

(No. 71.)



1889.

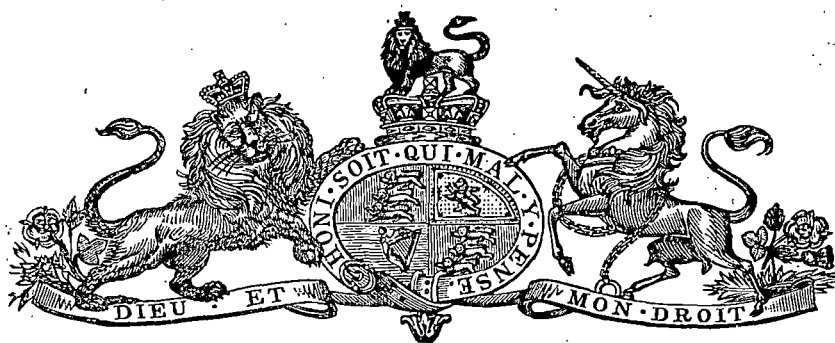
PARLIAMENT OF TASMANIA.

NEW NORFOLK HOSPITAL FOR INSANE :

REPORTS ON DRAINAGE.

Return to an Order of the House of Assembly. (Dr. Crowther.)

Laid on the Table by the Treasurer, July 30, and ordered by the House of Assembly to be printed, July 31, 1889.



DRAINAGE OF THE HOSPITAL FOR INSANE AT NEW NORFOLK.

[For Report of the Engineering Inspector of the Central Board of Health, see Journals of Parliament, 1888, Paper No. 150.]

Hospital for the Insane, New Norfolk, 15th February, 1889.

SIR,

I HAVE the honor to report, as requested, with reference to Mr. Mault's Report on the drainage of this Institution.

After most careful perusal, I beg to request that Mr. Mault's recommendations be carried out, both as regards drainage and paving the airing courts.

There is one portion of this Report upon which I would like to offer a suggestion—viz., Sect. 9. Providing no engineering difficulty exists, I would suggest that the land in connection with the outfall between the Hospital and the Lachlan be either purchased or leased, together with about four acres on the opposite bank.

The sewerage could be conveyed over the river in pipes, and one precipitating tank might be situated on one side of the river, and one on the opposite side. This arrangement would be highly advantageous to the Hospital, and would ensure a constant supply of vegetables for the patients and green food for the stock.

Two of Mr. Mault's recommendations might be carried out at once at a comparatively small cost—viz., the ventilation of the present drains, and the proper draining of the sinks.

With reference to the water-closets, I would suggest that only those of the most modern description be obtained, similar to those in the English Asylums.

I have the honor to be,
Sir,

Your obedient Servant,

W. H. MACFARLANE, *M.B.*, *Superintendent*
and Medical Officer.

The Chairman of the Official Visitors, Hobart.

RE DRAINAGE, &c., HOSPITAL FOR INSANE, NEW NORFOLK.

SIR,

I HAVE the honor to herewith submit my report and remarks on the above in connection with the report of Mr. Mault for the Central Board of Health. It will, however, be necessary for me to explain, for the information of the Hon. the Minister, the circumstances under which this system of drainage was carried out.

In several years after my appointment in 1879 and up to about 1883, I repeatedly called attention to the bad state of the drainage and buildings at this Institution, but for the want of funds nothing beyond the smallest repairs could be carried out. In 1883, however, a sum of money was placed on the Estimates for the commencement of the necessary works.

I again reported upon the matter; the then Commissioners also specially represented that something would have to be done, or else a serious outbreak of fever would probably occur through this drainage being allowed to remain in its then state. The result of these representations being that, after several consultations with the Engineer-in-Chief and the Commissioners, it was decided that the present large sewer which runs from the Asylum and empties itself into the Derwent should be utilised as far as it could be, and which could only be found out as we opened it out.

A supply of earthenware pipes, the best and strongest obtainable, I believe, in the Colonies, was procured from Launceston by the Government, a competent man being engaged for the laying of the pipes at 10s. per day, also a staff of labourers to do the necessary excavation, &c., the whole being under the daily and constant supervision of a clerk of works who had had 40 years' practical experience both in London and in Tasmania, the work occupying several months. I myself visited and instructed them as often as I possibly could. The Commissioners, owing to the importance of the work, also visited the Asylum very frequently during its progress. One of these gentlemen especially, a resident of New Norfolk (I refer to Mr. Sharland), took a deep interest in the matter, and I do not think allowed a day to pass without visiting the works, and one of the present Official Visitors (Mr. Mitchell) can also bear me out as to the trouble and care taken in order to make the work a success, as also Mr. Hunter, who was at that time a Commissioner, and who inspected the works frequently; so that I cannot possibly see what ground there can be for the assertion of Mr. Mault that the work has been "negligently performed," the size of pipe required for every drain being carefully considered, and, when laid, each pipe was carefully jointed with Portland cement and wiped on the inside, care being taken to lay each separate pipe with a straight edge and level.

The main sewer was carried through, as far as it was practicable to take it, with a due regard to fall, with 12-inch drain pipes. Several large cesspits, into which the various drains were found to empty themselves, being done away with, these cesspits being completely full and overflowing into the then drain with an accumulation of filth of many years; this filth, together with the whole of the bricks forming the cesspits and drain, and the surrounding earth were carefully taken out and carted away on the farm, the old bricks broken up to form roads. The excavations made were filled up with good dry material. The same remarks also apply to the whole of the old brick drains which were removed, including the main sewer. The latter was almost silted up to the crown of the arch, and something like 40 to 50 loads were removed in a night-cart borrowed from the Messrs. Shoobridge, so that it will be seen that what Mr. Mault proposes doing with the present drains was actually done five (5) years ago. I may specially mention that extra care was taken by the fact that a special pipe drain was laid from the water-closets at the Ladies' Cottage, so that it should be in no way connected with the baths or lavatory drains.

With respect to the drains laid, it will be necessary to explain why any of the brick drains were left. At the time and previously referred to it was the intention of the Government to erect a large block of buildings in the position now occupied by the carpenters' shop, stores, and a portion of the back yard buildings. This vote was passed by the House of Assembly, but was rejected by the Council. Having this fact in view, and after consulting with Commissioners on the ground, it was decided, so as to save expense, to merely open out the drains in this particular locality, clean them out and re-cover them, as they were only likely to remain for a short time, and only to put down the permanent drain pipes. This was carried out. It was also decided at the same time to lay pipes only to where there was a daily and constant drainage going on, such as from all bathrooms and lavatories. This was carried out in its entirety, there not being a bathroom unconnected with the pipes. The brick (12-inch) drain in front of the F.D., to which special attention is drawn by Mr. Mault as an instance of negligence, I may mention was left after careful consideration. This drain was found to be in good order, and being required principally to carry away the rain-water from the spouts, and being such a length, it was decided to leave it in order to save expense. The fact of this drain emptying into a 9-inch pipe is objected to by Mr. Mault. I consider a 9-inch diameter pipe is more than ample to carry away more than a 12-inch brick drain, as anyone who has had any practical experience in these matters knows full well that even a 6-inch pipe will carry away the sewage faster than a brick drain of double its size, so that there cannot be the slightest objection to it in its present state, the comparison being the same as the small freestone gutters in the Hobart streets to the cobble-stone gutters.

With respect to the junctions, I beg to state that both kinds of junctions were obtained, the V and the square. I always insist on using the V where two drains meet, and the square for down-spouts, or where drain or pipes connect on the top. I did not see the one specially mentioned before it was covered up at the Gentlemen's Cottage; but, as it happens, the main flow of water, namely, from the baths and lavatories, goes through it, and, having done so for the last five (5) years without stopping up (and which it cannot do), no harm has been done. All the drain pipes put in connect into the main pipe drains with proper junctions, and are properly trapped as required.

As to there being no plan of drainage, I understood that a copy of a plan showing drainage was furnished to Mr. Mault from this office, prepared from information which I supplied, a fact which is borne out by the whole of the drains being very correctly shown on the sketch plan accompanying Mr. Mault's report.

Asphalting.—The Official Visitors some time since asked that two of the yards should be asphalted, which was recommended by me; but owing to want of funds and the expense of asphaltting (there being no materials available in the vicinity), this work could not be done, and the yards have since been gravelled. Asphalt would certainly be a decided improvement.

I do not agree with the recommendations of Mr. Mault as to water-closets, irrigation, &c., for the following reasons:—Water-closets: To construct these throughout an establishment like this would necessitate a great expense in the first place for fitting up, and would also entail the constant services of a plumber, &c., which would at least cost fully £200 a year. From my experience of water-closets in the various hospitals and other large Government establishments, I certainly should never recommend them for the Hospital for Insane. Even at the General Hospital, where there are not one-fourth of the number of patients there are at New Norfolk, the water-closets are a constant source of trouble and annoyance, and continually out of repair. Even the two at the Ladies' Cottage are continually being stopped up by the patients throwing things into them, and stopping up the traps. Should water-closets ever be adopted, the present system will to a certain extent still have to be carried on, as it would not be advisable to allow the class of patients at this hospital to go to a water-closet after dark. There are now a large number of portable closets in constant use. These are carried into convenient places contiguous to the wards every evening, and removed with their contents, as are the whole of the pans throughout the entire establishment, very early every morning and carted to the farm, and then mixed with the manure, or buried in trenches, a system which I have inspected on many occasions, and which I have always found to be well carried out, and the places are all kept scrupulously clean. I should therefore strongly urge on the Official Visitors to pause before recommending a system of water-closets. The present system properly carried out, as it now is, is a success; the other would be very doubtful; besides, it would upset the working of the institution for at least twelve months, and cost a very large sum of money.

Re Drainage.—I cannot recommend the proposal of Mr. Mault. In the first place I do not consider it necessary to incur the large expenditure that would be required to carry out such an elaborate system of drainage; as the present drainage is, I consider, ample and sufficient, and in good order. Further, a good supply of water is now available since the new main and fire-plugs, stand-pipes, and hosing have been laid and supplied, and the drains can be regularly and completely flushed out, which, I understand, is now done. I may further add that I consider the New Norfolk Asylum is by far the best drained Government institution in the Colony.

In the main 12-inch sewer-pipe I took the precaution to have proper man-holes fixed at convenient places, so that the same can be inspected at any moment. I have often, on my visits of inspection, lifted the trap-doors and examined the drain, and have always found them perfectly clean.

To carry out such a system of drainage as proposed, in addition to the large expense of laying same, would involve the expense of purchasing the grounds adjoining the Superintendent's residence, for which I have no doubt a considerable sum would be required, as it is all good bottom land, laid out as an orchard. Besides this, there would be the same staff with the night-cart required to empty the pits weekly, and from the quantity of water likely to flow, would irrigate ten times the quantity of land available; and to turn it into the Lachlan I am sure would not be allowed by the inhabitants. As to the river carrying away any superfluous discharge when in flood, I am afraid, in the summer time especially, such as the last two seasons, there would be a very poor chance of its being carried away, as there has not been a flow there of any height for some years past, so that this would become a much greater nuisance than the present outlet into the Derwent.

With regard to Dr. Macfarlane's recommendations—

Item 1.—My remarks apply to these.

2.—This is not feasible, nor could it be carried out, as the solids could not be forced up hill into the water, which would flow into the drainage; consequently, the pipes would be continually stopped up; and to raise pipes (which would have to be iron) sufficiently high enough would entail the erection of a bridge a great height above the river.

3.—Is to a certain extent carried out, as several of the down-spouts to the high buildings are already connected.

4.—My remarks will apply to them.

I would, in conclusion, bring under the notice of the Hon. the Minister what I consider to be of far more importance to the institution than the drainage, viz., the quality of the water supply, which, in my opinion, is the cause of the frequent outburst of typhoid fever at New Norfolk.

The Department having recently erected a new school at the head of the Lachlan, some five miles beyond New Norfolk, I have had frequent and numerous opportunities during the past 15 months of observing the many impurities which flow into the river above the reservoir or dam which

supplies the township. The whole of the banks on each side of the river for nearly the whole distance being under cultivation as orchards and hop-grounds, a large quantity of manure, bone-dust, and other artificial manures are used on the land, which is constantly being irrigated, and the over-plus from this flows back into the river. Besides this there are dwellings, privies, cow-sheds, and stables, and all drainage finds its way into the river after every shower, and, at the present time, during hop-picking, clothes, &c. are being washed in the stream. There are no artificial filters or anything, as far as I know, to filter the water before it enters the pipes, and from information supplied me by the Clerk of Works, who has seen the present pipes recently (which are now undergoing a cleaning out), a very bad state of things exists, one of the valves on being opened out being, so to speak, alive with animal matter. I would, therefore, strongly recommend that instead of expending money on drainage, it would be far more advisable to assist or subsidise the Municipal Council to extend the iron pipes further up the Lachlan, where a purer and better supply could be obtained, which would as well give additional pressure, so that in the event of fire the stand-pipe and hosing could be utilised instead of the fire-engines.

I have the honor to be,

Sir,

Your obedient Servant,

JOHN S. SHIELD.

3. 4. 89.

The Hon. the Minister of Lands and Works.

*Central Board of Health
Public Health Acts.*

The Honorable the Chief Secretary.

SIR,

I BEG to return herewith the papers containing the remarks of Dr. Macfarlane, Superintendent and Medical Officer of the Hospital for the Insane at New Norfolk, and of Mr. Shield, of the Office of Works, on my Report, dated 30th November last, on the drainage of the older portion of the Hospital buildings.

Dr. Macfarlane's suggestions are quite feasible. I should have included a portion of them in my Report but for the consideration that they would involve a larger outlay than I thought it probable that Government would immediately incur. The portion of them that refers to irrigation on the opposite bank of the Lachlan could be carried out at any time in the future, though probably the land might be more readily acquired now than hereafter.

With respect to Mr. Shield's remarks, I know too well the difficulties anyone has to encounter who endeavours to patch up the faults of an old set of drains by partial reconstruction not to make every allowance for defects, and it is partly on account of these difficulties that I recommend total reconstruction. If anything was needed to strengthen my opinion in this regard, it is amply furnished by Mr. Shield's descriptions of the considerations that guided him in the partial reconstruction that he effected, and of the manner in which the work was done. Neither in the work itself, nor in any of his remarks, does it appear that any regard was paid to the vital point of the ventilation of the drains. On the contrary, not only the work done, but the remarks made, show that it was almost totally disregarded. As far as I remember only one sink in the establishment is properly drained, and such remarks as "there not being a bathroom unconnected with the pipes" show that there is not a bath properly drained.

Again, all that is said in connection with the running of a 12-inch brick drain into a 9-inch pipe is upon the relative carrying capacity of the two, and, astoundingly incorrect as the remarks made thereupon are, the fact is entirely overlooked that even if they were true the greatest objection to such an arrangement still remains, to wit, that the unoccupied portion of the larger drain inevitably becomes a receptacle for noxious vapours—a sewer-gasholder, in fact.

In regard to the particular example of improperly constructed junction I pointed out, it is no justification of such work that it has hitherto not resulted in mischief. It was pointed out as a seen example of work that was allowed, that made one suspect that other such examples might also have been passed—a suspicion that my recent examination of the drainage of the new buildings has unhappily warranted.

In regard to the plans of the drainage, I can only repeat what I have said as to the inaccuracy of those furnished to me. It is rather amusing to find that Mr. Shield advances the fact of the correctness of the plans attached to my Report as a proof that the Department's plans were accurate. If he will compare my plan with that furnished to me he will find wide divergence: in fact, the plan furnished me was absolutely worthless as a guide to fix the actual place of any part of any existing drain, and my plan so far as it is accurate was prepared from measurements taken after

opening the drains for examination. A plan, to be useful, ought to be so accurate as to enable one to set a man to open the ground with absolute certainty to find the particular part of the drain sought for, whereas with the plans furnished me I soon saw that it was preferable to trust to the memory of old servants than to the lines laid down on the paper. This, of course, ought not to be, and in my Report I have pointed out the only efficient mode of avoiding it.

In respect of what I said on the subject of irrigation, Mr. Shield evidently fails to comprehend it, and consequently writes wide of the mark. I said, in reference to the subsoil drains that should carry off the sewage water purified after passing through the soil, that such drains would be charged in flood time—of course, meaning that they would then cease to act, and the sewage would have to overflow directly into the river, but that this overflow would then be innocuous, as it would be mixed with the large volume of flood-water—the argument being that in normal times with the drains acting the system suggested would be perfect as delivering purified water into the river, and that in abnormal times of flood the imperfection would not matter, as the sewage water would be so infinitely diluted as to be innocuous. Mr. Shield gravely replies to this as an objection to the system that these abnormal times would be very few, evidently thinking that floods were being trusted to for the purpose of doing something in connexion with the work.

In all that Mr. Shield says as to the desirability of securing a supply of water from sources above any liability to pollution I heartily agree.

I have, &c.

A. MAULT.

Hobart, 9th April, 1889.

DRAINAGE OF NEW BUILDINGS AT HOSPITAL FOR INSANE, NEW NORFOLK.

[See Paper No. 19 of present Session.]

Hospital for the Insane, New Norfolk, 24th June, 1889.

SIR,

I HAVE the honor to inform you that I have read Mr. Mault's Report on the drainage of the new buildings at this Institution, and I trust that his recommendations will be carried out, in order to prevent an outbreak of typhoid fever or diphtheria.

I have, &c.

W. H. MACFARLANE, *M.B., Superintendent and Medical Officer.*

The Chairman of the Official Visitors, Hobart.

FORWARDED.

T. GRAY.
25. 6. 89.

READ.

F. W. MITCHELL.
26th June, 1889.

FORWARDED to A. Mault, Esq., Engineering Inspector Central Board of Health. The Official Visitors would be glad to see Mr. Mault's recommendations completely carried out.

C. E. BARNARD, *M.D., Chairman of the Official Visitors.*
22nd July, 1889.

FORWARDED to the Honorable the Chief Secretary.

A. MAULT.
24th July, 1889.