes, but I can explain them.

6360. The next case I will take is that on the 5th July—J. C——. "Admitted 12th June; operation, 5th July, ends of the bone scraped; operated on a second time, considerable suppuration, lasted a long time." That is with septic symptoms, is it not?—Quite so.

6361. That is an operation followed by septic symptoms. I have his chart here. It is 101°, 100°, 101°, 102°, 100°; operation on the 30th; 100°, 101°, 102°, 101°, 101°. That operation was accompanied by septic symptoms?—Yes.

6362. The next case I have is on the 10th August—a man named H——. "Caries of bone; scraping out joint; wound had healed for some time; then the wound broke down; patient was discharged in a weak state, with the wound still suppurating"?—That is quite true.

6363. The operation is marked on the chart as on the 19th. The temperature then goes—101°, 102°, 105°, 102°, 103°, 103°, 103°, 102°, 104°; then becomes normal. Are those septic symptoms?—You cannot eradicate a septic state from it.

6364. The next case is C. O——. "Amputation of the thigh; some suppuration; not a perfect result; chart fairly good." There is suppuration there?—After the amputation, do you mean?

6365. Yes?—I do not remember suppuration after the amputation.

6366. Is it a septic case?—I do not think you can fairly charge that with being septic.

6367. The next case is that of C. M——. "Granulated suppuration; two or three months in"?—As far as my memory goes, I cannot put that down to septic influences.

6368. But is it not prolonged suppuration for two or three months? Is that not a suspicion of septic poison?—Yes; but I want to explain it.

6369. But in that case there were septic symptoms?—Yes; but I may say it would be only fair on your part to treat every surgeon in the Hospital like this. If you take the cases of one you should take the cases of them all.

6370. I do not suggest any fault of yours in dealing with your cases?—I know perfectly well there is something behind it—perhaps not on your part, Mr. Solomon.

6371. I assure you our object is to show that you are hampered in your operations?—Yes; well, I can explain about these cases, and, if you will not allow me to do so now, I can say what I want to say afterwards, if Mr. Chapman will just take a note of the cases.

6372. Then D——. "Suppuration for a week; temperature, 102°." Can you pretend to say there are not septic symptoms there?—I say there are septic symptoms there.

6373. Next, E. M——, on the 5th January. "Epithelium of the nose; suppuration followed; flap separated." Is suppuration not a necessary indication of septic trouble?—Yes. I will explain that case now. The patient was admitted suffering from septic mischief. He had an epithelioma of the nose at the time he came in about half an inch in diameter. That was removed, and the gap was covered by lateral flaps of skin. There was considerable tension, and union did not take place as soon as expected, but the result was very good. Is there anything regarding suppuration in the chart?

6374. Yes?—Let me see it. [After examining paper.] Yes, I think I got a good result in a very short time with that man.

6375. Does not the suppuration lead one to suspect septic trouble?—Quite true.

6376. Well, the next one is R. G——?—Yes; to save time I will admit there was septic mischief there. Will you take a note of that case, Mr. Chapman, because it is only fair it should be explained—fair to the Hospital as well as to myself.

6377. The next is M. F——. In this, —° is the temperature on the next day but one after the operation. Then on the 15th, at night, it was 102·8°, then on the 16th it dropped to 99°, and on the 17th it was 101°, after which it gradually decreased to normal. Is that not suspicious?—Yes.

6378. Then Y. C——: "7th March. Exploratory excision in the abdomen, followed by a rise of temperature; died in thirty-six hours." Was that septic trouble?—I do not think it can be put down to septic trouble. A rise of temperature does not necessarily mean sepsis.

6379. Can you say that a rise of that kind followed by death after thirty-six hours is not the result of septic trouble?—Not necessarily.

6380. What was the temperature at the time of operation?—It was 96°, the lowest.

6381. And then on the day after operation?—It was 98°, then it rose to 100·2°.

6382. Well, now, can you say that is unaccompanied by septic symptoms?—I can honestly and fairly say so, and if you understood chemical phenomena you would say so too.

6383. Then R. R——: "Radical cure of hernia; rise in temperature, and suppuration in both wounds." What do you say about that?—Suppuration occurred and there were septic symptoms.

6384. Now "J. M——; operation for radical cure of hernia, followed by stuffy condition and suppuration of the scrotum"?—I cannot say that was unaccompanied by septic symptoms, but it is explicable.

6385. "E. C——, lapirotomy." An emergency operation, I presume. Was that unaccompanied by septic symptoms?—Yes.

6386. In all these cases now septic symptoms have arisen in the Hospital?—Yes, appeared.

6387. There was no talk of septic symptoms in the patients when they came into the Hospital?—That is where I differ from you, Mr. Solomon. They were septic then with one exception.

6388. Well, we have some more yet.

6389. *The Chairman.*] There are twelve cases out of your forty-four with septic symptoms?—Yes, but I should like to adopt this plan with regard to every man's case. I look on it as most unfair to apply it to only one man.

6390. Unfair to you?—Yes.

Mr. Carew: What is the object of these questions on that head?

Mr. Solomon: The object is to show that in an unhealthy atmosphere, despite all efforts of the surgeons, septic symptoms follow when they ought not to follow.

Witness: I am willing to put a witness into the box to prove to you how that return has been compiled.

Mr. Solomon: It was compiled by Dr. Copland.

Witness: No; it was compiled by Dr. Batchelor. I can put Dr. Copland in the box, and if he tells to the Court what he told to me, then the Court can draw their own conclusions as to the spirit in which it was drawn up.

Mr. Solomon: The list was sworn to by Dr. Copland, and not by us.

Witness: Not that list. I speak of the spirit in which the whole thing has been gone into.

Mr. Solomon: You must be mistaken.

Witness: No, I am not. The only object is to show——

Mr. Solomon: I can assure you the only object is to show that doctors do not get a fair chance.

Witness: I cannot eradicate from my mind what has been told me.

6391. *Mr. Solomon:* Well, I will put a few other cases to you. There is that case of J. M——.

The Chairman: It is rather a waste of time.

6392. *Mr. Solomon.*] I shall endeavour to put the evidence as briefly as possible. Now, doctor, to put it to you shortly, after all the cases I have read to you, do you think that those

twelve cases out of your forty-three being accompanied by septic symptoms after operation is consistent with an absolutely healthy condition of the atmosphere?—Would you put that again please.

6393. I see I must put these other cases to you, and I will do so shortly. "R. A——; puncture of one of the knee-joints; in hospital about four months; suppuration recurring; left at length healed." Then there is the case of S. K——. Do you think that the fact that all these cases I have referred to—such a large proportion of cases as 30 per cent. of your cases—having been accompanied by septic symptoms, is consistent with an absolutely healthy condition of the atmosphere?—I do not think that the condition of the atmosphere in some of these cases had anything to do with it.

6394. That is not an answer to my question. I ask you again, is not the fact of these cases having been accompanied by septic symptoms inconsistent with a healthy condition of the atmosphere?—You are asking me a question which almost implies the answer you wish me to give to it.

6395. I must press for an answer to my question?—Well, I will answer your question in this way: I say, in regard to the class of cases that you have referred to, the air outside might just as easily have caused them as the air inside.

6396. But when you find that 30 per cent. of your operations in the Dunedin Hospital within twelve months have been accompanied by septic symptoms, does not that fact make you suspicious as to the condition of the air?—No, for the simple reason that I knew the condition of the cases when they came into my hands.

6397. All of them?—Most of them.

6398. All of them?—I know the condition of most of them, and that weighs in my mind.

6399. Just one more general question. Do you think that the imperfections in the Dunedin Hospital which you have mentioned could remain for any length of time without doing injury, although that injury could not be directly traceable absolutely to that cause?—No, but I can add to that by saying that the evils of those imperfections may be minimised and mitigated by strict supervision and management; and I should further add that in the steward of the Hospital, Mr. Burns, we have a man who exercises great thought and a great deal of care in his management, a man who takes a much more active and living interest in the institution than the majority of stewards I have seen elsewhere.

Mr. Solomon: And will you allow me to add a word. I am very much obliged to you for the assistance that you have given to the Commission, instead of trying to baffle us as some of the other witnesses have done.

6400. *Mr. Chapman.*] Following up the last question, I will take the latter part of your cross-examination first. If the imperfections that have been spoken of, or have been suggested, had been allowed to remain, do you think they must have been detected long ago?—I think so.

6401. That the alleged results would have been connected with the alleged causes long ago, you think?—I would conceive that if it were so they would have been found out.

6402. We have been told that there were twenty-one deaths in the Dunedin Hospital during a given period as against one in the Christchurch Hospital as the result of a similar class of operations. Should not a startling result as that have come out long ago?—Yes.

6403. And become apparent to the practitioners practising in the Dunedin Hospital—to surgeons and physicians alike?—Yes.

6404. And should have become apparent to the Inspector-General, whose duty it is to know something about these matters?—Yes, if the Inspector-General did his duty.

6405. And there have been two or three of them in succession, have there not?—I think that is one of the things an Inspector-General should inquire into.

6406. I will take your cases, and, at the risk of delaying these gentlemen, will ask you to make your own explanation regarding them. First, as to M. H——?—That was a case of a girl with a tumour in the upper jaw. I called a consultation of the staff—I wished to remove the whole of the upper jaw for that tumour, but the advice of my colleagues was against that course being adopted, and I am bound to defer to the views of the majority. Much against my will I performed the operation, scraping out the parts that were get-at-able from below. What occurred in this case was that there was a rise in temperature, and the erythema were distinctly due to tension. I do not blame my colleagues for differing from me, because the very object of a consultation is to get the various opinions. At the same time, if I had been allowed my full liberty of action I do not think the tension would have come about.

6407. The case is one of tension?—It is impossible to explain it as septic, except that it was the temperature deliberately rose from tension which retained discharge. It was not a septic case purely. This reminds me of something more. [Witness read from the consultation-book of the Hospital a remark he had there written on this case, in which he stated he "regretted he had not been permitted to follow his own opinion in dealing with this case."] I did not know I had written that; I had almost forgotten about it.

6408. The second case is that of C——?—He had been living in a vitiated condition, and was indeed an extremely desperate case. He was in a septic condition before he came in. The non-union of the fracture occurred before he came to the Hospital or under my care.

6409. I suppose if he had gone to the Christchurch Hospital you would have had him septic there?—Yes.

6410. *Mr. Solomon.*] Here is the chart?—I do not take the chart as anything. I, as a modern surgeon, simply say "that is septic." There is no quibbling on my part, yet he left with union of the fracture.

6411. *Mr. Chapman.*] Then the case of H——?—The explanation of that is that he was a boy suffering from acute tuberculosis, which was latent, and suppuration of knee-joint, and after I had performed the operation for erosion of a joint general tuberculosis set up. The reason I sent him out of the Hospital was so that he might go to the country for the air.

6412. Then C——?—That is an illustrative case, just to show how unfair it is to blame the Hospital. When he came in he had a strumous swelling of the knee-joint with open suppurating wounds. I treated him according to Thomas's method. He got considerably better, and so much so, indeed, I thought it would be best to let him go home where he would get better air than we can get in the Hospital. He went to his home, but some time afterwards he returned to the Hospital far worse than when he left it; in fact, he went utterly to the bad, and was in such a state—so extensive was the disease—that I deemed it advisable, after consultation with my colleagues, to amputate.

6413. *Mr. Solomon.*] Suppuration followed the amputation?—Yes, the dressings had got displaced, but it was very little.

6414. *The Chairman.*] And what caused it?—The air of the ward.

6415. *Mr. Chapman.*] Quite so?—I may say you cannot go into the street but you get these micro-organisms. The air in the streets will cause it in some cases where the person is predisposed to it. The wound was saturated, and very extensively so, when he came back to the Hospital. I thank you, Mr. Chapman, for calling my attention to that fact. I now remember all about "Little George," as we used to call him.

6416. And you say it was saturated when he came back to the Hospital?—Yes.

6417. There was no suppuration after the amputation?—Yes, there was a little in one corner of the wound. It did not heal altogether as first intended.

6418. Then C. M——'s case?—She came into the Hospital with an open abscess, in a septic condition, at the back of the knee.

6419. She came in in that condition?—Yes; and wherever you have suppuration there you have a certain amount of sepsis.

6420. *The Chairman.*] That is admitted by all surgeons?—Yes.

6421. *Mr. Chapman.*] Now, D. Y——?—That man was simply strumous from the top of his head to the soles of his feet. I have had to scrape abscesses, sometimes the size of a walnut, from his neck. Some time ago, outside the Hospital, I removed a series of glands from his neck and abscesses from various parts of his body, and then a diseased ankle-joint with open wounds set up to such an extent that I had to perform amputation there. Dr. Lamb will bear witness to what I say—that this man was in a septic condition long before admission. I performed an amputation and the man had suppuration.

6422. *Mr. Solomon.*] After the operation?—Yes, but you had tuberculosis there, and there is where the unfairness comes in, because where you have a strumous constitution the least germ lights up much more quickly than elsewhere.

6423. *Mr. Chapman.*] M——?—He came in septic after an injured nose.

6424. He came in in a septic condition?—Yes; but the question in his case was this: He had a marked suppurative process going on on the bridge of his nose, and it went on to such an extent that I had to bring a large amount of the lateral skin-flaps forward. One did not want to destroy or disfigure the man more than one could help, and therefore I brought the flaps together and trusted to the epithelium flowing over the granulating area and joining. There was no attempt to thoroughly exclude the germs in that case.

6425. G——?—That is an interesting case. He broke his leg three years ago on the West Coast. He was treated in the Greymouth Hospital for a long time, and then went to the Hospital which has been called the panacea for all septic cases—the Wellington Hospital—and was there performed on for resection. He next came to the Dunedin Hospital with necrosis of the bone, with an open wound leading to it. I performed resection in January last.

6426. *The Chairman.*] How long ago is it since he was in the Wellington Hospital?—I believe he was in Wellington also about January. Taking one hospital after another, I think that man has been inside the walls of these institutions for upwards of two or three years. After the operation I performed some suppuration occurred, but how it occurred it is impossible to say. The main point is that he required his leg to be amputated, because he had a marked thickening of the nerve, which produced, when placed in the splint, a jumping up and down. Under these circumstances no surgeon could expect to get a union, and at his own request I amputated. He is now better, and was in my house the other day thanking me for what I had done. He said he was going to work, and, as a non-unionist, worked with an improvised leg—and that was only nine weeks after the operation.

6427. You say that was in the man's constitution?—You must eradicate every other element first.

6428. *Mr. Chapman.*] M. F——?—That was a case that came in with suppurating hydatids—a pretty bad one to start with. I do not know whether you can lay the blame of the disease getting into that poor person's body to the Dunedin Hospital, but I cannot see how you can have a consistent modern pathology without some septic infection with a case of that nature, and she was so on admission.

6429. *Mr. Solomon.*] There is the chart?—The chart is nothing. When the wound is opened up and the air gets fresh access again it assists the disease. The woman made a good recovery.

6430. *Mr. Chapman.*] Y. C——?—Yes; he was a poor Chinaman with a cancerous mass.

6431. That was unconnected with septic symptoms?—I do not see how you can blame the Hospital for it.

6432. R. R——?—I think you might possibly charge the Hospital air with that. I cannot explain, except that the dressing may have become displaced.

6433. *The Chairman.*] It is marked "Good result"?—Yes, it is good in this way: She had a double rupture, and the last time she presented herself before me she was well and strong.

6434. *Mr. Chapman.*] M——?—That is a peculiar case. This man's system was debilitated by a temporary attack of diabetes, and where you have got any diabetic mischief any wound has a

tendency to take a sloughing action. Modern pathology would put it down to septic, but the real cause was diabetic. I may mention in this case that Dr. Brown had operated on the man outside and closed up the rupture that was on the left side—a very large one. On the right side he had a rupture that would go into the interior of a small round hat. That was returned into the abdominal sac; and I have no doubt a factor in his case was the force—the extra ligature—I put on to secure a union.

6435. E. C——?—That is a case of local tension—perforation of the intestines after removal of a large tumour that was obstructing the bowel. There was also an element of doubt in her case afterwards, from what we learned, as to whether she had not associated some typhoid, but which had not shown itself prior. She died on the ninth day.

6436. A typhoid case would be a sort of a box of septic mischief?—I would not go into the causation of typhoid.

6437. *The Chairman.*] Then, out of these twelve cases you do not admit that they all got septic trouble from the Hospital?—I do not admit that more than one could be fairly charged against the Hospital, and I am not positive about that one.

6438. *Mr. Chapman.*] Then the boy A——?—Yes; he met with an accident at Broad Bay. He was a strumous boy, and the suppuration had gone on into the joint and the tissues around the joint before admission. He was decidedly a septic case—*i.e.*, before admission.

6439. *The Chairman.*] That is not one of the twelve?—No.

6440. *Mr. Chapman.*] If the Dunedin Hospital had been in such a bad state as the other side has said, do you think he would have recovered?—Perhaps not. I look on his case, considering its nature, as a wonderful case of recovery of a sound and whole limb; and it was a wonder to me he lived, let alone saved his leg. His father wrote to me just lately saying that formerly the boy was the weakest one in the family, and that now he was its support and mainstay.

6441. Now, these are details of the cases?—Yes, to a certain extent. I could go further into them.

6442. You do not think it would be fair to put them down as being caused by the state of the Dunedin Hospital?—That is so. It is most unfair; most of them came in septic.

6443. With the exception, perhaps, of the one case you have mentioned?—Yes.

6444. *Mr. Carew.*] And that one you are not certain about?—That is so.

6445. *The Chairman.*] How is it a doubtful one?—I do not think it can be explained. It was a case of sepsis that occurred in the Hospital; I think I can safely say that.

6446. *Mr. Chapman.*] Now, as to these Christchurch statistics. Unfortunately, we have not an opportunity of asking Dr. DeRenzi any questions about them. In Christchurch there were fifty-two serious operations against forty-four in Dunedin, with about two-thirds the total number of patients. In the Christchurch cases, do you think they could have taken into consideration cases such as I put to you in the last part of your examination-in-chief?—I doubt it; but I should like to investigate that matter more carefully. The position I take up with regard to the Christchurch list is that I suspend judgment upon it.

6447. It is too good?—Yes; too much joy altogether.

6448. You say that in the Dunedin Hospital you have had a number of cases that must have died in any event?—Yes, the greater probability is that they would have died.

6449. Those you were looking at this morning?—Yes.

6450. For instance, the man who shot himself through the bowels. That was Mr. A——?—Yes.

6451. He could not have recovered under any circumstances?—No.

6452. Then there was the case of a young man who was crushed between two railway-trucks?—Yes, that is a similar case.

6453. They cannot have put in the Christchurch return cases of that kind?—I cannot say, but it is probable they have some of the deaths.

6454. But you have included them in your list?—Yes. There is some explanation, I have no doubt—a different system of nosology.

6455. In the Dunedin list, are the cases there performed by the staff and not by the house surgeon?—Yes.

SATURDAY, 13TH SEPTEMBER, 1891.

Mr. ANDREW BURNS sworn and examined.

6456. *Mr. Chapman.*] What is your name?—Andrew Burns.

6457. You are secretary to the Dunedin Hospital?—Yes; that is what I am called in accordance with the by-law.

6458. You have some other title, have you not?—Yes. I am house steward.

6459. How long have you held your position?—A little over thirteen years.

6460. You have, subject to the direction of the Trustees, the whole of the executive management of the Hospital?—Of everything except the medical department.

6461. Do you remember Dr. Batchelor's complaint coming in on the 22nd July, in reference to the matter of Mrs. S——'s death?—Yes; it was addressed to the chairman of the Trustees.

6462. When was it brought into the office?—At a special meeting of the Trustees.

6463. It was delivered to the chairman I understand, and brought into the office by him?—Yes. There was a special meeting of the Hospital Trustees on the 23rd July, it having been called for the purpose of considering the revision of the by-laws, and Dr. Batchelor's letter being considered of importance, it was suggested that it should be read and considered.

6464. Then it was taken into consideration?—It was then read.

6465. How was it dealt with?—A discussion arose as to what steps should be taken. Some of the Trustees appeared to think that it was advisable to hold a Coroner's inquest, and Mr. White was requested to ring up Mr. Carew. When he returned from the telephone Mr. White stated that Mr. Carew had said, in reply, that before he could hold an inquest a statement must be sent in to him through the police. The Trustees then passed this resolution, though I do not remember whether it was exactly done in that order: "That Dr. Batchelor's letter be received, and that the Trustees deem it desirable that a public inquiry be held to investigate the statements made by Dr. Batchelor; and that the chairman be authorised to inform Dr. Batchelor that the Trustees deem it undesirable that he should make any further statement beyond that contained in his letter until an inquiry be held." Dr. Batchelor was outside, waiting, I think, in the hall to see the Trustees, and he was asked to come into the room, when he was informed of the decision of the Trustees—that they had decided to ask for a public inquiry. Dr. Batchelor then said, "Well, I require a *post-mortem* examination to be held," and I think that he suggested Drs. Roberts and Ogston. Then the following resolution was carried: "That a *post-mortem* examination be held to-morrow morning on the body of the late Mrs. S——, and that Drs. Ogston and Roberts be requested to make the autopsy, subject to leave being granted by the husband of the deceased." The following resolution was also passed: "That, in the event of the husband of the late Mrs. S—— refusing to allow a *post-mortem* examination to be held, the chairman be empowered to take such steps as he may deem necessary."

6466. That was to get the Coroner's permission?—I hardly think that. I think it was for the purpose of investigating the cause of death.

6467. Did you have to get the Coroner's permission to hold the *post-mortem*?—I hardly think so. I think it is in the ordinary course.

6468. *The Chairman.*] You got the husband's permission?—The husband's permission was given the following morning.

6469. *Mr. Chapman.*] In coming to a determination to have this inquiry, were the Trustees, after disposing of this preliminary matter, of one mind on the subject?—They seemed to be unanimous.

6470. They wished to have it, I understand, without any delay?—Yes. This resolution was passed: "That the Government be requested to appoint a special Commission to inquire into the alleged insanitary state of the Hospital wards, as stated in Dr. Batchelor's letter of the 22nd instant, addressed to the Trustees."

6471. Is that all there is in the minute-book about that matter?—Dr. Batchelor came into the Board-room afterwards, and said something to this effect: "That he trusted that his letter would be made public;" and I think Mr. J. White said to him, in reply, "There is no doubt, doctor, that you will have sufficient publicity given to your letter."

6472. Was that all that passed at that meeting?—There was a decision arrived at to inform Dr. Batchelor that it was unnecessary for him to make any further statements.

6473. Then there was some communication with the Government on the subject, was there not?—There were several communications.

6474. Will you read them, if you please?—The first was sent on the 25th July, to the Hon. the Minister of Education.

6475. That was a telegram, was it not?—Yes.

6476. There was one following that, was there not?—There was one sent on Monday, the 28th July. I may say that this particular one, which was very short, was written by Mr. Miller in town. I cannot certify to its absolute correctness; but it is as nearly as possible a copy, as well as I can remember, of what was sent.

6477. There was a further telegram sent?—Yes.

6478. *The Chairman:* There is no occasion to go over all the telegrams. Give us the result of them.

6479. *Mr. Chapman.*] What was the answer of the Government?—There were several replies. I should say that Mr. Miller sent a further telegram to the Minister of Education to this effect: "Trustees unanimous public inquiry must be held, and ask you to appoint Commissioner at once."

6480. Will you now read the reply?—I think there was yet another telegram sent by Mr. Miller to the Hon. Mr. Fergus complaining of the delay on the part of the Government, and on the 28th July Mr. Miller received this reply: "*Re* your telegram to Mr. Fergus, the Minister informed you it was intention, if Trustees gave no objection, to ask Sir James Hector to report. You having signified their wish, Sir James Hector has been instructed to inquire and report."

6481. *Mr. Carew.*] You say that the Trustees were unanimous in insisting on an inquiry being held?—Yes.

6482. *Mr. Chapman.*] Do you remember that some years ago there was a conference between the staff and the Trustees?—Yes.

6483. That was in 1887, was it not?—Yes; on the 25th May of that year.

6484. Were you present?—I was.

6485. What was the object of that conference?—The staff had written to the Trustees desiring that a conference should be held for the purpose of discussing matters of great importance to the welfare of the Hospital.

6486. What were the subjects discussed?—Resolutions had been sent in by the staff, and they were to this effect: (1) that a new operating theatre was needed; (2) that a better system of nursing was needed; and (3) that special wards for particular cases were necessary.

6487. And these matters were discussed at the conference?—Yes.

6488. Was the question of ventilation, or rather of imperfect ventilation, raised by the staff then?—No.

6489. Were any questions then raised relative to the sanitary state of the Hospital, or any allegations made as to its insanitary state?—No; there was no reference made to the building, except to putting up a strong-room. Dr. Colquhoun said that a padded room was required to be provided for insane cases.

6490. Was that done?—It was.

6491. It was a room that was already in use, and it was improved?—Yes, and heated afterwards.

6492. In accordance with the suggestions of the staff?—Yes.

6493. Was it their suggestion that the same room should be padded?—They did not exactly say the same room, but that a padded room should be provided.

6494. On the subject of ventilation, has there been any communication between the staff and the Trustees?—Yes.

6495. Rather, it was laid before the old committee, was it not, before the Act was passed?—Yes.

6496. *The Chairman.*] Was there correspondence or was it a verbal communication?—Some resolutions were sent in.

6497. *Mr. Chapman.*] When was that?—I cannot say definitely.

6498. I have a note of it as having taken place in 1884, and that the staff were asked to point out any defects in the ventilation, and what remedies they would suggest?—The staff made some representations on the subject to the committee.

6499. What did they ask the staff to suggest?—Some improvements in the ventilation.

6500. Then the committee asked them for suggestions as to what should be done?—The committee asked them what defects there were in the present system of ventilation, and whether they would suggest remedies.

6501. Is there a record of that, or was it a verbal communication?—There is a record of it.

6502. Where?—It is in the minute-book, I think. The following letter was sent in reply: "12th February, 1885.—Dr. Copland.—Sir,—Referring to your letter of the 10th November last, in which the honorary staff recommend the committee 'to take into consideration the ventilation of the wards, the condition at present existing having been found fraught with danger to patients,' I am desired by the Hospital committee to request the honorary staff to point out the defects in the ventilation of the wards, and to indicate the means by which the system of ventilation might be improved.—I am, &c., A. BURNS, Secretary to committee."

6503. I notice that the recommendation of the staff to which that letter was a reply was very general in its terms. Did you ever get a reply to that from the staff?—I have not, beyond a reply that the matter was under consideration.

6504. And they have it under consideration still apparently?—Yes.

6505. At all events, no recommendation came from the staff?—No.

6506. To what does that letter refer?—My impression was that it was to draughts in the ward.

6507. You had heard them speak, now and again, of draughtiness, but not of any danger from foul air?—No.

6508. What has been the position of the Trustees with reference to the subject of a nurses' home?

6509. *The Chairman.*] Had you not better ask whether there have been any changes made since 1884?—Yes; there have been changes in the closets, in the wards, and in the main building.

6510. Was nothing done as a result of that conference?—Nothing was done. But since then some of the wards were improved. For instance, Dr. Ferguson's ward—the ward for female eye cases—has been improved, and the children 's ward has been ventilated; at any rate, it has been improved.

6511. *Mr. Chapman.*] You have, I understand, prepared a memorandum on the subject of successive improvements that have been made in the Hospital?—Yes.

6512. I want you to read it and give to the Commissioners any explanations you wish. I suppose the dates are taken at haphazard?—Yes.

6513. What are the dates?—25th August, 1877, and 25th August, 1890. I may mention that in 1877 there were ten wards occupied. There is more accommodation now for females. In 1877 female venereal cases were allowed to remain in the female general ward. [Return handed in: Exhibit lxiii.]

6514. Is this a return showing the bed-space in 1877 and the present bed-space?—Yes. In Nos. 1 and 4 it is the actual space going up the one side and down the other. [Return handed in: Exhibit lxiv.]

6515. *The Chairman.*] Is it the actual walking-space between the two beds when the patients are in them?—Yes, taking in the fireplaces.

6516. *Mr. Solomon.*] Did you actually measure from bed-clothes to bed-clothes?—Yes.

6517. You have given an average at the bottom, and taken credit for the fireplaces—is that not so?—Yes.

6518. *Mr. Chapman.*] You said something in that memorandum that in 1877 no steps were taken to close the joints in the floors: what steps are taken now?—The practice is not invariable, but for some years now—I believe that the plan was first adopted in 1883 or 1884, but I cannot recollect distinctly—we scrape all openings in the lower wards.

6519. You clean them out?—Yes. We fill up the openings with melted paraffin. In one ward we poured the paraffin over the floor and rubbed it with hot irons.

6520. *The Chairman.*] What ward was that?—No. 4.

6521. Were all the wards done with paraffin?—Only the lower wards. There were only two wards dealt with last year, Nos. 1 and 2. They were done merely in the crevices, not all over the floor. There was objection taken to running all over the floor, because it made the floor slippery.

6522. *Mr. Chapman.*] Was there any smoothing of the boards by planing them down at all?—No.

6523. *The Chairman.*] Was it last year that the boards were planed?—No; it was a long time ago—four or five years.

6524. Was it an expensive process?—No. I think there was a carpenter employed for four or five days. The nails were all hammered in. There was no difficulty about doing it; I mean in No. 4 ward. But there would be a difficulty in No. 3 ward, because the boards are all worn very considerably in places. I may say that this system of filling up the cracks in the floors was suggested to me by reading a book written by a doctor—I forget his name—who suggested some improvements in old hospitals. The idea which I got from the book I found to be of great utility, and Dr. Grabham highly approved of it when he saw it. The plan was not carried out in the upper wards, because the crevices we found not to be so large as in the other wards. I found that it could be done very well in No. 7 ward.

6525. *Mr. Chapman.*] I want you now to describe to the Commissioners the plan you now adopt of cleaning the wards. I mean your system of "fallowing" wards. For a time, I understand, you fallowed only one ward. How long has the plan of fallowing two wards been in existence?—About eighteen months, I think.

6526. Fallowing one ward has been in existence much longer—in Dr. Grabham's time, was it not?—Yes. In 1879 or 1880.

6527. Under the present system of fallowing two wards, how long is a ward in use—in commission as it were—before it is thrown out?—That will depend on circumstances. But there is an annual cleaning.

6528. Which involves the throwing-out of each ward?—Yes.

6529. So that every ward has one turn of fallowing in a year?—Yes; and if we find any very bad cases in a ward, and it is thought advisable to make a change, we would go through the same process with that ward, fumigating it in the first instance.

6530. *The Chairman.*] I want you to describe exactly what the process is. First the ward is emptied of patients and beds. As to the beds, Dr. Copland has already told us that they are repainted. Is that all that is done?—It may not be the invariable practice, but it is generally done. They are taken outside and allowed to remain there until the ward is again ready for use.

6531. They are exposed during that time to the atmosphere, and are generally repainted?—Yes. The wooden beds and bed-boxes are also taken out, exposed, and then varnished. All the ward furniture which is capable of being removed outside is taken out.

6532. And the bedding?—Is all specially examined at this time, and if there are any defects they are attended to.

6533. Are any measures taken to disinfect the bedding?—Not unless there is some special necessity for doing so. If there are any bad cases the beds are disinfected. That is always done.

6534. After a very bad case the bed is taken down and disinfected?—Yes; and the bed-clothes are taken to the laundry and washed.

6535. After the ward has been cleared in that way, what is done to it?—Well, sometimes it is fumigated by burning sulphur, but that is not always done. We have allowed the practice of fumigation to lapse if there have been no bad cases.

6536. What quantity of sulphur do you use on these fumigating occasions?—Between 2lb. and 3lb.

6537. That is burnt at one time?—Yes.

6538. Everything being closed up, of course?—Yes.

6539. What happens after the fumigation?—All the windows are open.

6540. What next?—We generally go on with the cleaning.

6541. And what is the process of cleaning: do you first take the floors?—We do not commence with the floors.

6542. What do you commence with?—We generally commence with the ceilings, which are washed down or scraped, but that is not invariably done. Sometimes one or two years may elapse before that is done.

6543. But in the course of one or two years the ceilings are always scraped?—Yes, and washed.

6544. What is the process of scraping?—With deck-scrapers. If there are any loose particles on the walls they are scraped off, and the walls are carefully scraped down.

6545. After scraping the ceilings, what is put on to colour it?—We wash them with whitewash.

6546. Do you do the walls at the same time?—Yes; the ceilings first, and the walls afterwards.

6547. *Mr. Chapman.*] You whitewash the walls too?—There is some ultramarine blue put into the colouring so as to give it a French-grey appearance.

6548. *The Chairman.*] What is your whitewash made up of?—A little size and ultramarine blue.

6549. And whiting?—Yes.

6550. *Mr. Chapman.*] You put in the size to make it hold?—Yes.

6551. *The Chairman.*] Does the whitewash smell at all?—It does for a day or two.

6552. What kind of size is it you use—prepared painters'?—Concentrated size.

6553. *Mr. Chapman.*] What is done with the dado?—It is copal-varnished each year.

6554. Is it scraped down too?—No.

6555. To what height does the dado run; is it 6ft.?—Hardly that: between 4ft. and 5ft.

6556. Then you take the floors: are they next, or the closets?—We examine the closets to see if there are any flaws in them.

6557. Then, before you come to the floors, you ascertain if there are any flaws in the closet-pipes, or defects of that kind?—All repairs are executed in that way, but if there are any special repairs needed they are at once attended to.

6558. *The Chairman.*] Do you take away all the skirting-boards and remove all the woodwork around the closet-pipes?—It was all stripped last year, when there was a general overhaul. Except in one ward new floors were put down in the closets, and the closets themselves had additional ventilators. Under the old system there were boards stretched across the whole of the back portion of the closets, and in front, but these have all been swept away.

6559. You have reduced the closets to what is called a "circular" form?—Yes.

6560. Does that apply to the baths, or are you only talking of the closets?—I am only speaking about the closets.

6561. *Mr. Chapman.*] The lavatories and baths are still boarded in?—Yes.

6562. *The Chairman.*] Do you strip them for the annual cleaning?—No; but if there were any leakage or burst we would have to strip them.

6563. But do you not strip them to see if there is any accumulation of dirt?—No. All the woodwork about the closets and bath-rooms is painted—that is to say, one side is painted, while the other side is painted, grained, and varnished. The floors are well washed.

6564. *Mr. Chapman.*] What is the process of washing the floors?—By scrubbing.

6565. With scrubbing-brushes?—Yes, with plenty of soda and soap mixed. We wash them two or three times.

6566. Do you wash them three times during the fallowing period?—I think so, but I will not be certain.

6567. Do you use any particular kind of soap?—Ordinary common soap.

6568. Do you take any special care to see that the floors are thoroughly cleaned?—Yes.

6569. How long does a ward stand vacant?—Usually about three weeks from the time that it is first empty. That will depend on whether there is any urgency for keeping the ward vacant. In that case the time it is empty may be less.

6570. *The Chairman.*] You keep it vacant three weeks if possible?—Yes.

6571. *Mr. Chapman.*] Are the windows in the ward washed?—Yes; they are frosted, and the woodwork is all washed.

6572. Are the places where dust or dirt may accumulate well washed?—Yes; that is all done before the cleaning commences.

6573. *The Chairman.*] Is that the first thing you do?—Yes.

6574. *Mr. Chapman.*] As to the other parts of the building, what steps are taken as to cleaning?—In the basement once a year we give them a coat of hot limewash all round the walls, after dusting them down in the same way as the other walls.

6575. *The Chairman.*] Is any fumigation done there?—No.

6576. What is the limewash made of?—Hot lime, with the usual quantity of salt.

6577. *Mr. Chapman.*] Apart from this annual cleaning-down in the basement, is it regularly kept clean?—Yes.

6578. In what way, and how often?—Every week it is swept all round. If there is any dust I direct the attention of the porter to it, and it is cleaned up by him. In addition to whitewashing the walls, every third or fourth year there is a coat of tar spread over the asphalt—the whole of the basement has been asphalted—and it is top-dressed with sand. That was done last year.

6579. Are the windows in the basement kept open regularly?—Yes; I see to that myself.

6580. Are you satisfied that the basement is kept thoroughly cleaned?—I am satisfied there is nothing there which we can avoid.

6581. Is there any oozing, or anything of that kind?—In some places there are some damp-looking spots, but I do not know what they are due to. I have never seen any signs of water.

6582. *The Chairman.*] It is sealed down with the tar; otherwise damp would arise?—Yes, I think so. I may mention that the main hall has a coating of whitewash. We tried limewash there, but it all flaked off, and looked rather unsightly.

6583. *Mr. Chapman.*] As to the staircase and galleries, how often are they washed?—They are cleaned once a week. I think, once every fortnight they are washed, the matting taken up, and the boards scraped in the same way.

6584. And the floor of the main hall—is that done at the same time?—Yes; but it is sometimes done oftener. It depends on the amount of traffic and on the appearance of the hall.

6585. And the various rooms on that floor—are they cleaned in the same way?—Yes.

6586. And the rooms upstairs—are they cleaned in the same way?—Yes.

6587. There has been some reference made to the channels overhead—to the trunks leading the water to the outside gutters: are these attended to?—Yes.

6588. How do you get access to them—through the man-holes?—Yes.

6589. What is done to them?—They are all scraped out.

6590. How often?—I think about twice a year.

6591. *The Chairman.*] When were they last cleaned?—About a fortnight ago.

6592. The whole of them?—Yes. They only go over the four upper wards.

6593. *Mr. Chapman.*] How many of these channels are there?—Four. They seem to be rather hollow-shaped in the centre, and the water runs to the outside from the ridges of the roof.

6594. Then they are not square at the bottom?—They are certainly not level. The channels on the main roof are cleaned out about once a quarter.

6595. You say that the various parts of the building are cleaned out regularly from time to time?—Yes. [The dispenser's return of the goods dispensed from 1887 to 1890 inclusive, also analysis of amounts spent during same years in repairs and additions to buildings, here handed in; Exhibit lxiv.]

6596. Something was said while I was absent about a smell arising from dead rats. What was that?—It was very difficult to locate that bad smell.

6597. *The Chairman.*] How long had you trouble with that bad smell?—I think about four or five months at the outside. I reported the matter to the House Committee, who authorised me to take measures to find out what it was due to.

6598. What was it due to?—At first we thought that it was something like the smell of sewer-gas. On this point I may say that the doctors differed as to the cause of this particular smell. One medical gentleman considered it to be due to sewer-gas, but when he found out that it probably arose from burnt sulphur he said he thought it might be a good disinfectant. It was also thought at the time to arise from the grease-trap.

6599. You afterwards found that it was a leakage in the flue?—Yes; from the safety-valve of the boiler going into the kitchen-flue. The smell seemed to come right from the flue, and was apparent at any point of the flue.

6600. *Mr. Chapman.*] What coal do you use?—Walton Park.

6601. Which contains sulphur?—Yes. However, the nuisance has been abated by taking a special escape-pipe to the kitchen-drain.

6602. *The Chairman.*] The smell is hardly felt now?—It does not smell at all now: at all events, I have not detected it.

6603. *Mr. Chapman.*] This [document handed to witness] is a copy of a memorandum in reference to the alterations that have been made since the Trustees took office in 1886?—I think it commenced in 1884.

6604. What have been the drainage operations so far as the ground is concerned?—They have not been very extensive. Some subsoil drains were put in in one place where the ground appeared to be very damp, and there was a cross-drain run from the King Street side across to catch the brick culvert.

6605. *The Chairman.*] Has anything been done to the kitchen department during this period?—No.

6606. When was the kitchen put in the basement?—That alteration was effected in 1878. I think that Dr. Grabham stated in his report that the removal of the drains outside was a most important improvement.

6607. That was taking the drains from underneath the building?—Yes. I quite agree with him in that respect, because before that the drains got choked occasionally, and we had to open them up, when the whole of the Hospital was filled with the effluvium which arose from these drains.

6608. Are the drains often cleaned out now, or do you just depend on the flushing?—We depended until quite lately on flushing, but I never saw any signs of obstruction in the traps.

6609. Why do you say "until lately"?—We unsealed all the traps.

6610. When did you do so?—Mostly last week or during the present week.

6611. What did you find?—That there was nothing to obstruct the flow.

6612. You mean that you opened all the traps on the outside of the building?—Yes. None were altogether free from sediment.

6613. Was it offensive at all?—The one from the operating-theatre was offensive; but there was very little sign of sewer-gas in any of the drains except one.

6614. Except which one?—The one from wards Nos. 2 and 7.

6615. Is that the one in the corner?—There was no obstruction there that I could see. There is a ventilating-pipe running up from there.

6616. From which side?—From the same side as all the other traps.

6617. Is that on the Hospital side?—Yes.

6618. All the drains are ventilated?—Yes.

6619. *Mr. Chapman.*] Do you know the course of the other pipe to the sewer?—Yes.

6620. Do you know anything about where the final outfall is?—It goes into the main sewer either in Frederick Street or St. Andrew Street.

6621. What is the present position of the matter of the nurses' home?—The position now is that the Trustees have got from the Government a subsidy on the amount handed in by the representatives of the subscribers to the fund.

6622. *The Chairman.*] How much were the subscriptions?—£1,033.

6623. And the subsidy is what?—Twenty-four shillings in the pound, amounting to £1,200 odd—about £2,300 altogether.

6624. Has any plan or any action been taken to carry out the home?—Not up to the present. The money was recently placed on deposit-receipt for six months. A committee has been appointed to take the matter of building a nurses' home into consideration, such committee to consist of two or three Trustees and two or three medical gentlemen who are supposed to guide the Trustees in matters relating to sanitation.

6625. Members of the staff?—Yes; together with Mr. Scott, who is outside of the staff.

6626. *Mr. Chapman.*] Is the matter now ripe for the expenditure of this money?—Yes. It is only within the last month that the Controller-General agreed to hand over the subsidy for the nurses' home.

6627. *The Chairman.*] Has the money to be devoted strictly to a nurses' home, or can it be used along with other moneys for some general scheme which may provide accommodation for nurses?—I do not know, but I understand that this money was handed over on the express condition that a nurses' home should be built in the Hospital grounds.

6628. *Mr. Carew.*] It was offered on certain conditions which came before the Trustees?—Yes. [Report of meeting handed in.]

6629. *The Chairman.*] And these conditions were adopted by the Trustees?—Yes.

6630. *Mr. Chapman.*] And the matter is now ripe for action as soon as any plan for building is agreed on?—Yes.

Mr. White: The money was distinctly tendered to the Trustees for a nurses' home and for no other purpose. Dr. Batchelor says that the consent of the subscribers can be obtained for using the money for general purposes. This fund was subscribed to by a very few people, Dr. Batchelor says.

Mr. Chapman: Was the fund for a gynecological ward subscribed to by a much larger number of persons?

Dr. Batchelor: Oh, yes! by a very much larger number.

6631. *Mr. Chapman:* What is the position of the fund for a special gynecological ward?

6632. *The Chairman.*] Just tell us how much the fund is, and where it is?—I do not know.

6633. But there was a fund collected for a gynecological ward?—I understand so.

6634. *Mr. Chapman.*] Here is a letter which Dr. Batchelor wrote to the Trustees. [Letter handed to witness and read: Exhibit lxviii.] On receipt of that letter was this resolution [read] passed by the Trustees?—Yes. [Copy of resolution handed in: Exhibit lxvii.]

6635. *The Chairman.*] So far as you know, this sum is available for any arrangement for building a gynecological ward?—Yes.

6636. *Mr. Chapman.*] In May last the question of accepting this fund was postponed by the Trustees?—Yes.

6637. Has any arrangement been made for getting a subsidy on this money?—No.

6638. *The Chairman.*] Are these all the funds?—There is a bequest by the late Mrs. Campbell. [Correspondence between Mr. Chapman and Mr. B. C. Haggitt handed in: Exhibit lxix.]

6639. What does the ordinary working-staff of the Hospital number?—I think that there are thirty-two.

6640. That is, male and female?—Yes; but I am not sure whether the number is thirty-two or thirty-three at the present time.

6641. What amount of fuel do you use in the Hospital?—The fuel and lighting are mixed together in the returns, but I will supply you with the items separately.

6642. Is your water-supply well looked after?—It is the Corporation supply, for which they charge us £52 per annum, paid half-yearly.

6643. Have you found the water faulty at all? Is it impure?—Sometimes the water is very muddy.

6644. What arrangements are there at present existing for convalescent patients?—In what respect?

6645. Is there anything in the nature of a convalescent ward?—There is not.

6646. Is there any place where the convalescent patients can sit when the weather is bad?—There is a reading-room at the back.

6647. How many will it accommodate?—From eight to ten. It is also used as a chapel by Mr. Torrance. It is only for males. There is a small greenhouse into which the females usually go.

6648. You say it will only accommodate eight or ten?—It will accommodate more than that.

6649. How many patients are there generally lounging about the place—I mean patients in a convalescent condition?—The number varies.

6650. What is the usual number?—Fifteen to twenty.

6651. That is, males and females?—You do not see many females walking about—possibly from six to eight.

6652. Then, there are about twenty males?—Yes, about that number.

6653. Are there any filters in the Hospital?—Yes, one in each ward.

6654. Are they carefully attended to, and cleaned out periodically?—Yes.

6655. Now, about the nurses: as to their duties, and what is the present state of the nursing in the Hospital?—The new by-laws are very full in regard to the duties of the nurses.

6656. Are the nurses careful in carrying out the by-laws?—As a rule, they are careful and very attentive. The male warders are also careful men.

6657. Are any complaints made against the nursing by the patients?—Occasionally you get complaints.

6658. How are they dealt with?—In minor cases by the house surgeon. When it is a matter of importance it is brought before the House Committee through me.

6659. How many nurses are there on night-duty at the present time?—Three female nurses and three male warders. There were two nurses up till twelve months ago.

6660. Where do they spend the night? Are they in one ward constantly?—There is a children's ward too.

6661. I mean, is there one female nurse to each occupied ward?—There are more than that, because one of the nurses takes in the lower ward (No. 7).

6662. Do the nurses stay in the ward all the night through?—I do not think that she does, because they have their meals in a little room off the ward. But I do not think they would be absent for more than a few minutes.

6663. Has the nurse any other duty that would take her away from the ward?—No.

6664. If a patient wanted assistance would she be available?—Yes, always.

6665. Are there any means by which a patient can call a nurse?—No.

6666. If the nurse should happen to be away, are there any means, as by a bell, by which a patient can call a nurse at night?—There are no special means.

6667. How is food supplied to the wards? How is it distributed?—It is put in trays in the kitchen in accordance with the dietary scale for the day. It having been served out in that way, it is then sent up the lift.

6668. How is the lift worked?—It is worked by a rope-pulley.

6669. Worked by a windlass?—No.

6670. Just by hand. Is that a slow process?—It is a pretty quick one.

6671. Is there not a likelihood of the food getting cold?—There is a liability of that.

6672. I mean, of the food being cold by the time that it reaches the ward?—There have been no complaints about that. The matter has been considered by the House Committee. Owing to the position of the kitchen, it is difficult to make better arrangements for the conveyance of food to the wards.

6673. You do not think that the food is sent up to the wards in as satisfactory a manner as it might be?—No, I do not; but it is a difficult matter to deal with under present conditions. I may mention that all the plates are sent up with covers over them.

6674. But that is not a hot plate. Have you tried hot water round the plates?—I tried that, but it was found that it made the tray too heavy. It would hardly work satisfactorily.

6675. Do you approve of the position the kitchen is in?—No. It is in a wrong position. It is under some of the wards, in the first place, and the ceiling of the kitchen itself is too low, and then there is the difficulty of conveying food to the wards.

6676. Is it lighted sufficiently for the cooks to see what is going on?—It is not in some places, and especially on dull days.

6677. How is it ventilated in the summer time?—It is very hot just around the roaster.

6678. More than a kitchen ought to be?—Yes.

6679. It must take some considerable time preparing the food—fish, meat, &c.—for a large hospital?—There is a daily delivery of fish and meat, and the fish is sent down cleaned and all ready for the cook. It does not lay about in the kitchen; just during the process of cooking.

6680. Have you ever seen signs of the food decaying?—I could not say that. Occasionally we have had bad fish, but it was at once sent back. I do not think that we have noticed anything go bad since we put up the safe.

6681. How often is milk supplied to the Hospital?—Once daily.

6682. Where is the milk kept?—In the kitchen. It is distributed to the wards, and the nurses and wardsmen keep it in little cupboards just outside of the ward-doors.

6683. It is not put in the wards?—No. There are cans provided for the milk, and when a patient wants a little milk the warder or nurse draws it off.

6684. How do you find it keeps?—There have been complaints from time to time.

6685. Who is the contractor for the milk-supply?—David Findlay, of Pine Hill.

6686. Does your milk ever go sour?—Yes.

6687. Does that take place in the Hospital, or is it the fault of the contractor?—I think it is the fault of the contractor. It occurs in the summer-time. It is very difficult to keep it fresh in that part of the Hospital. We sometimes scald the milk in the summer.

6688. Is there any objection to having a morning and evening delivery of the milk?—I think that is provided in the contract.

6689. Why is it not done? Is there any special reason against it?—I think it would tie down the contractor, and would probably cost more. When we have the contractor taking an interest in the supply we have very little trouble, but we sometimes get into the hands of a man who wants to make a little too much out of it, and then we have trouble.

6690. Then, you sometimes have trouble about your milk-supply?—Yes.

Dr. Truby King recalled.

6691. *Mr. Solomon.*] There are one or two points to which I wish to direct your attention. In the first place, we have been told by one witness for the Hospital Trustees that in considering the question of possible reform at the Hospital the question of ventilation should be placed very low down on the list. Supposing that we were considering the advisability of effecting reforms in the Hospital, where would you place ventilation in comparison with other possible reforms?—I have already stated that I consider it a first consideration.

6692. *The Chairman.*] Do you consider it of the first importance?—Unless, possibly, providing a special ward for the isolation of fever and other infectious cases ought to take precedence.

6693. You do not mean, do you, that it should be postponed until after isolation has been provided?—I think that both are of equal importance. It is an urgent matter.

6694. *Mr. Solomon.*] We have also heard from another witness that, although he admits that the Hospital offends in the various matters you have pointed out—that is to say, imperfect ventilation, too many beds, insufficient cubic space, improper closets, baths, &c., improper walls, &c.—he is of opinion that these defects are doing no harm. Can you agree with that?—No; certainly not.

6695. *Mr. Solomon.*] Do you think it reasonable to expect that the defects which we have heard so much about, and which the various witnesses throughout this inquiry have one after another pointed out and condemned, can remain in existence for any length of time without causing injury?—I am quite sure that you cannot get the best results in any hospital with so many defects.

6696. You do not agree that the process of fallowing would render the Hospital safe?—I have heard the system of fallowing and disinfecting the wards as used in the Hospital described to-day. The burning of sulphur in the quantity mentioned would, I think, exercise practically no effect at all. It was stated that 3lb. of sulphur are used for disinfecting a space of about 20,000 cubic feet. Koch experimented in smaller rooms, but when he used sulphur in the proportion of about 2cwt. to such a space he found that only a prolonged exposure would kill the spores of microbes. He concluded that for practical purposes sulphurous acid was useless as an ordinary aerial disinfectant. Even when a closed room was saturated with moisture and dense fumes of sulphurous acid, Koch found that the spores retained their vitality for a very long time, especially if they were not immediately upon the surface.

6697. You think it would be useless unless you kept the room saturated?—Even if the room

were saturated with moisture, and provision made for preventing the sulphurous acid escaping, a very prolonged action would be necessary to do any practical good.

6698. What about the walls?—The application which was made to the walls is said to have been a mixture of whiting, size, and ultramarine. I examined specimens of the coating on the wall, and found that it turned quite black in the flame of a spirit-lamp, and gave out a strong smell of burnt animal matter. It would certainly not be a disinfectant, and would tend rather to act as a cultivation-medium for microbes. No doubt the free circulation of fresh air through a ward for a prolonged period has an excellent effect, but it certainly seems an expensive method, and should not be necessary unless in exceptional circumstances.

6699. Do you think that any amount of the most perfect management by nurses could render the present system of ventilating the Hospital efficient?—No, certainly not; there are not the means there. I have heard a statement with regard to the inlets and outlets provided, and the estimation of the currents at such-and-such rates, and that, therefore, there must be such-and-such an inflow, and such-and-such an outflow; but that estimate makes no allowance for the fact that the ventilating openings are placed for the most part on the same side of the ward, and that there must therefore be local streams flowing between one opening and another which do not affect the general atmosphere of the ward. In the Wellington Hospital there were Tobin's tubes; and, in order to increase the ventilation, openings were made near the ceiling-level, above the Tobin tubes. Instead of producing the desired effect, I found that the upper openings diminished rather than increased the ventilation. The air came in at the Tobin tubes, and a considerable proportion of it passed directly out at the upper openings, or else the air passed in at the upper openings and flowed down through the Tobin tubes. Such results were to be expected from the violation of a primary rule in ventilation, that outlets should be situated at a distance from inlets.

6700. Then you cannot agree with Dr. Colquhoun, that intelligent management by the nurses would render the existing system of ventilation effective?—I cannot. A very important point that I wish to refer to is that there is no adequate means of providing warmth, and that without warmth it is absolutely impossible, in a climate like this, to ventilate a ward properly in winter.

6701. Did you read in the paper of Sir James Hector's experiences in the Hospital the other morning, when he paid a surprise visit?—I did.

6702. If a proper system of ventilation had been in existence, could such a state of affairs as Sir J. Hector found that morning have been possible?—I think it might. It might arise from carelessness, which may happen in the best hospital; in fact, I have seen it in good hospitals.

6703. But with proper supervision might we expect it to happen?—If there were proper supervision it could not happen except by accident. If the ventilation were properly looked after, it could not happen in any well-arranged ward.

6704. We find in this particular case that the reason suggested was that the windows could not be kept open because the wind was blowing too strong?—That is likely enough. I have seen the same thing in Wellington, where there was no adequate means of warming the wards.

6705. We have also heard that the closet was not flushed: that is a possible result, is it not, of the style of closet used here?—Most of the closets appear to be of a good type. A patient may have neglected to flush the closet; but that difficulty could be easily obviated by the use of automatic flushing-gear. With regard to the question of warming and ventilation, I found in Wellington that it was impossible on cold days in winter to keep the air of a ward in a proper state of purity unless the temperature was allowed to fall at times as low as 40° Fahr.

6706. We have also been told by another member of the staff that the Dunedin Hospital is one of the healthiest hospitals in the world. Do you think that such a statement is a reasonable one?—I cannot account for the statement that the Hospital is so healthy, under the conditions that I have seen. I certainly cannot understand it.

6707. This is the gentleman who has invariably used the Hospital as a sanatorium, and says that it never failed him when he called on it for that purpose. We have been told by another medical gentleman that, although admitting the defects which have been pointed out by you, he thinks the Dunedin Hospital compares favourably with the average modern hospital. Is that correct or not?—Upon what basis does he compare the sanitary conditions of hospitals?

6708. We do not know. Is that opinion correct?—It certainly is not my experience.

6709. I want you to tell me whether you consider that there is any exaggeration—it has been called "a gross exaggeration"—in the statement which I made in my opening of this case, "that radical changes are essential in order to give the patients in this Hospital a fair chance of recovery"?—I do not think there is any exaggeration in that. I think it is, perhaps, scarcely a fair way of putting the question, however. I should say that it does not give them the conditions for recovery that they should have in a hospital.

6710. Would you say that radical changes are necessary to give the patients the chance of recovery which they ought to have in a hospital?—Yes, I should certainly say that.

6711. We have been told that it is a fact that all modern knowledge goes to show that the state of affairs which exists in the Dunedin Hospital ought not to exist; yet that the experience of the medical gentleman to whom I have just referred in the Dunedin Hospital goes to show that it does not make much difference. Now I would ask you whether, other things being equal, you can suppose such a state of affairs, and do you think that, if it existed, the death-rate or the average stay in the Dunedin Hospital could, under any circumstances, be expected to compare favourably with a satisfactory hospital. We will take the death-rate first?—The death-rate may apparently compare favourably, but it is not reliable, because there may be other factors which would tend to render the Hospital death-rate here low.

6712. But I said, supposing other things to be equal. I will put it to you in this way: suppose an equality of circumstances in this and other places, do you think that either the death-rate, the average stay of patients, the surgical results, or the results obtained by surgeons here, could possibly be expected to compare favourably with the results obtained in a satisfactory modern hospital?

—No, I do not; the average stay might, because the average stay is often low in hospitals which have a large mortality; but with regard to the other points, I do not think so.

6713. Our attention has been drawn to a death-rate of 7 per cent. in 1877, whilst now it is 10 per cent., can you suggest any explanations of that?—I think I can.

6714. What, then, do you suggest has caused the death-rate to be higher here now than it was in 1877?—If those figures are to be taken as correct, as showing—as it appears to be desired to show—that a death-rate of 7 per cent. could be got in a hospital that has all the faults we have just heard of, and that a death-rate of 10 per cent. exists in the same hospital after numerous improvements in its hygienic condition have been made, then I say that the whole science of sanitation is a perfect farce.

6715. In other words, that the modern science of sanitation is a snare and a delusion?—But I think that there is an explanation. I think it is possible to show how statistics may be comparatively valueless under certain circumstances. In the first place, one objection to the Hospital in 1877 appears to have been that the mattresses were filled with straw. I do not know what the material may be that they are now made of, possibly flock or horsehair, but straw mattresses so far as hygiene is concerned are regarded as exceedingly good, nothing else is used in the new Belvidere Hospital at Glasgow; they are considered to be the best in regard to infection, are readily destroyed, and need never be allowed to get dirty. With regard to the system of removal of slops—of carrying them out through the ward twice daily—that is not, so far as hygiene is concerned, a specially undesirable practice, provided that the utensils are kept perfectly clean in order to avoid the growth of micro-organisms; in other words, you have not such great danger from micro-organisms in a crude method of that kind as you have from drain gas delivered directly into your wards. That has been found to be the case at Home in regard to many sanitary improvements. The water-carriage system has often been attended with the greatest evils, and this has led some people to declare that the old crude system which preceded it was much better; unless the water-carriage of sewage be accompanied by perfect drainage, it becomes a source of the greatest danger, because it may take sewer-gas directly into the building, and directly into the rooms. There is practically little or no danger from fæces or other animal excreta, so long as they are removed in due time. The old system was indecent, but not necessarily dangerous. Another point is, as to the building having being whitewashed—probably lime and water were used; now, size and whiting are improperly employed. These, at any rate, are some reasons which readily suggest themselves, and doubtless there are other explanations—for instance, with regard to the kind of patients who were formerly admitted into the Hospital. But as I have said before, it is impossible without having the whole of the facts before one to arrive at any reliable conclusions from a mere statement of statistics.

6716. *Mr. Chapman.*] What method of disinfecting the walls would you suggest in place of sulphur?—I do not think that disinfection should be much resorted to; the fact is, that it is aseptic conditions you want, not antiseptics, for once the germs of micro-organisms exist they are exceedingly difficult to kill. It might be well to wash the walls with a 10 per cent. solution of crude carbolic acid; and chlorine derived from chloride of lime might be used as an aerial disinfectant; it is not, however, very penetrating.

6717. How would a wash of corrosive sublimate do?—It would act very efficiently, but there might possibly be a risk of causing mercurial poisoning.

6718. You have made some experiments with some of the bricks taken from No. 7 ward?—Yes.

6919. Your experiments were made with the view of ascertaining whether the bricks harboured micro-organisms?—Yes. You will remember that in the earlier part of the inquiry I was asked to give an opinion as to the probable state of the walls, and expressed my inability to do satisfactorily. To settle the matter, I afterwards procured a brick from ward No. 7. It contained no appreciable quantity of organic matter, and, although thirty cultivations upon sterilized boiled potatoes were made from various portions of the brick, no growth of microbes resulted in a single instance. A few spores of mould-fungi, which accidentally gained access to two of the potatoes, grew actively, as did also an inoculation from an erysipelas case. The conclusion is obvious. [Specimens exhibited.]

6720. I think you have stated that you would be surprised if good results were obtained in this Hospital?—I said a total of good results: as to individual good results they are perfectly consistent with an unhealthy Hospital; but you would not get an average of good results such as you would expect in a healthy Hospital, if there be any truth in medicine or in sanitary science.

6721. Dr. Maunsell, who is a surgeon who has been connected with the Hospital for many years, has said that with strict antiseptic precautions he has always had good results, and that in his long experience he has had nothing to complain of as to his results?—I cannot, in a matter of this kind, take the experience of any individual as against the experience of the whole civilised world.

Witness: There are one or two points in regard to the Hospital which I have observed since I was examined before. I refer to the site, and the drainage, as being imperfect.

6722. *Mr. Solomon.*] The subsoil-drainage you mean?—I have discovered that there is no proper system of subsoil-drainage, and the drains for carrying the sewage matter are defective.

6723. How defective?—They are not properly ventilated, and there is no proper system of flushing. As a result of these things the currents of air must be polluted. The number of water-closets is also inadequate.

6724. What should they be?—One watercloset is used for every fifteen or sixteen patients, and it serves as a slop-sink and urinal as well.

6725. Then there should be twice as many closets?—One for eight patients and two for twelve is put down as the number, when slop-sinks and urinals are provided as well. I also find that the defective condition of the bath-room floors has not been sufficiently emphasized. With regard to the ventilating-shaft, I may explain that I only suggested it as a means by which, without large

alterations to the structure, the wards might be efficiently ventilated. My statement was in answer a portion of the northern end of the wall, that would be preferable, as affording more light and a to a question. If it is structurally possible, as has been suggested, to take down the roof and freer circulation of air.

Dr. ROBERTS recalled.

6726. *Mr. Solomon.*] Taking Mrs. S——'s case first: I want you to tell me, assuming that she was poisoned by septic germs in the atmosphere of the ward she was in, whether you would expect to find the results that you did find at the *post-mortem* examination?—Yes.

6727. Is there anything surprising after an Emmet operation to find that the wound became poisoned from septic influences from without; that the inflammation spread from the uterus through the fallopian tubes into the peritoneal cavity, causing acute peritonitis?—No, there is nothing impossible or unusual in this method of death from peritonitis.

6728. Now, we have been told by Dr. Jeffcoat that it is altogether incredible and unreasonable to expect that the poison could travel in the way I have suggested. Is there any foundation for such a statement?—I would answer that it is not at all unreasonable, but there are facilities for it spreading in other directions.

6729. But it can be taken from the uterus through the fallopian tubes into the peritoneal cavity?—Certainly it can.

6730. But suppose that it did not go in that direction, but went into the lymphatics, would you expect any inflammatory indications to show that it did so?—Decidedly. I should expect to find suppurative inflammation of the cellular tissues.

6731. Did you examine Mrs. S——, at the *post-mortem*, to see if there was such an indication?—I did most carefully. I looked for it, but failed to find it in the cellular tissues.

6732. Then, it was the personal examination you made that guided you to the conclusion as to the direction in which the poison travelled in her case?—Certainly. There was evidence of it, as plain as it possibly could be.

6733. What direction had it taken?—Along the line of the mucous membrane and along the tubes into the peritoneum. I would like to say that the *post-mortem* notes somewhat interfere with the theory that peritonitis was a secondary focus of a pyæmia. I do not remember dictating that the inflammation was more intense in the pelvis than it was in the neighbourhood of the fallopian tubes.

6734. Does that lend colour to the suggestion that it travelled in the direction I have indicated, or does it lead you to the conclusion that the poison was taken into the lymphatics?—It implies that the peritoneum became infected in the neighbourhood of the fallopian tubes. If it had been brought in by the blood the inflammation would not have been more intense in the neighbourhood of the pelvis.

6735. We have discussed the question whether she had chronic endometritis before operation: Does your examination enable you to answer that question?—At the *post-mortem* we found that the uterus was not of normal size; its walls were a little thicker than usual. That enlargement was due to one of two causes: either the uterus had not recovered its normal size after pregnancy, or it may have been due to inflammatory induration from chronic inflammation of the womb.

6936. *The Chairman.*] Which she had not recovered from since pregnancy?—I should say that it was chronic metritis of less than three months' standing. We have the fact that the Emmet operation was necessary on account of the uterus being sub-involuted, which I reckoned to find. The two diseases—thickening of the walls of the uterus and thickness resulting from sub-involution—so closely resembles each other that with the naked eye you cannot detect the differences except with the greatest difficulty; indeed, it is difficult to do so microscopically. I should, however, say that the evidences of chronic metritis were more absent than present.

6737. Assuming that chronic metritis were present, was there anything in her condition which would bring about the result which occurred?—No. There was no evidence which would account for the septic poisoning, though the conditions were consistent with it, especially in the lower parts of the uterus.

6738. With chronic endometritis?—Yes; but the changes in the mucous membrane were entirely hidden or masked by the conditions which produced the intense inflammation.

6739. Would chronic endometritis be likely to produce poison of the wound?—Under certain circumstances it might, but in simple catarrh it would not be likely to do so. The catarrh is produced generally in conditions of sub-involution, or enlargement, but under these circumstances it would not be capable of inoculating a wound.

6740. If the wound becomes septic, the germs must come from where?—They must come from without.

6741. Suppose that you had got good hospital air, a septic surgeon, and septic instruments, is there still the possibility of infection?—If you exclude the possibility of germs you necessarily exclude the possibility of poison.

6742. We have heard the opinion expressed by Dr. Stenhouse that septic poison may be created autogenetically, by conditions within the patient. What do you say to that?—I think that the notion that the mischief could be generated by the individual was exploded years ago.

6743. Is it possible?—It is not possible, according to my lights.

6744. You say that the germs must have been brought there from somewhere?—Yes.

6745. Now, in Mrs. S——'s case—I want you to answer the question carefully—is the result which you found perfectly consistent with the fact that her trouble was produced by the unhealthy condition of the atmosphere of the ward?—The wound was poisoned somehow.

6746. Now, you know the condition of the Hospital—the want of ventilation and the condition of the wards generally. We have been told that in the ward in which Mrs. S—— was kept for a fortnight before operation there was a septic case which had been discharging pus, which was liable to contaminate the air, and that this case had been in the ward for eight months. We have further

heard that, during the fortnight which elapsed from the time of Mrs. S——'s admission to the Hospital until she was operated on, she was placed under chloroform and submitted to one or two examinations. I ask you was there anything unlikely, under these circumstances, that the wound should be poisoned?—Of course, poison could be easily introduced under these circumstances.

6747. Was it likely or unlikely to have been produced in that way?—It was not at all unlikely.

6748. In your opinion, does the fact of two cases in the same week—one of a reduction of a labial cyst, the other an Emmet—becoming infected by septic poisoning, lend colour to the probability that the air of the ward in which the cases were was bad, and that the poison was taken from the air?—It lends colour to the theory that the air was bad.

6749. One medical gentleman who has been put into the witness-box has suggested to us the very reverse for the reason, as he says that if Mrs. S—— became poisoned by the air of the ward and died, Mrs. T——, who was poisoned by the same air, must have died also. Can you subscribe to that theory?—I think that is a remarkable statement to make, for the reason that, in case of inoculation of given germs into two individuals, the results would be influenced by the individuals' power of resistance—influenced in the first place by the power of resistance by the individual, and in the second place by the place of inoculation. That is to say, if I inoculate the same germs in the arms of two individuals, it is reasonable to suppose that one might die and that the other might have a more or less severe illness, but recover—the difference of result being due to the difference of the power of resistance to the disease. But, if I were to inoculate in the arm of one man and in the periotoneum of the other, I should expect very different results—local results in the one, and fatal in the other. I should like to explain the difference in the terms that have been so much used during this inquiry—pyæmia, septicæmia, and sapræmia. It is very simple. They are all produced from one cause—the circulation of poison in the blood, the result of the action of bacteria. But there are clinical distinctions which we must draw, because there are various localities where poisons may be produced. If we have a cavity, as the uterus, or flap-wounds, in which are retained clots of blood, or dead matter no longer belonging to the body, the bacteria gain access thereto, develop in these matters and produce a poison, which is absorbed into the system and constitutes sapræmia. If, however, bacteria gain access to the lymphatics they produce suppuration and necrosis in the living tissues, and the poisons are generated, by being developed from that along the tract of inflammation. This constitutes septicæmia. If, thirdly, bacteria gain access to the blood, and multiply within it, their poisons are distributed all over the body. This constitutes pyæmia. It is a special clinical feature of bacteria that being lodged in spots where circulation is slow they are arrested and give rise to secondary points of inflammation and abscess. These are, therefore, merely clinical terms used for convenience to distinguish between the different affections, and it is really a question where the manufacture of the poison takes place.

6750. You have told us that it is not at all unlikely that Mrs. S—— would have been poisoned by the condition of the atmosphere of the ward?—It is not.

6751. As the result of your own examination of the patient after death, could you find any causes which were actually consistent with the woman's death. Tell us what you think was a perfectly consistent theory with her death?—I will not insist that I know the method by which the woman was inoculated. It is only by inference that that can be ascertained. With wound infection, suppurative endometritis, and extension, the inflammation travelled from the uterus into the fallopian tubes, and thence to the peritoneum. I cannot arrive at any other conclusion than that such was the cause of death.

6752. And that is what you certified to, is it not?—Yes. I cannot, however, bind myself down to prove that the woman was inoculated by the air.

6753. *Mr. Chapman.*] You think it may be a presumption that the woman's inoculation was connected with the state of the ward?—Certainly.

6754. A statement was made by one of the witnesses that this woman's uterus was enlarged?—Yes; I agree with him.

6755. In regard to the "sticky, yellowish discharge," Dr. Batchelor says he is not responsible for that, the entry having been made by his clerk. Do you think that that discharge suggests anything, or throws any light on the woman's condition?—I have already said that the conditions were consistent with the fact of there having been a discharge before death; but there was no evidence of the existence of such a condition. As I have said, if it existed it was masked by the tremendous inflammation that took place.

6756. *The Chairman.*] If it had existed what would it have indicated?—It would have indicated endometritis in the lower part of the uterus possibly, but certainly not in the tubes.

6757. Would that probably be the source or home of the septic trouble?—Not without septic germs being introduced.

6758. *Mr. Chapman.*] When might the germs have been introduced? At examination, or operation?—It might easily have occurred at examination.

6759. Even in almost a perfect condition of the atmosphere?—In the ordinary air.

6760. Even the possibility of them being introduced in the operating-room?—There is always the possibility of infection.

APPENDICES.

APPENDIX A.

REPORT OF PRELIMINARY DISCUSSION. [Not printed.]

APPENDIX B.

LIST OF WITNESSES.

1. Batchelor, Ferdinand Campion—Mem. R. Coll. Surg. Eng. 1871. Lic. R. Coll. Phys. Ed. 1871. M.D. Univ. Durh. 1885 ... ... Page 11, 14, 28, 42, 66, 81
2. Maunsell, Henry Widenham—Mem. R. Coll. Surg. Eng. 1867. Bach. Med. Univ. Dubl. 1867. Lic. Midwif. K. & Q. Coll. Phys. Irel. 1867 ... ... 121, 142, 156
3. Roberts, William Stewart Weeding—Mem. R. Coll. Surg. Eng. 1876 ... 74, 103, 266
4. Fergusen, Henry Lindo—Lic. K. & Q. Coll. Phys. Irel. 1880. Lic. 1880; Fell, 1883; R. Coll. Surg. Irel. 93
5. Closs, Joseph Osborne—Bach. Med., Mast. Surg., Univ. Edin. 1882 116
6. DeLautour, Harry Archibald—Mem. R. Coll. Surg. Eng. 1874 107
7. King, Frederick Truby—Bach. Med., Mast. Surg., Univ. Edin. 1886 ... 132, 139, 263
8. DeRenzi, Arthur Castriol—Mem. R. Coll. Surg. Eng. 1887. Lic. Soc. Apoth. Lond. 1887 123
9. Macdonald, Robert Gordon—Lic. R. Coll. Phys. Edin. 1881. Lic. Fac. Phys. & Surg. Glasg. 1876 145
10. Stenhouse, William MacStravick—Bach. Med., Mast. Surg., Univ. Glasg. 1875. M.D. Univ. Glasg. 1877 171
11. Jeffcoat, Frederick Howarth—Bach. Med., Mast. Surg., Univ. Edin. 1886 ... 184
12. Colquhoun, Daniel—Mem. R. Coll. Surg. Eng. 1877. Mem. R. Coll. Phys. Lond. 1880. M.D. Univ. Lond. 1880 204
13. Ogston, Francis—Mast. Surg. 1873. M.D. Univ. Aberd. 1875 198
14. Macdonald, John—Lic. R. Coll. Phys.; Lic. Midwif. Edin. 1864. Lic. R. Coll. Surg., and Lic. Midwif. Edin. 1858. Lic. Midwif. R. Coll. Surg. Eng. 1866 219
15. Coughtrey, Millen—Bach. Med., Mast. Surg. Univ. Edin. 235, 236
16. Copland, George Anderson—Bach. Med. Univ. N.Z. 1889 ... ... 158, 162, 234
17. Robert Henry Hogg, Clinical Clerk 216
18. Peter Miller, Chairman of Trustees 217
19. Andrew Burns, Hospital Steward 256
20. N. Y. A. Wales, Architect 222
21. Mrs. Janet Burton, Hospital Matron 226
22. Miss Mary Ellen Fraser, Nurse 227
23. Miss Caroline Shaw, Nurse 228
24. Miss Mary Waymouth, Nurse 229
25. Miss Ellen Maria Monson, Nurse 233

APPENDIX C.

LIST of DOCUMENTS submitted and referred to in the evidence.

By Dr. Batchelor: Complaint of 19th August, 1890, No. i. Letter to Chairman, Hospital Trustees, 22nd July; No. ii. Report of medical staff, 27th May, 1889; No. iii. Table of death-rates in Hospital; No. iv. Minute-book of the medical staff, page 166; No. v. Ditto, page 143; No. vi. Scrap-book, p. 31, *a* and *b*; No. vii. Statement of cases to medical staff; No. viii. Letters to Trustees in Mrs. T——'s case; No. ix. Wilson's "Hygiene," p. 261; No. x. Plans of wards, Nos. 1 and 7; No. xi. "Ashurst," p. 1110; No. xii. Amount of bed-space; No. xiii. "Erichsen," I., p. 13; No. xiv. "Lawson Tait," p. 133; No. xv. "Spencer Wells;" No. xvi. "Heath," II., p. 417; No. xvii. Memorandum from Trustees to Dr. Batchelor, scrap-book; No. xviii. Letter—Dr. Barclay to Dr. Batchelor, 9th August, 1890; No. xix. Table of cases, 9th to 22nd July; No. xx. *Evening Star*, 12th March, 1889; No. xxi. Letter—Dr. Batchelor to Trustees, scrap-book, p. 57; No. xxii. Extract from Dr. Batchelor's note-book, showing deaths in Hospital and private practice; No. xxiv. Comparative list of operations in Christchurch and Dunedin Hospitals for 1889–90; No. lxii.

By Trustees: Reports of Trustees, 1886–90; No. xxiii. Dunedin Hospital By-laws; No. xxv. Need of Hospital reform, suggestions by Dr. Batchelor, see p. 1, scrap-book; No. xxvi. Mrs. T., chart; No. xxvii. Mrs. P., chart; No. xxviii. Mrs. S., chart; No. xxix. Letter—Dr. Batchelor to Trustees, 24th May, 1886; No. xxx. Circular to hospital staff from Trustees, 7th August, 1890; No. xxxviii.

By Dr. Roberts: Report by Dr. Roberts, 27th October, 1884; No. xxxi.

By Dr. DeLautour: Plans of syphon-traps; No. xxxii.

By Dr. Truby King: Diagram of Dunedin Hospital traps; No. xxxiii. Diagram of traps at Seacliff; No. xxxiv. Diagram of drains at Wellington Hospital; No. xxxv. Section of drains at Wellington Hospital; No. xxxvi.

By Dr. DeRenzi: Plan of a ward in Christchurch Hospital; No. xxxvii. List of operations in the Christchurch Hospital; No. liv.

By Dr. Copland: Deaths in Dunedin Hospital within one week of admission; No. xxxix. Return of percentage of deaths in four hospitals; No. xl. Return of patients beyond two months'

residence; No. xli. Return of surgical operations in 1890; No. xlii. List of operations; No. xliii. List of Dr. Batchelor's cases; No. xliv Gynecological cases in 1888; No. xlv. Number of cases in each of the wards on 15th and 22nd July, 1890; No. xlvi. Return of cases of operations not referred to in the consultation-book; No. xlvii. Return of cases of erysipelas, 1st January, 1889, to 31st August, 1890; No. xlviii. Memorandum by Dr. Copland of 2nd April, 1889; No. xlix. Return of *post-mortem* examinations to July, 1890; No. l. Certificate and *post-mortem* report in Mrs. S—— 's case; No. li.

By Dr. Colquhoun: Memorandum to Trustees from the staff, 17th May, 1887; No. lii. General hospital statistics; No. liii.

By Mr. Wales: Plans of Hospital; No. lv.

By Dr. Coughtrey: Scheme of reform; lvi. Table of areas of sites for hospitals; No. lvii. Letter—Dr. Coughtrey to Trustees, 29th May, 1889; No. lviii. Analysis of hospital returns for New Zealand; No. lix. Same for Tasmania; No. lx. Return of deaths after operations by various surgeons in Dunedin; No. lxi.

By Mr. Burns: Return of cost of improvements; No. lxiii. Return of cost of drugs; No. lxiv. Return of cost of additions and repairs; No. lxv. Improvements by Public Works Department; No. lxvi. Resolution of Trustees *re* erection of nurses' home; No. lxvii. Correspondence *re* women's ward; No. lxviii. Extracts from late Mr. R. Campbell's will; No. lxix. Plan of City, showing position of outfall of Hospital drains; No. lxx. Report on building by Mr. Wales; No. lxxi. Return—Nurses' Home Fund; No. lxxii. Return—consumption of coal in Hospital; No. lxxiii.

APPENDIX D.

PLANS ATTACHED TO THE REPORT.

Drawing No. 1. Present Hospital, Ground Plan.

Drawing No. 2 (Fig. 1). Present Hospital, First Floor Plan.

Drawing No. 2 (Fig. 2). Locality Plan, showing drains.

Drawing No. 3. Plan of Ward 7 and Tower Ward, with beds as occupied on 16th July, 1890, referred to in the evidence as exhibits.

Drawing No. 4 (Fig. 1). Plan showing conversion of Building into Pavilion Wards, as suggested by Drs. Truby King and Ogston.

Drawing No. 4 (Fig. 2). Detail drawing of Closets, &c., for same, in a new tower.

Drawing No. 5 (Fig. 1). Plan showing suggestion for open quadrangle arrangement of Wards, and additions.

Drawing No. 5 (Fig. 2). Sections of same.

APPENDIX E.

ADDRESS BY MR. SOLOMON. [Not printed.]

APPENDIX F.

ADDRESS BY MR. CHAPMAN. [Not printed.]

APPENDIX G.

MINUTES OF PROCEEDINGS. [Not printed.]

APPENDIX H.

EXHIBITS. [Not printed.]

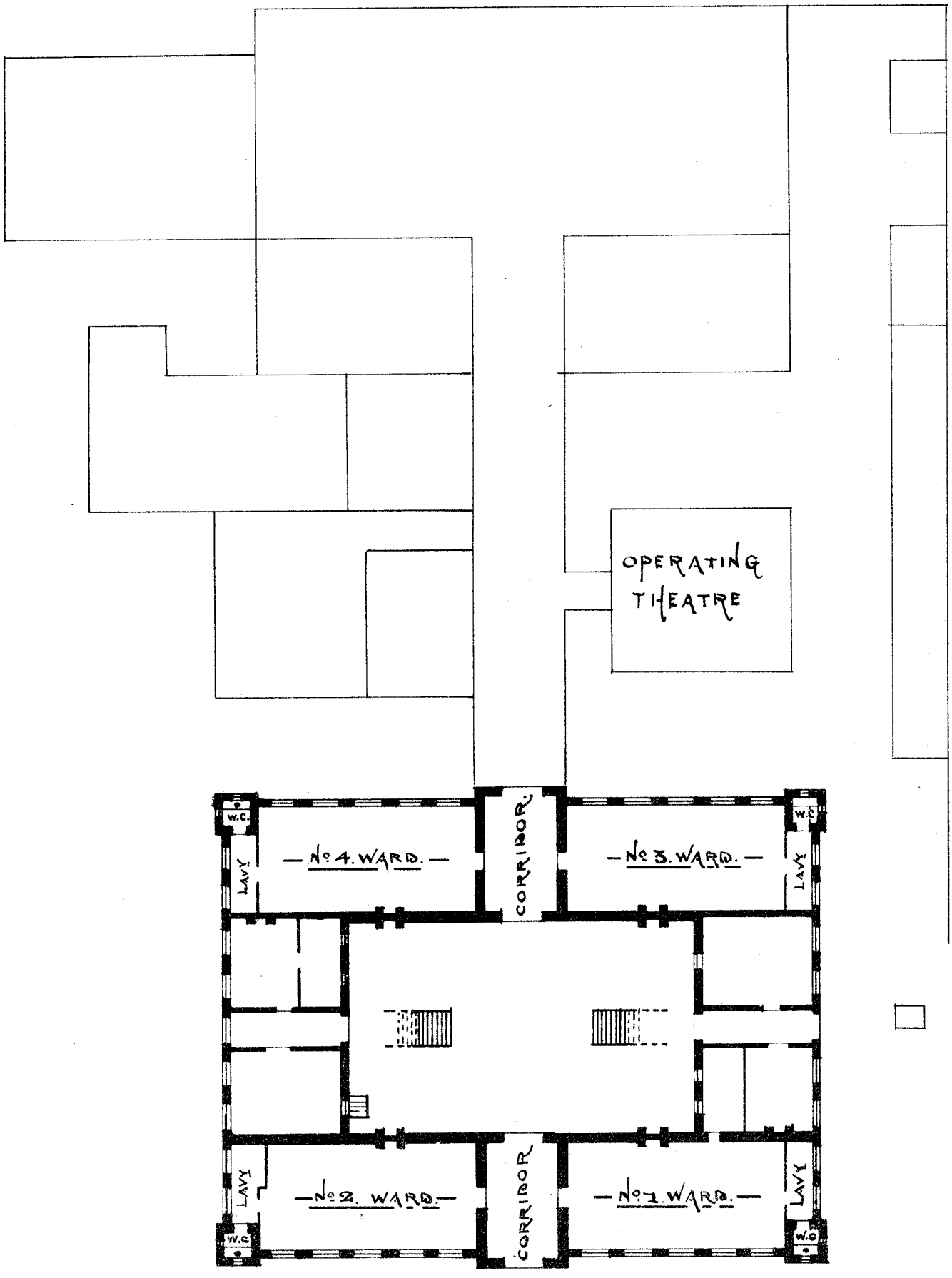
[*Approximate Cost of Paper.*—Preparation, nil; printing (1,300 copies) £174 15s.

By Authority: GEORGE DIDSBURY, Government Printer, Wellington.—1891.

DUNEDIN HOSPITAL COMMISSION. 1890.

DRAWING No 1.

CUMBERLAND STREET



GROUND FLOOR PLAN.

Scale 30ft=1inch

KING STREET.

DUNEDIN HOSPITAL COMMISSION. 1890.

DRAWING No 2.

LOCALITY PLAN.

SCALE 3 CHAINS = 1 INCH.

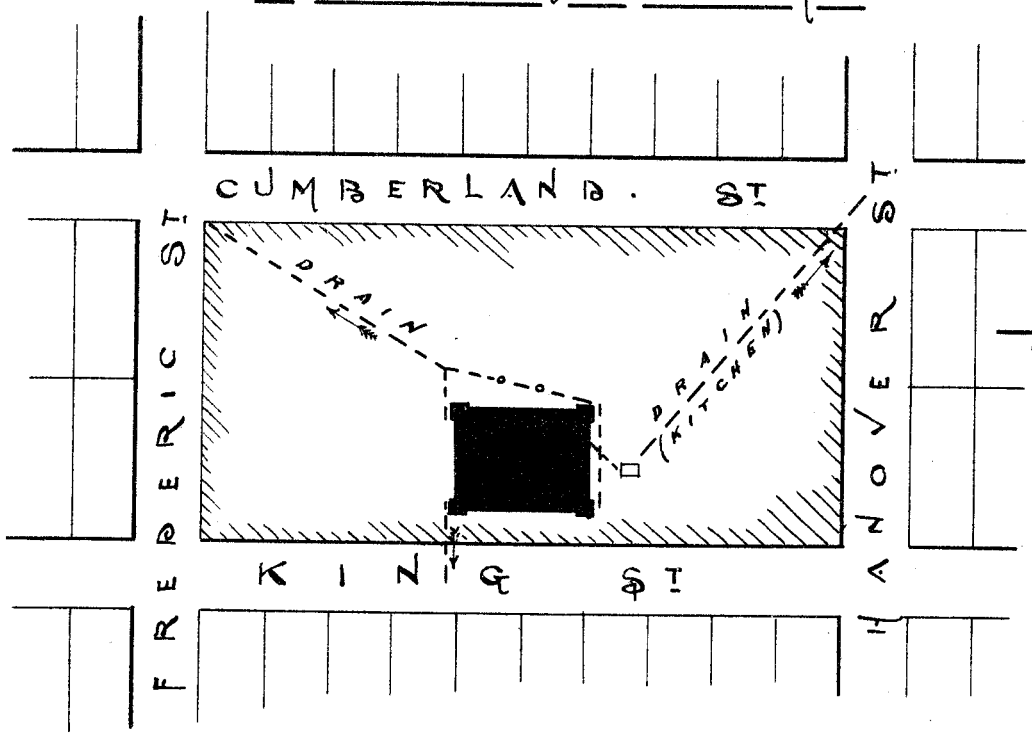


FIG. 2.

CUMBERLAND ST

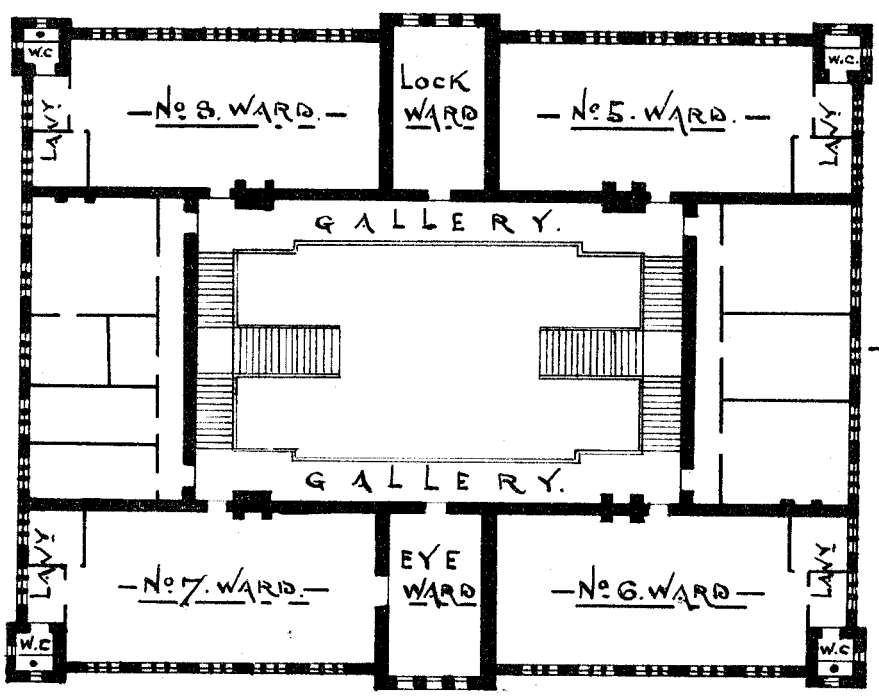


FIG. 1.

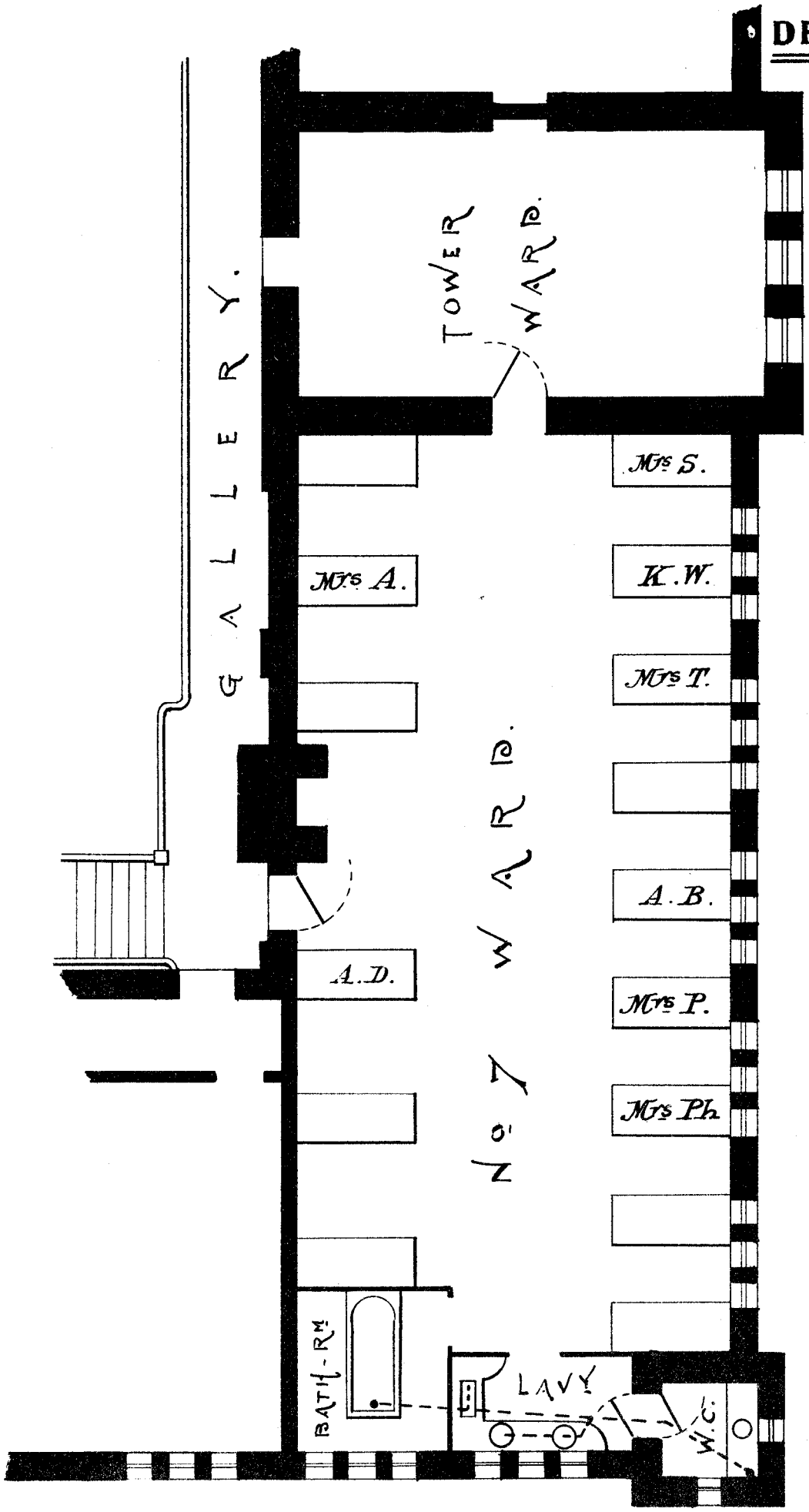
FIRST FLOOR PLAN.

Scale 30 ft = 1 inch.

KING STREET.

DUNEDIN HOSPITAL COMMISSION. 1890.

DRAWING No 3



PLAN OF No 7 WARD. & TOWER WARD.

Scale 8 Feet = 1 inch.

DUNEDIN HOSPITAL COMMISSION. 1890.

DRAWING No 4.

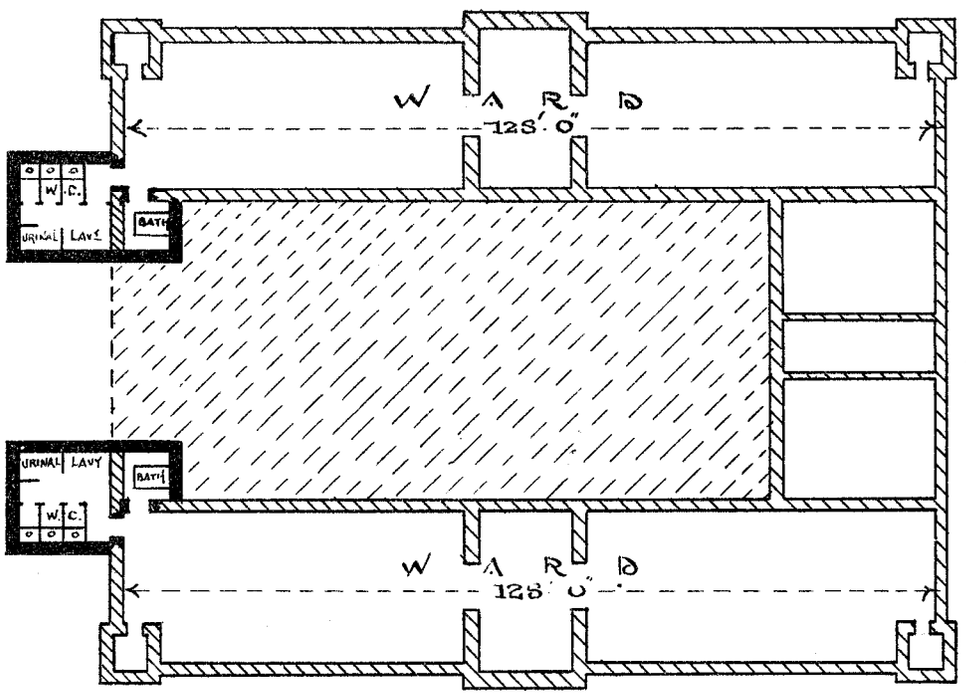


FIG. 1

Scale. 30 Feet = 1 inch.

Proposed Removal shown thus :-

" Additions " " :-

Present Building " " :-

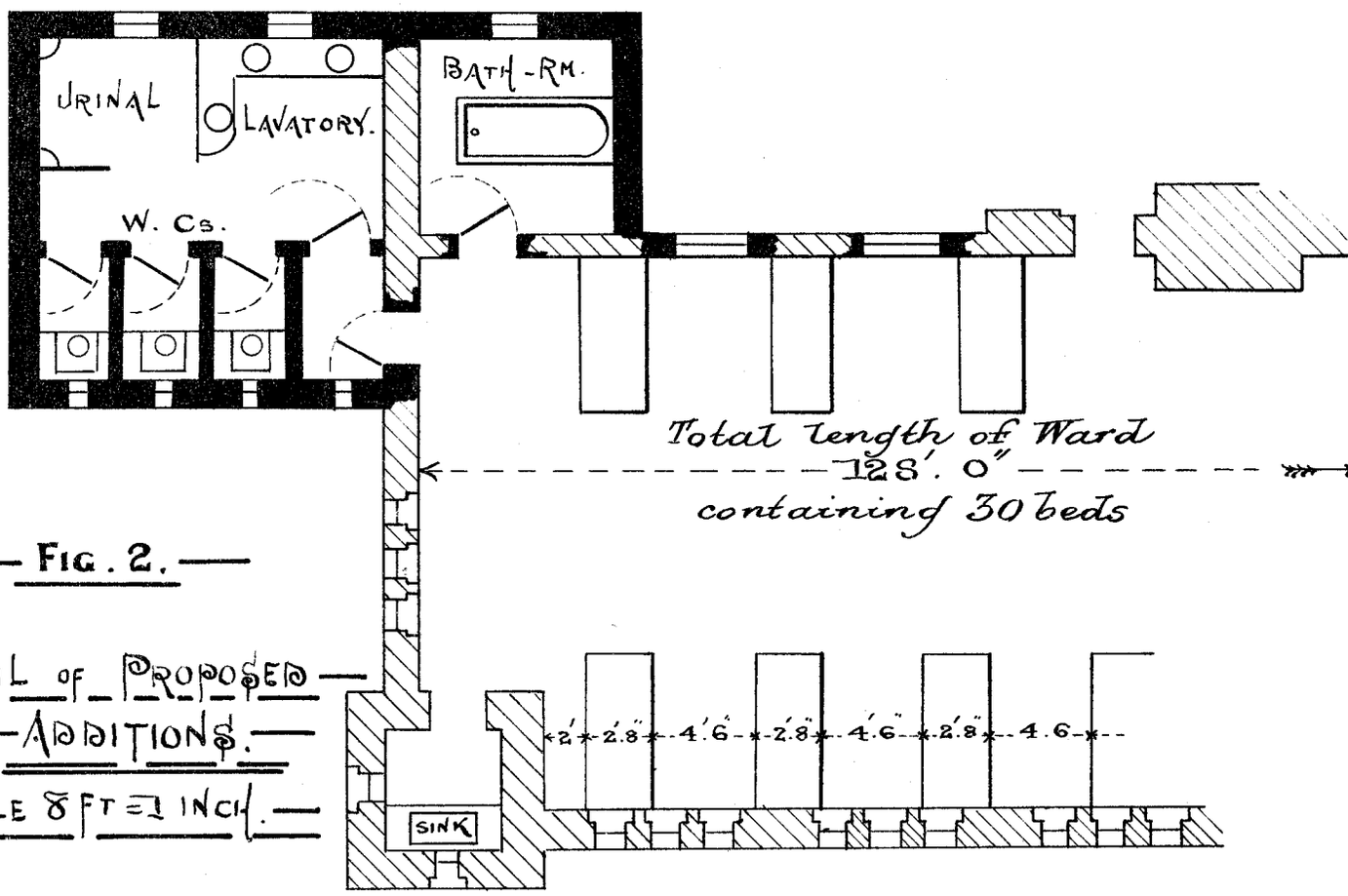


FIG. 2.

DETAIL OF PROPOSED ADDITIONS.

SCALE 8 FT = 1 INCH.

DUNEDIN HOSPITAL COMMISSION. 1890.

DRAWING No 5.

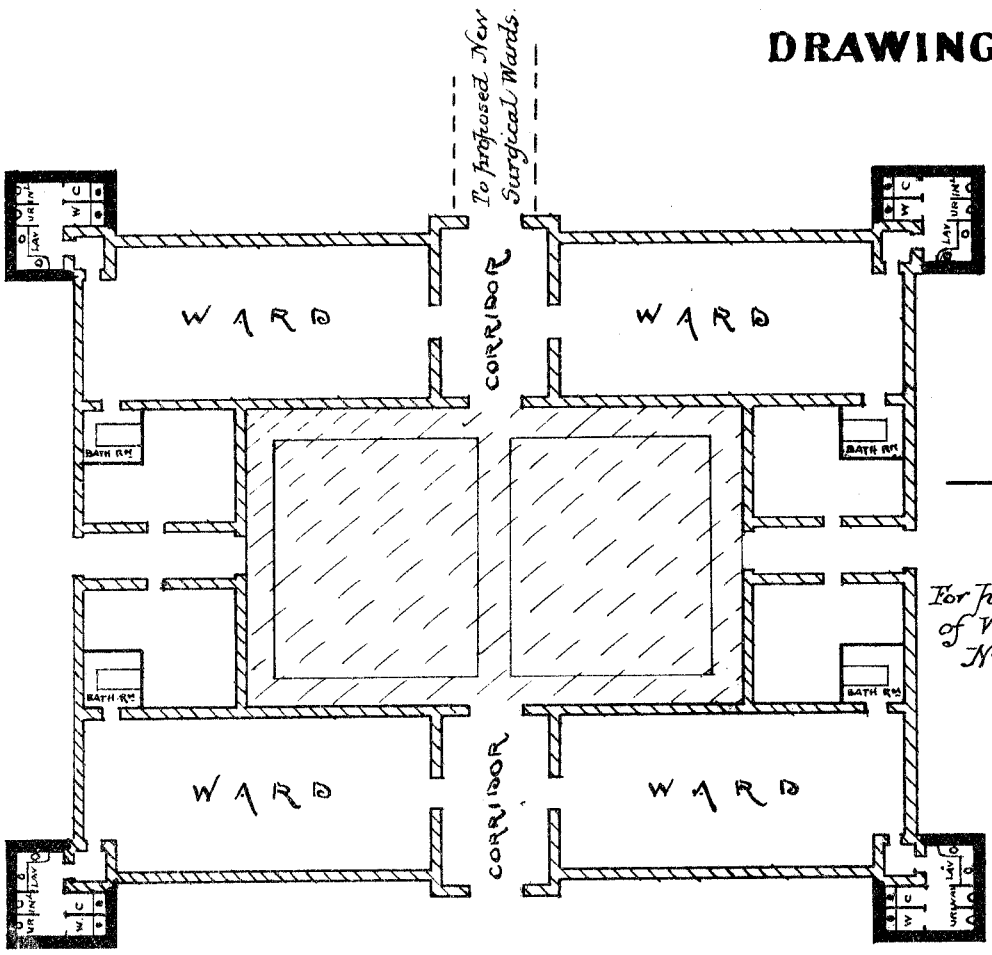


FIG 1.

For present arrangement of W.C.s &c see Drawg No 1.

GENERAL PLAN.
SCALE 30FT = 1 INCH.

Proposed Removal shown thus :-
" Additions " " :-
Present Building " " :-

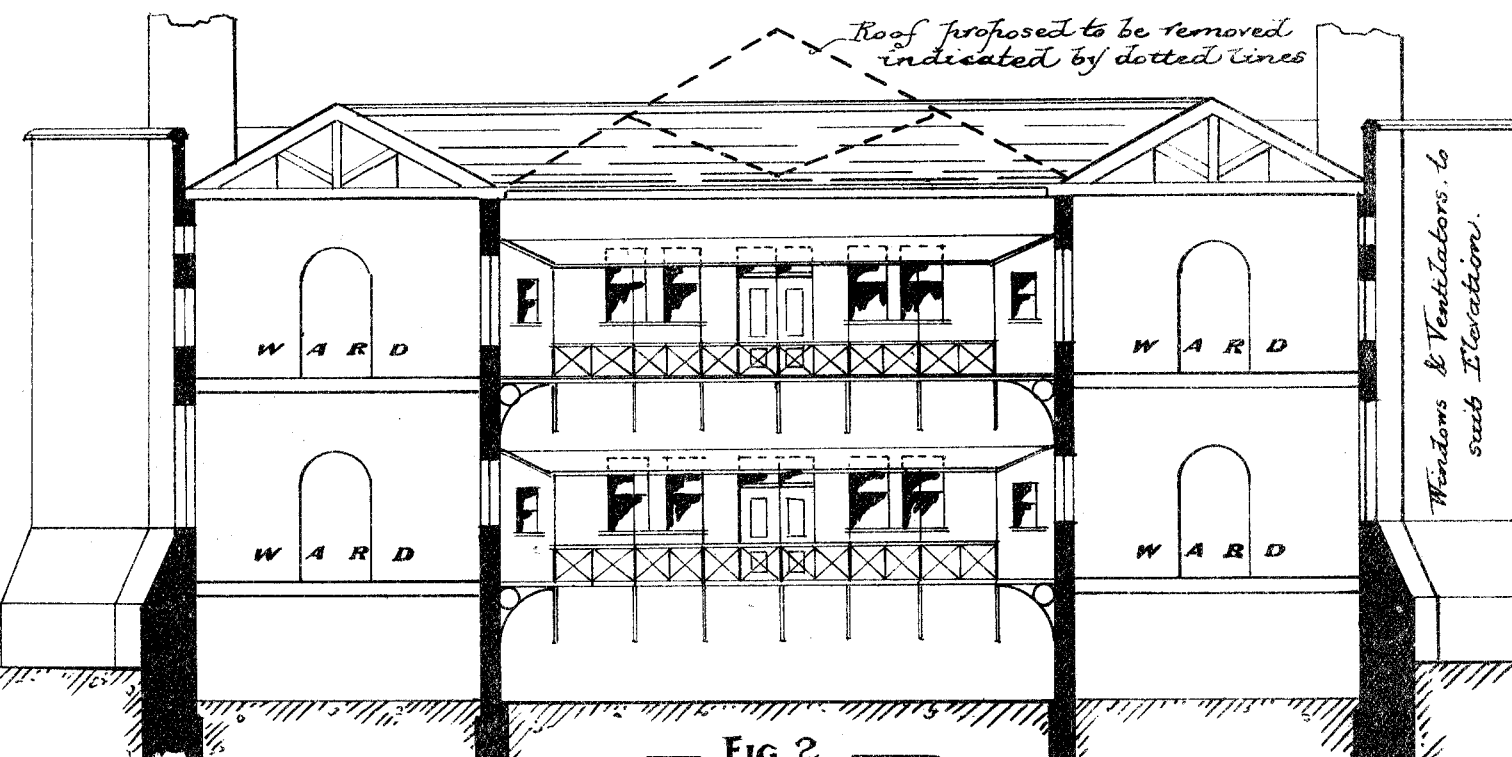


FIG. 2.

GENERAL CROSS SECTION SHOWING PROPOSED ALTERATION.
SCALE 16 FT = 1 INCH.