

(No. 114)



1887.

PARLIAMENT OF TASMANIA.

SANITARY CONDITION OF AVOCA:

REPORT TO THE CENTRAL BOARD OF HEALTH, BY
ALFRED MAULT.

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

Central Board of Health, Hobart, November, 1887.

SIR,

I HAVE the honour, by direction of the Hon. the Chief Secretary, to transmit for your perusal the accompanying Report of Mr. Mault, dated 1st October, 1887, on the sanitary condition of Avoca; and have to request that it may receive the serious consideration and early attention of the Local Board of Health, more especially with regard to the matters contained in paragraph 12.

The Chief Secretary also desires that the Local Board of Health will give public intimation to the residents in their district of the unfitness of the St. Paul's River water for drinking purposes.

The attention of the Minister of Education has been drawn to the latter part of paragraph 11, with a view to the condition of the State School privy being improved.

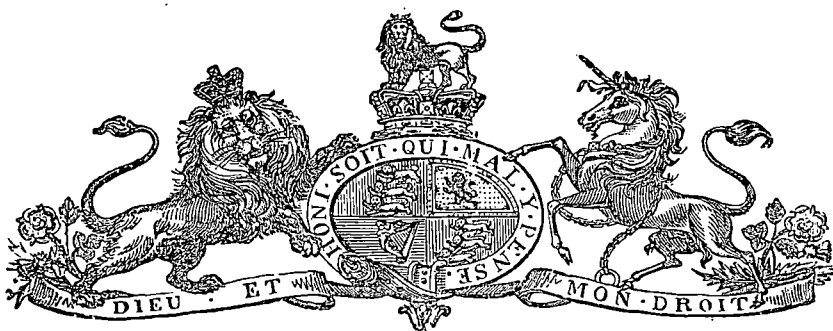
I have the honour to be,

Sir,

Your most obedient Servant,

GEO. RICHARDSON,
Acting Secretary Central Board of Health.

S. H. GRUEBER, *Esq.*, *Chairman Local Board of Health, Fingal.*



REPORT ON THE SANITARY CONDITION OF AVOCA.

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

MR. PRESIDENT AND GENTLEMEN.

I HAVE the honour to submit to you the following Report upon my visit to Avoca.

1. On the afternoon of Saturday, the 10th September, a telegram was received by the Hon. the Chief Secretary from the Warden of Fingal, stating that there were 25 young persons suffering from typhoid fever at Avoca, the majority of whom had been received by the Rev. G. F. M. Fielding, the Incumbent of the Parish, into his Parsonage House. The Chief Secretary asked me to inform the President, and take such steps as he might suggest in the case. By the President's directions I proceeded to Avoca by the express train on Monday, the 12th September, taking with me Miss Shoobridge, a trained nurse, to assist at the extemporized hospital.

2. Dr. Hoskins, the Officer of Health of the Local Board of Fingal, in which Municipality Avoca is situated, had been requested to meet me. He took me with him to several houses in which there were cases of the prevalent sickness, and then to the Parsonage, where there were 19 patients under the care of Mr. Fielding and Miss Storey, a young lady who had had training as a nurse in the General Hospital at Launceston. Mr. Fielding, in the absence of a doctor, had taken notes of the cases he had visited in the village, as well as of those received into the Parsonage; and from these notes, and his personal examination of the patients, Dr. Hoskins has expressed his opinion that the sickness was not typhoid fever, but "a severe form of influenza, attended with less or more bronchitis, diarrhoea, and low fever, the symptoms varying but little in all the cases." Your President, also, from an inspection of the notes, expressed the opinion that the cases were "not cases of enteric fever, but of epidemic influenza."

3. The following is a history of the outbreak:—James Macarthy, now a storekeeper at Avoca, lived at Rockford, about three miles up the St. Paul's River, where his wife died on the 21st August. Dr. Naylor, of Campbell Town, who saw her a few days before her death, writes that she died "of acute gastric catarrh," and that she had "nothing of infectious." Macarthy then removed with his family to Avoca, to a house at the corner of Blenheim and Falmouth-streets, where, on the 27th August, one of his children sickened, two more on the following day, and a fourth on the 3rd September.

On the 31st August, Thomas Joyce, a boy, till then attending school, was taken ill at his parents' house in Falmouth-street.

On the 1st September, at their house in St. Paul's Place, two daughters of John Macarthy, a brother of the above-named James Macarthy, were taken ill, and on the morrow, a son.

On the 5th September, a child of the Stanleys, who are next door neighbours of John Macarthy, was taken ill.

Also, on the 5th September, a daughter of Adams, Postmaster, in Falmouth-street, was taken ill; and on the 9th a son. The little girl had been playing with Thomas Joyce before his illness, and the family was supplied with milk from James Macarthy's.

On the 8th of September Mr. Fielding brought into the Parsonage, Hill, who was living in Champ-street, on the south side of St. Paul's River, and three of his children, all ill. On the 11th two others of the children were brought in; and on the 12th, Mrs. Hill, who had been nursing the others, was also, with her baby, taken ill.

On the 8th of September, Mr. Fielding also brought into the Parsonage six children, from Freeman's cottage, at Benham, on the river bank, just opposite Rockford; and on the 11th another daughter was brought in.

On the 11th of September Mrs. Densley, the mother of a large family, living in Churchill-street, was brought into the Parsonage: Dr. Hoskins thought this to be the worst case.

Mr. Fielding's housekeeper, Mrs. F. McCarthy, and her three children, and Lizzie Palmer, the servant, were all also laid up.

4. There thus appear to have been 32 patients altogether, of whom 21 were nursed at the Parsonage. Of the 32 there were 25 who were resident in Avoca, which has a population of 212, of whom 86 are adults and 126 children. There have been no fatal cases.

5. Avoca is situated on both banks of the St. Paul's River, at its confluence with the South Esk, and at a mean elevation of about 670 feet above the sea. Basaltic rock is exposed along the banks of both rivers, but the greater part of the township is built upon what appears to be Tertiary drift, with alternating beds of sand, gravel, and clay. As sand and gravel are almost everywhere visible on the surface, it might be supposed that good natural drainage existed by reason of the permeability of the soil; but the clay beds are so impermeable and so close to the surface that the whole of the rainfall appears to be retained, and every ditch and excavation, however shallow, is filled at this time of the year with water oozing from the ground; therefore, what seems at first sight to be a beautiful and healthy position for a township, is by no means the latter. And matters are made worse by most of the older houses having been built with their floors level with the surface of the ground, and in cases even below it on some sides where the ground is sloping. As hardly any of the roofs are spouted, and none of the yards properly paved, the whole site of nearly every house is damp, and the consequences of the dampness aggravated by the impossibility of ventilating the ground floors. A true idea of the unseen but actual condition of the subsoil of nearly every house may be formed by what can be seen in the only two cellars I heard of in Avoca; the old *Woolpack Inn* cellar had about nine inches in depth of putrid green water standing in it; and the cellar of *Foster's Hotel* would soon be in the same condition from the water continually oozing into it if it were not bailed out every day. Another consequence of this condition of things is that the ground air from under the houses being drawn into the drier atmosphere of the rooms, especially at night and in damp weather, fills them with unwholesome emanations from the water and drainage-laden soil.

6. The greater part of the households of Avoca are supplied with water from the South Esk, and, fortunately, only a few from the St. Paul's River.

I am indebted to Mr. Fielding for the following analyses of the water of the two rivers. For purposes of comparison I have appended to them some analyses of other Tasmanian drinking waters, for which I have to thank Mr. Ward, the Government Analyst:—

DATE WHEN WATER TAKEN.	SOURCE OF SUPPLY.	GRAINS PER GALLON.			PARTS PER MILLION.	
		Total Solids.	Chlorine.	Nitrogen as Nitrates and Nitrites.	Ammonia.	Albumenoid Ammonia.
1887.						
September 20	St. Paul's River at Avoca	6.30	1.50	0.080	0.013	0.400
" 28	Ditto	5.39	1.20	—	Traces	0.250
" 20	South Esk River at Avoca	5.00	0.80	0.029	Traces	0.060
April 13	Hill-street Reservoir, Hobart	4.00	0.50	?	0.005	0.030
"	Cascades Reservoir	5.80	1.10	?	0.047	0.145
1885.	Ditto	?	?	?	0.010	0.110
?	Launceston, overflow from Reservoir	8.22	0.40	0.050	0.010	0.160
?	Ditto	8.57	0.40	0.060	0.020	0.140
?	Lake River, Cressy	7.00	1.68	?	0.210	0.130
?	South Esk River, Evandale	6.50	1.08	?	0.010	0.130
?	River Nile, Evandale	5.50	0.46	?	0.070	0.090
?	Waratah River	2.40	0.85	0.025	?	?

It will be seen that the water of the South Esk at Avoca is of fairly good quality, and that that of St. Paul's River is very bad. In fact, it is so bad that the people should be warned against using it. Dr. Hassall's proposed permissible dosage of albumenoid ammonia is one part in ten million, whereas the first of the analyses shows four times that quantity. I should mention that Mr. Fielding says that on the 20th of September "the water was a fair sample, no floods having occurred for some weeks, and very little rain having fallen." I, however, asked him to be good enough to again analyse the water of St. Paul's River to determine whether its condition on the 20th of September arose from any special temporary cause. He accordingly sent me the analysis of the 28th above given, and observed that as the volume of water coming down the river on that day was, on account of rain, at least double that coming down on the 20th, "you would not expect the albumenoid ammonia to be nearly so high. It is still far in excess of what it should be in any drinking water." This second analysis makes it very probable that in summer time, when the water is very low, its

quality may be even worse than that shown by the analysis of the 20th September. I may mention that John Macarthy's, Stanley's, and Freeman's families get their water supply from St. Paul's River; and so did James Macarthy's when living at Rockford.

7. Some of the houses are in a particularly unwholesome condition. Rockford, where James Macarthy lived, is a comparatively large country house that has been allowed to fall into dilapidation, or rather, ruin. The construction never was good, the ground floor being about on a level with the soil, and the roof having no spouts. There is an enclosed yard at the back which evidently received all the slops, though there is a surface gutter from the outbuildings leading to a small cesspool full of green liquid, and situated about a dozen yards from the house. The house into which James Macarthy moved, and in which he now dwells, at Avoca, has low rooms, with floors even with, or below, the level of the adjoining ground. And though the roofs have spouts, the whole place is so damp that the walls and ceilings are in many places black and plasterless. From its situation on the hill slope it is liable to receive any drainage that may flow or percolate from the manure yard of the hotel higher up Falmouth-street. The privy cesspit had not been emptied for at least eighteen months. The house slops were thrown upon the ground.

8. Freeman's house at Benham was far too small for so numerous a family; and, as his landlord was about to build a new cottage for him with more accommodation, the old one was allowed to get into a very ruinous, and, properly speaking, uninhabitable condition.

9. Hill's house was in a worse situation. It was closed on my visit, as all the family had been taken into the Parsonage. It is 24 feet long by 10 feet wide, divided into two rooms, with small fixed windows, and floor level with the ground outside. There is no privy accommodation, and the slops are thrown on the surface. As this has probably been going on for thirty or forty years, and as the site of the cottage is on a level piece of land, the polluted condition of the soil must be injurious. The family consisted of father, mother, and six children. It is no wonder that they were all ill, and that they suffered from diphtheria two years ago.

10. The accompanying sketch map of Avoca shows the position of every house in which cases of influenza have occurred this year, and also of those in which diphtheria occurred two years ago.

11. On the occasion of this outbreak of diphtheria in 1885, Dr. Barnard was sent to report upon the cases, and he duly sent in a Report dated the 27th June of that year. It does not seem that any action was taken upon this Report, for the condition of things at Avoca as described and condemned by Dr. Barnard, with but one exception, is still the same just as if no such Report had ever been made. He particularly condemned the state of the stable-yard, cesspits, and surface drain of the principal hotel. The state of things is unchanged, and in wet weather the drainage must flow from these premises towards the lower lying site of James Macarthy's house. The slaughter-house described by Dr. Barnard as standing just opposite the public school is not used at present. This is the only improvement since his visit. The school itself is just as he described it, and its privy has still the large foul-smelling box, and beneath it the leakage still forms "a slimy offensive slough, giving off noxious effluvia which the children could not well escape." Dr. Barnard concluded by making eleven specific recommendations for the sanitary improvement of the place, not one of which appears to have been attended to.

12. It is necessary that notice should be taken of the warnings, that have been repeatedly given by the outbreak of disease, that Avoca is in an unsatisfactory condition in regard to sanitation. Therefore I strongly urge that the Local Board of Health of Fingal should be at once called upon to carry out the following measures, which are in accord with Dr. Barnard's recommendations:—

That all manure heaps and other accumulations of filth should be periodically and frequently disinfected and removed:

That all cesspits should be emptied, disinfected, and filled up, and pail closets substituted, with proper regulations for the supply of dry earth or disinfectants, and for periodical emptying and cleansing:

That the surfaces of all yards should be made as dry and impermeable as possible, and all roofs spouted:

That where the floors are not raised above the level of the ground, a paved open channel should be made round the house so as to render the site as dry as possible, and permit ventilation under all boarded floors:

And that the provisions of the 136th Section of the Public Health Act be enforced.

13. Among the special works that require to be immediately done are the following:—The proprietor of the old *Woolpack Inn* should be served with a notice, under Section 119, to drain off the stagnant water in the cellar. The position of the property upon sloping ground is such that a short drain will be sufficient to effect the drying of the place. The proprietor of *Foster's Hotel* should also be required to build a water-tight manure tank to receive the stable manure and drainage of the premises, and make all arrangements to protect his neighbours from their present liability to annoyance therefrom.

14. It is very desirable, also, that means should be taken for properly draining Avoca. The nature of the site, as described in Section 5, shows how necessary this is. At present the slops are thrown upon the ground in most of the yards. In some few cases there are surface gutters that convey these slops a little further from the houses. But the certain result is that the whole neighbourhood of the dwellings is in the condition that is inevitable from the soil having for many years received all the liquid refuse of the population. The configuration of the ground would facilitate drainage, and small sewers would be sufficient. Their outlet should be arranged so that the sewage might be purified by filtration through land before being allowed to flow into any river. It would not be difficult to find proper land for doing this.

15. I cannot conclude this Report without expressing my sense of the admirable conduct of the Rev. G. F. M. Fielding towards his neighbours. He no doubt thought their condition graver than it was; but that only caused him to treat them with all the greater care until his anxiety was relieved by the diagnosis of the Officer of Health and other medical men. He unflaggingly—but not unwearyingly, for he did not spare himself night or day—not only carried out all medical directions, but gave up himself and his house in order that the sick might have a care and a comfort it was not possible for them to have in their homes. And he was nobly seconded by Miss Storey.

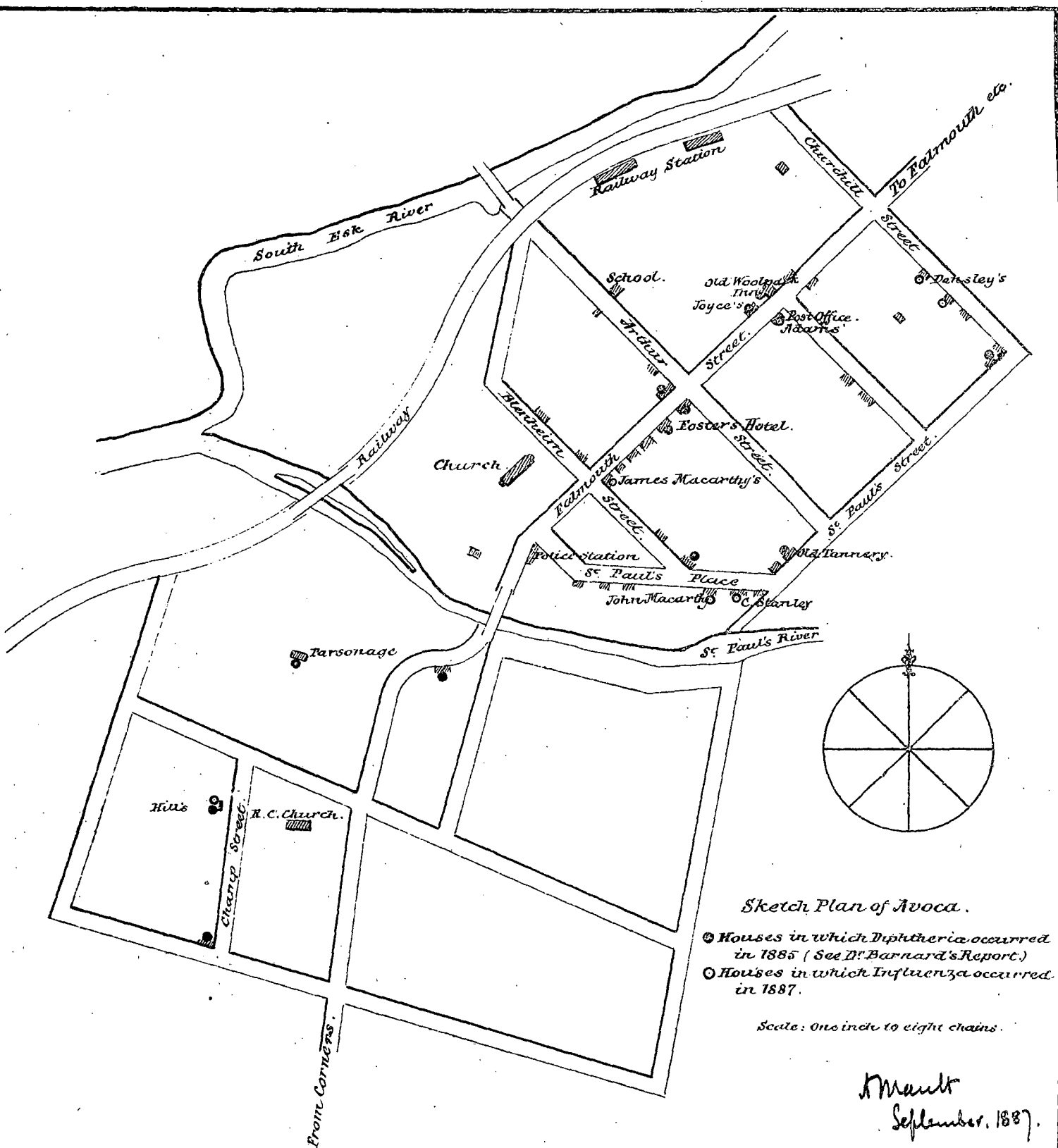
16. I am very sorry that other pressing duties have prevented me from sending in this Report earlier. The delay enables me to say that all the patients are well again. But I hope that the delay will not have the effect of weakening the force of the earnest recommendation I make to the Local Board of Fingal to do everything in its power to improve the health of the place, that has received such warnings as the cholera and diphtheria of 1885, and the influenza of 1887.

I have the honour to remain,

Your faithful Servant,

A. MAULT.

Hobart, 1st October, 1887.



Sketch Plan of Avoca.

- Houses in which Diphtheria occurred in 1885 (See Dr. Barnard's Report.)
- Houses in which Influenza occurred in 1887.

Mault
September, 1887.