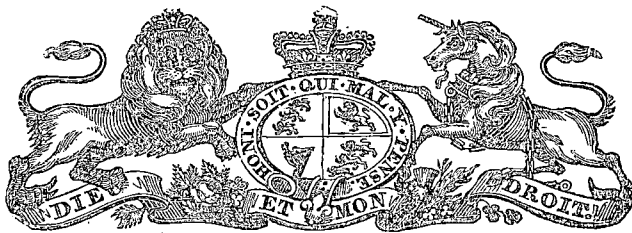


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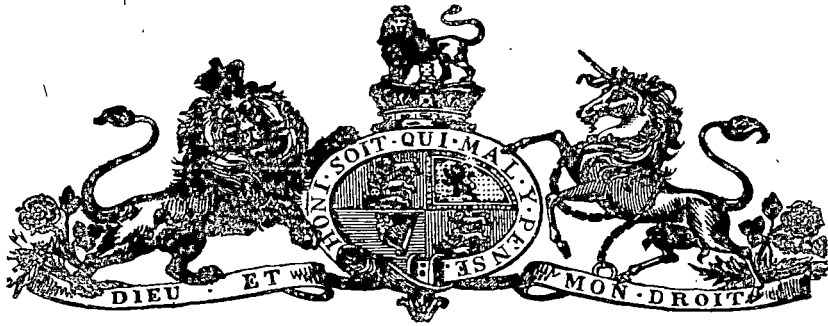
1889.

PARLIAMENT OF TASMANIA.

THE SANITARY CONDITION OF NEW NORFOLK :

REPORT BY MR. A. MAULT.

Presented to both Houses of Parliament by His Excellency's Command.



THE SANITARY CONDITION OF NEW NORFOLK.

To the Honourable the President and the Members of the Central Board of Health.

GENTLEMEN,

IN accordance with your instructions, Minute No. 78, 1889, given at the request of the Municipal Council of New Norfolk, I have the honour to present you with the following Report upon the result of the inspections I have made of that Town.

1. The Town of New Norfolk occupies a plateau at the junction of the River Lachlan with the Derwent, being bounded by the latter river on the north, and the former on the east. On the north bank of the Derwent immediately opposite the town, there are also a number of houses that were included in the inspection. In the town there are 163 occupied houses, and 24 unoccupied, total 187; and the population, exclusive of residents in the Hospital for the Insane, I estimate to be 820. On the north bank of the Derwent, and to the eastward of the bridge, there are 20 occupied and 13 unoccupied houses, total 33, with an estimated population of 100. The number of inmates in the Asylum is about 360. The total population is therefore about 1280, and the total number of houses 220. In the hop-picking and fruit season there are probably about 250 more people in the town. As the area occupied by the town and suburb on the north bank of the Derwent is about 250 acres, the fixed population is only about 5 to the acre.

2. The subsoil of the greater part of the site is a retentive clay. In some places this has been worked for brickmaking. With such a subsoil, underground drainage is more than ever necessary, not only for taking away the house sewage, but for drying the site of the dwelling-houses. There is in connection with most of the brick houses in the town an evident proof of the want of such drainage in the dampness of the walls and the lower floors. After heavy rains the soil, especially on the west side of the town sloping down from Peppermint Hill, is very wet, and retains its moisture for a long time. Means should, and could easily, be taken to divert the drainage of Peppermint Hill from the town.

3. The town is supplied with water from the River Lachlan by means of gravitation works belonging to the Municipality. The quantity of water is sometimes rather limited in the dry season, but the Municipality is at present taking steps to increase the supply. The quality of the water is very good. At the beginning of March, 1888, in consequence of the occurrence of typhoid fever at the Hospital for Insane, and in the town, samples of the water were submitted to Mr. Ward, the Government Analyst, and the following is his report upon them:—

	From River at intake.	From tap in Asylum.	From tap in Tank-street.
Free Ammonia, parts in a million	0·08	0·02	0·005
Albumenoid Ammonia, ditto	0·05	0·03	0·03
Nitrogen as Nitrates, ditto	none	none	0·08
Chlorine, grains in a gallon	1·60	1·60	1·60
Total Solids, ditto	9·00	9·60	10·00

The quantities of these foreign matters are, in both the samples taken from the taps, well within Dr. Parkes' limit in regard to usable water.

Most of the people living on the north side of the Derwent use the water of that river for all domestic purposes. The following analyses by Mr. Ward, of water taken from it at one of the usual watering places, shew how unfit it is to be so used:—

	Derwent, High water, March.	Derwent, High water, May.	Derwent, Low water, May.
Free Ammonia, parts in a million	0·29	0·01	0·006
Albumenoid Ammonia, ditto	0·11	0·15	0·08
Nitrogen as Nitrates, ditto	none	?	?
Chlorine, grains to the gallon	10·2	10·5	19·4
Total Solids, ditto	25·0	23·6	55·6

The water is said to be usually taken at high water. It is certainly fresher than as regards saltness, but contains more dangerous organic matter. Mr. Ward says that among the dissolved mineral matters are magnesian salts, etc., in sufficiently large quantities to cause diarrhoea and other complaints.

4. The waterworks were established and are managed under the provisions of an Act of Parliament passed in 1840, (4 Vict. No. 4), and three amending Acts passed in 1860 (24 Vict. No. 27), 1863 (27 Vict. No. 36), and 1865 (29 Vict. No. 28). Under the first-mentioned Act, the water and soil of the watercourse of the Lachlan and its tributary streams and springs were, subject to these existing rights, declared vested in Her Majesty and her successors for the use of the Public for ever. This provision appears to have been forgotten, for on subsequent sales of land on the river and its tributaries no reservation whatever was made. Consequently, much control over the river bed has been lost. I have called the attention of the Lands Department to this matter, and understand that, for the future, the land immediately adjoining the watercourse will be reserved.

5. I examined the course of the river from below the Myrtle Falls to the present intake of the waterworks. Along this part of the Lachlan there are 48 houses from which drainage might affect the water. In various places there were manure heaps and farmyards that were in a condition certain to pollute the water to some extent in very wet weather; and the privy at Mr. Moore's house should be immediately removed from the bank of the river. There are about 60 acres of orchard from which drainage would flow or soak into the river. Nine acres of them can be irrigated. The area of the hop grounds is about 42 acres, of which 32 are irrigated. There is also some agricultural land. From the whole of these cultivated lands the drainage, especially after heavy manuring and on irrigated lands, is calculated to affect the quality of the water supply.

6. But the most dangerous source of pollution that was seen was the graveyard attached to the church at the village of Lachlan. The ground is a gravel bed immediately on the banks of the river, and is so permeable that when a grave is dug the water is found in it at the same level as the water in the river, shewing the direct communication between the one and the other. The land is the property of Mr. Molesworth Jeffery, and is still being used—two burials at least having taken place in it since my visit. The river is gradually washing away part of the ground, and probably another flood like that of June last might sweep away some of the graves. As it is probable that legislation on the subject of cemeteries will take place this session, by which powers will be granted to close graveyards that have been established in improper places, this churchyard should be dealt with.

7. Speaking generally of the water supply and its source, if the specific causes of pollution mentioned above be removed, I do not think that the cultivation of the ground to the extent carried on at present is likely to cause much deterioration, as the analysis shews that it does not. I would, however, suggest that some mechanical means be used to prevent the entry, as is now occasionally the case, of worms and all other such matters into the pipes; and also that the troughing should be as far as possible replaced by earthenware pipes, and the water for the whole distance from the river to the beginning of the pipes of the distributory service be kept from exposure to sunlight, and from chance of pollution by cattle. But, as settlement in the valley of the Lachlan increases, the liability to pollution will also increase, and periodical inspections should be made to check this. It is also very desirable that sufficient reserves should be maintained on the mountain slopes to insure the water supply, by providing a large enough forest-covered gathering ground for the Lachlan and its tributaries. I understand that for this purpose some thousands of acres are still available between the head waters of the Lachlan and those of Baker's Rivulet, which falls into the Mountain River.

8. In the following paragraphs of this Report reference is not made to the Hospital Buildings, as they have been already fully reported upon by me.—(See Parliamentary Papers, No. 150, 1888, and No. 19, 1889).

9. The houses in the town are either built of brick or of timber with weather-boarding. I visited all the 220 before mentioned, and send in separately from this report a detailed statement respecting each of them. Such a statement ought to be furnished to the Local Board every year. Apart from the information it would give of the sanitary condition of the houses, and of what was necessary to improve it, the inspection it implies and necessitates does good by calling the householders' attention to matters that otherwise are allowed to pass without notice. On my inspection, I was accompanied by Mr. Stevenson, the Superintendent of Police, and it was in many places evident that there was some preparation in the way of cleansing made for our anticipated visit.

10. From the above-mentioned detailed statement it will be observed that of the 220 houses the condition of 94 is described as unsatisfactory by being "not very good," or decidedly "bad." In most cases this signifies what may be considered landlord's neglect in the way of repairs, white-washing, plastering, and papering, and structural defects; but in many cases also tenant's neglect and want of cleanliness. Seven of them are described as "dilapidated," 19 as "damp," and therefore unhealthy; and 13 of them are unfit for human habitation—most of these last are only occupied in hop-picking time, and one has been closed by the local authority. In 25 of the houses the ground floor is level with or below the level of the surrounding soil. This is always an unwholesome condition, and is especially so in a town built on a retentive soil—a circumstance which in New Norfolk also aggravates the evils caused by want of drains, and by want of pavement in back yards. In 91 of the houses there is not any pretence of drainage, and in very few of the rest any drainage other than surface gutters, most of which are in bad condition; and to 57 houses there are no spouts. I have frequently called attention to the absolute necessity from a sanitary point of view, of having the surface of the yards attached to houses paved or prepared in such a manner as admits of their being properly cleansed and kept clean. No less than 162 of the houses have no pavement in the back yards, and in 16 others the pavement is imperfect or very bad. In nearly all these cases the yard is the receptacle for at least part of the slops and of the household refuse, and its surface is such that it cannot be swilled, or even properly swept; and in 21 cases the condition was such as to require immediate attention in the way of removing accumulations of refuse and manure. In 13 cases there were no back yards at all, the slops and refuse from the houses being thrown on the street; these cases are also chiefly in connection with houses occupied by hop-pickers. In connection with 57 houses animals are kept, and in 13 cases the stables, pigsties, etc. for keeping them were in a condition affecting the healthiness of the neighbourhood. With regard to privy accommodation, 12 houses have water-closets; 5 have earth-closets, with proper supply of earth, etc.; 41 have privies with metal pails, and 57 with wooden boxes, both without proper supply of earth or other disinfectants; 85 have cesspits, mostly unlined, and without any provision to prevent soakage into the earth, and 4 houses have no privy accommodation whatever. Two of the water-closets have no cisterns, the service-pipe with a tap opening directly into the basin. This is a most objectionable arrangement and should be immediately altered. If the main-pipe were being emptied for any purpose while the closet was being used, not only bad air, but faecal matter might be drawn into the main. In connection with earth-closets, wooden boxes are very improper receptacles, as they cannot properly be cleansed; and the use of earth or other disinfectant should be made obligatory. And in many cases where pails or boxes have been provided the old cesspits have not been properly emptied and cleansed and filled up with clean material. The consequence is, that the pail or box is virtually standing in the old uncleansed cess-pit, and instead of an improvement having been effected, the reverse is the case. Some regulation should also be made as to the emptying and cleansing of these receptacles, and also of the cesspits. The necessity of this is shewn by the remarks made in relation to 35 of the privies.

11. The foregoing summary of the detailed statement of the condition of the houses visited will, I hope, ensure the careful consideration of the statement itself, and the taking of the necessary steps to secure the remedy of the evils pointed out. It would have greatly facilitated the taking of such measures had there been a proper code of By-laws, and I beg respectfully, but urgently, to recommend to the Municipal Council the framing and passing of such By-laws.

12. The want of underground drainage is shown by the condition of some of the street gutters, especially in Bathurst-street, Charles-street, George-street, Burnett-street, and Humphrey-street. The police endeavour to prevent the throwing of foul water into these gutters, and though they may partially succeed in preventing the throwing out of such visibly polluted water as soapsuds, there is much other that cannot be detected so readily, and a great deal of this certainly passes into the gutters. As most of these gutters are unpaved, a large part of the water is absorbed into the soil, and each annual cleaning, though it removes part of this soil, and consequently is continually making the gutters larger and deeper, is ineffective in securing the removal of the nuisance. For a time the nuisance is even aggravated by the stirring up of the filthy soil, and the exposure of a new surface of it to sun and air, and by the leaving of heaps of it for a considerable time to dry by the footpath side before removal. With this exception of the gutters, and with that of part of Blair-street, the condition of the surface of most of the streets in the town is very fair.

13. The condition of the Municipal Reserve in Blair-street is such as to need attention. It has apparently been partly worked out as a brickfield, and is now made a depositing place for much of the refuse from the town, and the clay-holes are being slowly filled up with rubbish containing both animal and vegetable matter. It will also be seen from the detailed statement that some privy cess-pits and house drains run directly into these clay-holes. The water in them must therefore be very offensive, especially in hot weather, and their neighbourhood to houses in Humphrey and George streets, and to the Hospital, makes it urgently necessary that they should be cleansed and filled up.

14. There are also two now disused burial-grounds in the town. They should both, especially that belonging to St. Matthew's Church, be thickly planted with trees and shrubs. The public cemetery

on the north side of the Derwent should also be thus planted. The fact that the drain from this cemetery empties itself into the river near where some of the water used by the people for domestic purposes is taken, makes the river a still more undesirable source of supply.

15. There are four slaughter-houses in the neighbourhood of the town; a Municipal By-law or Regulation prevents their establishment in the town itself. Mr. Sherrin's slaughter-house at Woodstock, about half a mile out of the town, is a weatherboard building with ventilators all round, and flagged floor very fairly constructed but for its want of drainage. The only local water supply is from the roof. Even this did not seem to be used, for there was no apparent attempt at cleanliness. The floor was filthy. On one side of the building, when I visited it, offal and manure were lying with a dead premature calf upon them; and on the other the blood from the slaughtering was slowly spreading, and soaking into the ground. The stench was abominable. Inside the building joints of meat were hung up round the boarding, and outside pigs were roaming about feeding on the garbage.

Mr. Mapley's slaughter-house is about two hundred yards from Blair-street, and is built of rough slabs, with a rough slab floor, which it would be impracticable to keep clean, and which in fact was very dirty, being covered with offal. There was no attempt at drainage. Waterworks water is laid on at the lower end of the land, near Blair-street.

Mr. Clark's slaughter-house is near Mr. Mapley's, and is a similar building, but had no prepared floor. It also was very dirty, and pigs are kept to do part of the scavenging. There is no drainage, and the position and conformation of the ground is such that in wet weather the surface drainage, with all its filth, must find its way into the disused clay-holes on both sides of Blair-street.

Mr. J. G. Brown's slaughter-house is on the other side of the river, and adjoins the railway. It is a weatherboard building with paved floor. The boarded walls were not clean on the inside. Immediately adjoining there are pigsties—which were fairly clean and dry—and a boiling-down copper. The water supply is obtained by a windmill from the river. The drainage is very badly carried out, and at the outlet from the building smelt very offensively.

The condition of all these slaughter-houses gives further proof of the urgent need of having By-laws to regulate them, and frequent inspections to see that the By-laws are obeyed.

16. As the water supply is being further provided for, the most urgent sanitary need of the town is a system of drainage; on the accompanying plan there is marked such a system as would meet present requirements. It is partly based upon taking advantage of the Burnett-street sewer for draining the principal part of the town, diverting that sewer and taking the sewage it contains and that from the rest of the town and delivering it at the north-east corner of the township into the Derwent after having purified it by irrigation over the hop-grounds at the bottom of Alfred-street and elsewhere along the course of the sewers as arrangements could be made. Eventually, when the town has grown the sewers could be continued, without very great additional cost, to the hop-grounds at the mouth of the Lachlan. The cost of carrying out the works shown would be about £2200, but as they would dispose of the sewage of the Hospital and other public establishments—the population of which is two-fifths of the whole population—that proportion of the cost should be provided by Government; this would leave £1320 to be provided by the town. If, as I have elsewhere suggested, Government would advance this sum at 5 per cent., including interest at 3½ per cent., and a sinking fund to pay off the principal, a rate producing £66 a year would be sufficient. The present yearly value of the land and houses benefited by the sewers is £3809, and so a rate of about 4*d.* in the pound would be needed, diminishing as the rateable value of the town increased.

17. As regards the private work necessary to carry the house drainage to the sewers, it would not be expensive: it should in all cases include the provision of a trapped and ventilated yard grid or cesspit and grating, with the necessary pavement to form a sort of sink; and the whole of the work should be done in the manner and on the principles laid down in my Report on the drainage of the Hospital for the Insane (Parliamentary Paper, No. 150, 1888), the 10th paragraph of which I beg to be considered as part of this Report. If during this Session an Act be passed authorising the levying of Private Improvement Rates, and if it be desirable to do any of this private drainage work under the Act, the amount of the Private Improvement Rate would not exceed 2*d.* in the pound.

In conclusion, I have to thank the Worshipful the Warden, the Council Clerk, and the Superintendent of Police of the Municipality, for the courtesy and assistance I received while making my inspection.

I have the honour to remain,

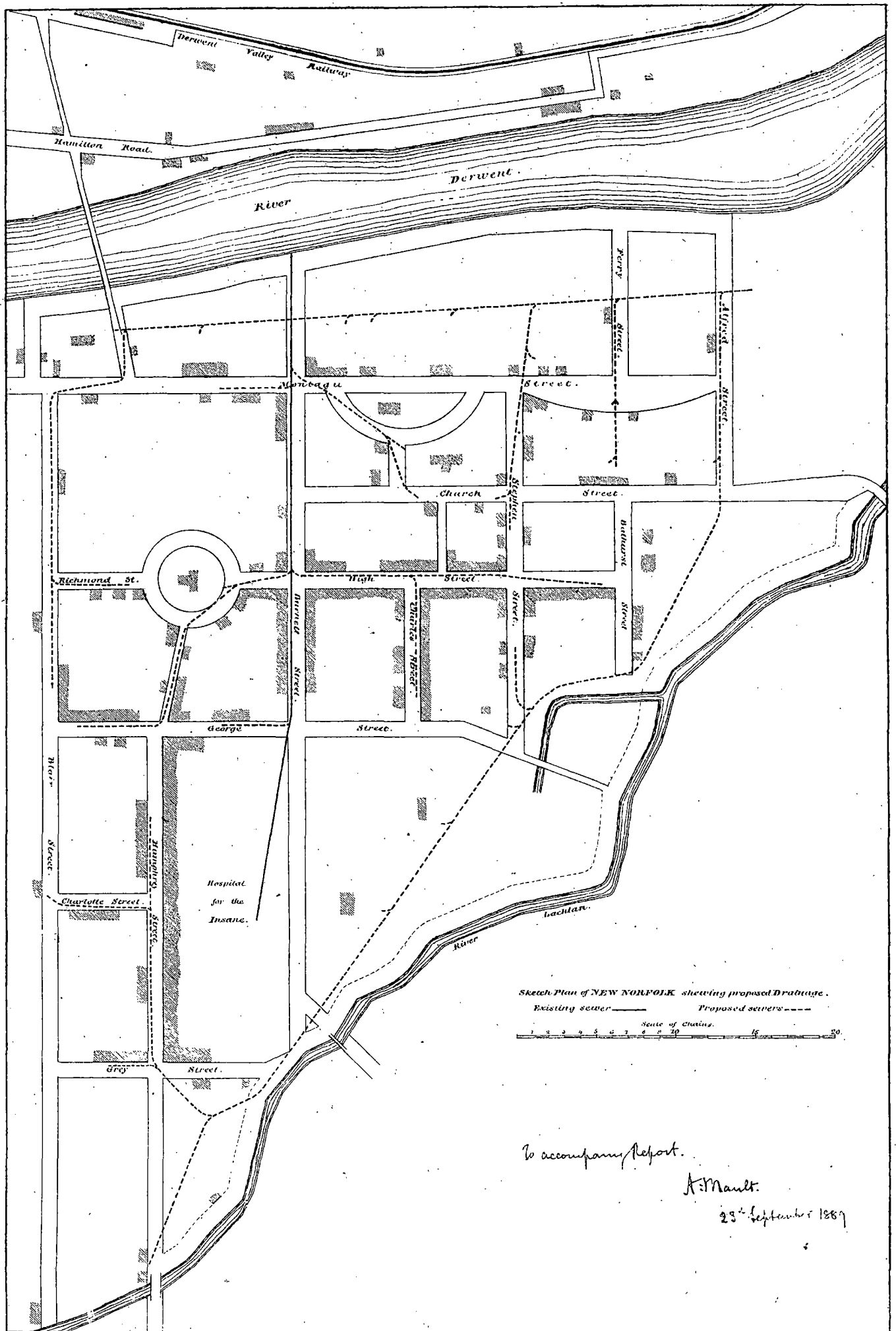
Gentlemen,

Your faithful Servant,

Hobart, 8th October, 1889.

A. MAULT, *Engineering Inspector.*

[NOTE.—The detailed statement referred to in this Report has not been printed. It contains the owners' and occupiers' names, the yearly value and the condition of the 220 houses inspected, and details respecting the condition of the yards, the nature and condition of the drains, privies, stables, cowhouses, pigsties, &c. connected with the houses, and general remarks thereupon. A copy of it in manuscript has been forwarded to the Local Board with this Report.]



To accompany Report.

A. Mant.

23rd September 1889