

Report to the General Board of Health on a preliminary inquiry into the sewerage, drainage, and supply of water, and the sanitary condition of the inhabitants of the municipal borough of Brecon / by George Thomas Clark, Superintending Inspector.

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Clark, George Thomas, 1809-1898.
Great Britain. General Board of Health.

Publication/Creation

London : Printed by W. Clowes & Sons ... for Her Majesty's Stationery Office, 1849.

Persistent URL

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20
PUBLIC HEALTH ACT,

(11 & 12 Vict., Cap. 63.)

R E P O R T

TO THE

GENERAL BOARD OF HEALTH,

ON A

PRELIMINARY INQUIRY

**INTO THE SEWERAGE, DRAINAGE, AND SUPPLY OF
WATER, AND THE SANITARY CONDITION
OF THE INHABITANTS**

OF THE MUNICIPAL BOROUGH OF

BRECON.

By GEORGE THOMAS CLARK,

SUPERINTENDING INSPECTOR.



LONDON :

PRINTED BY W. CLOWES & SONS, STAMFORD STREET,

FOR HER MAJESTY'S STATIONERY OFFICE.

1849.

PUBLIC HEALTH ACT,
(11 & 12 Vict., Cap. 55.)

REPORT

TO THE

GENERAL BOARD OF HEALTH.

NOTIFICATION.

PRELIMINARY INQUIRY

THE General Board of Health hereby give notice, in terms of section 9th of the Public Health Act, that on or before the 11th February, 1850, written statements may be forwarded to the Board with respect to any matter contained in or omitted from the accompanying Report on the Sewerage, Drainage, and Supply of Water, and the Sanitary Condition of the Inhabitants of the Municipal Borough of BRECON, or with respect to any amendment to be proposed therein.

By order of the Board,

HENRY AUSTIN, *Secretary.*

Gwydyr House Whitehall,
24th December, 1849.



PUBLIC HEALTH ACT (11 and 12 Vic., Cap. 63.)

Report to the General Board of Health, on a Preliminary Inquiry into the Sewerage, Drainage, and Supply of Water, and the Sanitary Condition of the Inhabitants of the Municipal Borough of BRECON. By GEORGE THOMAS CLARK, Superintending Inspector, 1849.

London, 16th August, 1849.

MY LORDS AND GENTLEMEN,

IN obedience to your instructions I visited the Municipal Borough of Brecon on the 11th of June last, and held sittings in the Old Borough Hall there, as directed by the Public Health Act, on that and the two following mornings. The remainder of those days and a part of the 14th were employed in the inspection of the Borough, and in the collection of materials for this Report.

2. The inquiry took place upon a petition numerously signed, and bearing amongst other names those of the Mayor, the Member for the Borough, the Vicar of St. David's, the Chairman of the Quarter Sessions for the county, three other of the Borough clergy, and three Magistrates. I have to acknowledge the support and attendance of Thomas Williams, Esq., Mayor; J. P. de Winton, Esq., a County and Borough magistrate, and Chairman of the Board of Guardians; Mr. R. T. Watkins, Town Clerk; Dr. P. Lucas; Mr. John Davies, Superintendent Registrar and Clerk to the Local Commissioners; Mr. Armstrong, Surgeon to the Union; Mr. Bevan; Mr. W. Watkins, County Surveyor; and several other residents in the borough.

3. My Report describes in the first place the existing state of things; secondly, the remedies recommended; and, in the third place, it states the cost of those remedies, as definitely as the materials afforded me will admit of, or as appears called for in a Report upon a preliminary inquiry.

4. GENERAL DESCRIPTION.—Brecon, or Brecknock, derives its Welsh name of Aber-Honddhu from its position upon the confluence of the Honddhu with the Usk. The Usk, during the whole of the upper part of its course, flows eastwards at the base and on the north of the great escarpment of the old red sandstone, which, opposite to the town, at the highest of the three peaks, known as the Brecon Beacons, reaches an altitude of 2,862 feet above the sea. The escarpment, in parts nearly precipitous, attains its crest about five miles south of Brecon. Northwards, the rise of the ground, though rapid on the banks of the Honddhu above the town, is on the whole far more

gradual. The Honddhu lies in a deep ravine, with steep and rocky but wooded banks, which, above the town, reach an elevation of 200 to 300 feet.

5. The town is built on both banks of the Honddhu, and extends up and down the adjacent and northern or left bank of the Usk. Llanfaes, or St. David's, a part of the borough and a suburb of the town, stands on the right bank, but for the most part at some little distance from the river, upon flat ground, intersected by the Tarrel, a southern tributary to the Usk. The Priory church and the Castle stand on the right bank of the Honddhu, above the town; and St. Mary's parish, containing the bulk of the population, is placed on the left bank of the same stream upon a broad flat, but little removed above the winter level of the Usk. Three stone bridges keep up the communication across the Honddhu, and one traverses the Usk.

6. Great part of the town is built upon gravel. The Usk, when in very high flood, extends over a part of St. David's, but, with the exception of one or two houses near the bridge, does not affect the town on the left bank. This, however, at its eastern end, suffers from the land waters from the northern hills.

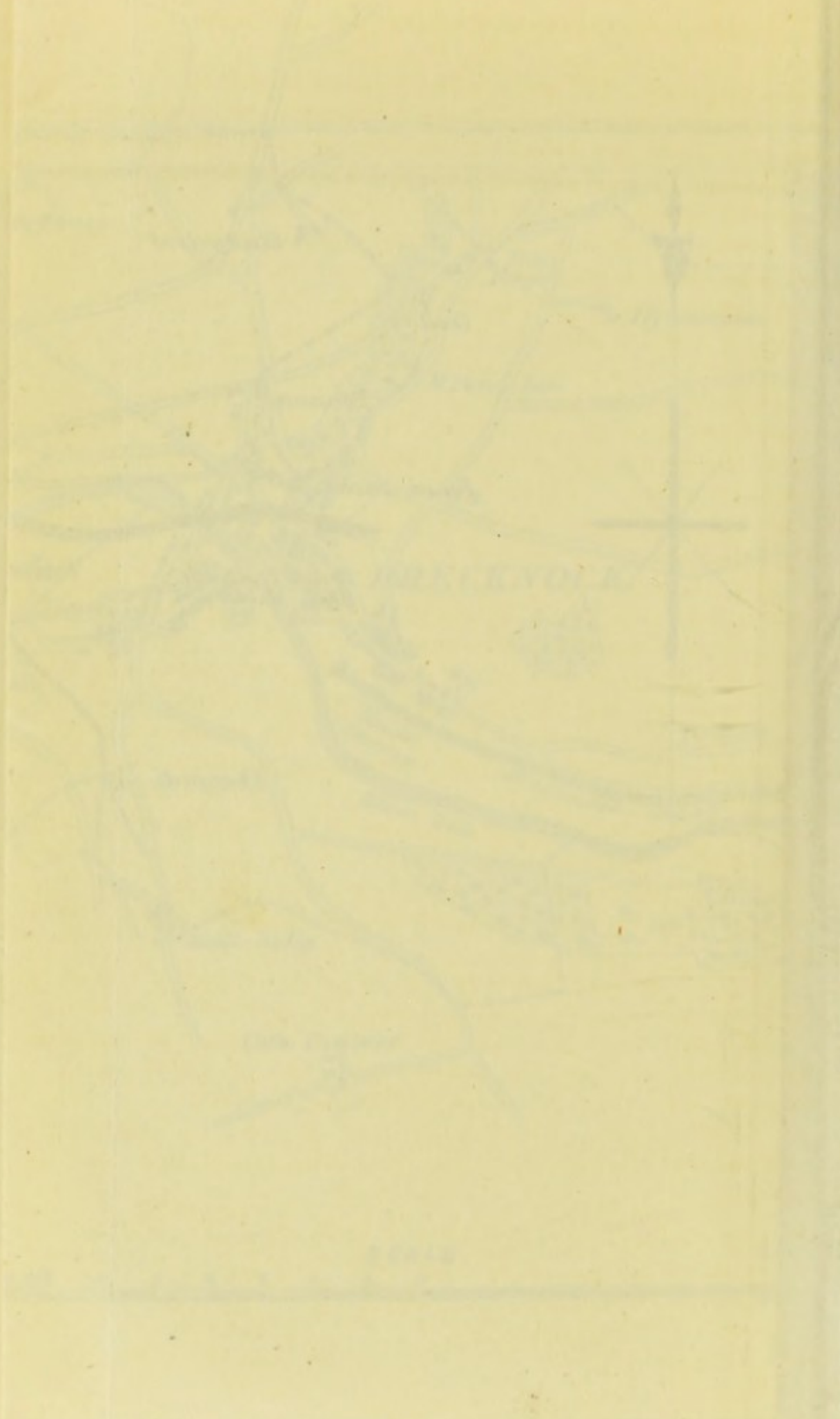
7. The position of Brecon is good as regards air, water supply, and drainage. Round the town are numerous public walks, and the general scenery is celebrated for its richness and beauty. Few towns, even in Wales, can boast of greater natural advantages for the health and recreation of the inhabitants.

8. Brecon is chiefly supported by the agricultural district around it. It contains no considerable manufactories.

9. GOVERNMENT.—Brecon is a Parliamentary and Municipal borough. The boundaries of the two are coextensive, excepting that the distant contributory borough of Trecastle, and the extra-parochial lands of the Castle and College, are exempt from the municipal authority. The borough includes St. John's parish, except the hamlet of Fenni-fach; a part of Llanfaes, or St. David's parish; and the whole of the chapelry of St. Mary. The extra-parochial districts of the Castle and the College are surrounded by the borough. The Corporation is composed of four aldermen and 12 town councillors, the Mayor being elected annually out of and by the 16. The police of the borough is in the hands of the Corporation, and at present consists of a superintendent and two men.

10. Under the 16 Geo. III., cap. 56, the duties of paving, lighting, cleansing, supplying with water, and otherwise improving the town, and a power of levying an annual rate not exceeding 1s. in the pound on the annual rental or value, are vested in a body of Commissioners. The qualification for office

Reports of Superintending Inspectors of the General Board of Health



is the ownership of a tenement of 10*l.* per annum, or the rental of one of 15*l.* per annum. The Commissioners are self-elected, and are at present 117 in number, besides members *ex officio*. Their jurisdiction does not extend either into the extra-parochial part or into the parish of St. David's. They are much too numerous for executive business, and moreover not responsible to the ratepayers whose money they expend.

11. The two parishes and the chapelry appoint the usual parish officers, and each elects a surveyor of roads, usually an unprofessional man. These officers are quite independent of each other, and are liable to be changed annually.

12. FINANCE.—Three separate bodies regulate the financial arrangements for the government of this small borough. The Corporation have of late years levied a rate of from 9*d.* to 1*s.* in the pound, per annum, in the borough, for police and borough expenses. A rate of 1*s.* produces 771*l.* A part of the sum thus raised is employed in the payment of a debt now nearly liquidated.

13. The Commissioners levy an annual rate of 1*s.* in the pound. A 1*s.* rate upon their area produces at present about 600*l.* The assessment is an old one.

14. The parish officers levy a poor-rate, amounting, for the whole municipal borough and the extra-parochial lands, to about 2,810*l.* per annum. The valuation for poor-rate is not made according to the parochial assessment, and is much below the proper valuation.

15. They also levy a highway rate, in St. John's, of 80*l.*; in St. David's, of 9*l.*; and in St. Mary's, of 32*l.* 14*s.*, being altogether 121*l.* per annum, exclusive of the sum paid by the Commissioners on this head, which amounts to about 100*l.* more.

16. Under the recent assessment for the purposes of a county rate, the total annual rental of the borough and the extra-parochial district is 18,700*l.*, from which a reduction is expected to be allowed, so that the rated rental will probably stand—for houses, 11,781*l.*; land, 4,113*l.*; total, 15,894*l.*

17. POPULATION.—The borough of Brecon in 1831 contained 5,026 inhabitants. In 1841 the population was as follows:—

St. Mary's	1,945
St. John's	1,832
St. David's	1,300
The Castle	33
The College	104
	<hr/>
	5,214

At this time there is a population in the barracks of 494; and the excess of births over deaths in the borough, down

to the present time, is 185, so that the present population, by this method of computation, may be taken at 5,893, which is supposed to be not far from the actual number.

18. **MORTALITY.**—It appears from the returns of Mr. Davies, Superintendent Registrar, that the deaths in the borough, exclusive of persons dying in the Union House and not belonging to the borough, and taken over the last eight years, have averaged annually 149, being, upon the mean population of the period, about 26·8 in the 1,000, of which about 9·3 in the 1,000 are at or under five years of age. During the same period, the annual mortality for the whole registration district, of which the mean population may be taken at 1,747, is 21·6 in the 1,000, and of deaths at or under five years 6·5 in the 1,000.

19. In the tables calculated for the Health of Towns' Association, upon the data of 1841, the annual mortality for the Brecon, Builth, Crickhowell, and Hay district, including 55,408 persons, is given at 22·2 in the 1,000; that of Tregaron, the most healthy district in South Wales, being 14·9, and that of Merthyr, the least healthy, 27 in the 1,000.

20. **INSPECTION OF THE TOWN.**—In this part of the inquiry I derived considerable assistance from a report by Dr. Lucas, from which the following is an extract:—

“In a former brief Report of mine to Sir Henry de la Beche, on the health of this town, I stated that the general condition of Brecon might, upon the whole, be pronounced healthy; that it was rarely visited by epidemics, and that when they did occur they had been much confined to those parts of the town in which cleanliness and efficient drainage had been least attended to.

“It is in these parts of the town that sanitary measures are still greatly required.

“From its natural position, rising gradually from the rivers Honddu and Usk, Brecon presents, in almost all its aspects, the most favourable conditions for easy and efficient drainage. As parts of the town to which this remark especially applies, and which are most infested by disease, I may mention the filthy lanes and courts at the upper end of the Struet, which are situated on the side of a steep bank at the base of which flows the river Honddu; also parts of Pendré, Bailey-glâs and Mill-street, all with a more or less rapid fall to the river Usk, and having, moreover, a small stream, the Maddrell, rising from ground above and running through them, and which might be conducted through a system of sewerage with ease and the greatest advantage.

“The low flat district of Llanfaes might appear to present the greatest difficulty for efficient sewerage; but even there a plentiful supply of pure water might, with comparatively little expense, be obtained from the river Tarrall, and kept constantly running through the channels or sewers into which it might be diverted.

“In this last mentioned locality there is usually most disease, and there occur the greatest proportion of deaths. Its rate of mortality amounting to 3·3 per cent., the average of the whole town being 2·32.

Even the latter is a high average from a town apparently so favourably situated for health as this is; and without any manufactories or intense crowding of population. According to Sir H. de la Beche, it is equal to that of Newcastle, Leeds, Sheffield, Birmingham, and other seats of considerable manufactures.

"The prevailing diseases of the districts to which I have referred are fever, commonly of a low typhoid type, and sub-acute and chronic, gastric and intestinal disorders. The latter not being usually immediate causes of death, but rather predisposing to the fatal termination of other diseases, do not tend much to swell the list as "causes of death."

"I have made the following classified abstract from the returns to the town registrar of the causes of death from all diseases during the five years ending June 30, 1848. I adopt the arrangement of the Registrar-General. I may mention that the aggregate population of the parishes of which the town of Brecon is composed, amounted in 1841 to 5,214.

"*Number of Deaths in the parishes of Christ's College, St. David, St. John, and St. Mary, during the five years ending June 30, 1848.*

From all causes	850
1. Zymotic: or epidemic, endemic, and contagious diseases	161
2. Dropsy, cause of uncertain seat	29
3. Brain, spinal marrow, nerves and senses	147
4. Lungs, and other organs of respiration	216
5. Heart and blood-vessels	21
6. Stomach, liver, and other organs of digestion	54
7. Diseases of kidneys, &c.	5
8. Child-birth—diseases of the uterus, &c.	11
9. Rheumatism, diseases of the bones, joints, &c.	8
10. Skin, cellular tissue, &c.	5
11. Old age	137
12. Violence, privation, cold, and intemperance	26
13. Unspecified causes	30

"I may also add the following selection of the numbers of deaths from the most important special causes."

Small-pox	4	Apoplexy	9
Measles	8	Paralysis	6
Scarlatina	45	Convulsions	107
Hooping cough	24	Bronchitis	24
Dysentery	4	Pneumonia	29
Diarrhoea	21	Phthisis	145
Cholera	2	Disease of liver	15
Typhus	17	Dropsy	26
Hydrocephalus	12	Child-birth	10

21. The presentment-book of the Court Leet, held annually, contains some valuable testimony as to the opinion of 12 local residents, tradesmen in the town, concerning certain local nuisances. From the last presentment I cite the following:—

"We further present that the nuisances arising from the seven pigsties, the property of Mrs. Maund at Kensington and Mill-street, lying

on the side of the public foot-path leading towards Newton Pool, be immediately removed. Also that the public road leading from Kensington, Mill-street, and Newton Pool, is in a most filthy state and in very bad repair. We further present the filthy state of Silver-street, Beech-street, and Walnut-row in Llanfaes, as presented last year. We further present the bad state of the pitching and grating leading from Wheat-street to Three Cocks-lane. We further present the street leading from the Bear Inn in Ship-street to the Market-house, to be in a most filthy and unwholesome state, and that a lamp should be erected at the corner of the street. *We further present the general want of conveniences with small cottages in the borough and its suburbs."*

22. In the inspection of the town I was accompanied by the mayor, the town-clerk, the clerk to the Commissioners, the officer of police, the surgeon to the Union, and Mr. G. Bevan; and in Llanfaes by Mr. Evan Williams and Mr. Howel Powell.

23. The following observations upon the parishes of St. Mary's and St. David's have been drawn up by Mr. North, the medical officer of the district, and certainly deserve a place here :—

" In bringing to your notice the nuisances which present themselves as a cause of disease in the first, or Brecknock district of this Union, I shall endeavour to be as brief as possible.

" It is quite out of my power to point out particular houses which are not so clean as they ought to be, and where a neglect of cleanliness and ventilation contribute so much to the discomfort and danger of the families occupying them; nor can I be expected to be able to report all those cases, in which an accumulation of filth on the premises of private individuals, proves a source of annoyance and cause of disease to their neighbours as well as themselves. As a rule, there can be no doubt, that wherever the authorities neglect to carry out any system of cleansing or draining, there you will find the greatest number of nuisances arising from private sources.

" It is too much the custom to attach all the blame of want of cleanliness to the poor, who from necessity are compelled to live in the worst parts of the town, and must submit to all the evils that necessarily result from a residence where filth is allowed to accumulate in the public thoroughfares, where there are no drains, and where scavengers are never employed.

" There are very many of the cottages that have no privies, many no outlet at the back, and filth of every kind is too often thrown before the doors to the disadvantage of the public, and there allowed to accumulate.

" I am quite sure we are much indebted to the heavy showers and large quantities of rain that fall in this neighbourhood, as a means of removing much of the dirt from our streets, and though usually considered a cause of disease in itself, rain makes ample compensation by doing what, in the present state of things, in some parts of this town is almost totally neglected.

" I am aware that much has been done recently in causing many nuisances to be removed, and many of the thoroughfares which had

been neglected for years to be cleansed, but I would suggest, that it is not only necessary to clean them but to keep them clean, unless a regular system of sewerage, or employment of scavengers, or what would be more desirable, both be adopted, it is of very little use removing the filth which has accumulated for years, and then allow it to accumulate again.

"It is a mistake to suppose that by removing nuisances, and endeavouring to oblige people to adopt habits of cleanliness, that you do away with every cause of disease; a want of sufficient food, proper clothing and ventilation, being crowded together in numbers too large to admit of breathing a pure air, are equally likely to cause disease; when, therefore, we consider that these circumstances are all a consequence of poverty, and that it is out of our power to relieve them altogether, how much more careful ought we to be to afford to the poor the relief which is in our power, and which the wealthier classes enjoy at the public expense, viz., sewers and frequent cleansing of the surface.

"I may pass over the country part of the Brecknock district with but very few observations. The villages only require any notice. I am not aware that there are sewers in any of them, and perhaps they are not required, as most of the villages are situated on eminences, from which there is sufficient fall to carry off much of the filth with the assistance of the rain. The houses are generally detached, and I think where nuisances exist, the fault lies with individuals, each house having a separate nuisance of its own, in a straggling heap of dung, ashes, &c.

"With regard to the town—Three of the town parishes are in the first district, St. Mary, St. David and Christ's College. That part which is paved, is provided with sewers and is regularly swept; the gratings of the sewers however have no traps, and occasionally in warm weather, there is a very offensive smell from many of them.

"The parts which deserve particular attention are—1st. *Mount-street, Heolrhydd* and the *Watton*; 2nd. *The Bell-yard*; and 3rd. *Llanfaes, the College, and Heolhwyt.*

"1st. In *Mount-street, Heolrhydd*, and the *Watton*, no scavenger is ever employed; the roads are kept in repair, I suppose, at the expense of the county; large heaps of mud and dirt are scraped together, and allowed to remain for a considerable time; much evil results from the want of privies, as I have often heard complaints from some of the inhabitants, of the stench arising from the filth thrown out before the houses. In the *Watton* there is what is called a sewer, which extends as far as the barracks; it is really a reservoir for filth.

"2nd. *The Bell-yard*.—That part of the yard adjoining the Bell premises is always kept in proper order, the remaining part has been until lately in a most disgraceful state; here you find everything that can contribute to render the place filthy; privies, stables, and slaughter-houses; there are no drains; and, I believe, until lately, it has not been thoroughly cleaned for many years. It is one of the thoroughfares to the Market-house; there was an open privy a short time ago, within two yards of the entrance to the Market-house, and I know that there have been several cases of fever in the early part of this winter in the adjacent houses. It has been cleaned out; but unless some system is adopted for keeping it clean, in a few months it will be as bad as ever.

"3rd. *Llanfaes, the College, and Heolhwyt*.—In the parishes of St. David and the College, there are two drains; one extending from Mr.

Bishop's house to the river, another from the corner of Silver-street across the road, running into what is called the College ditch; it is perfectly useless, it has no fall, and the grating at its commencement is generally stopped up by solid dirt; it is in fact a reservoir of filth. In the main thoroughfare through Llanfaes, heaps of dirt scraped from the road, are allowed to remain obstructing the gutters. In the immediate neighbourhood of the almshouses, there is generally a quantity of green stagnant water, which is only removed by heavy showers of rain.

"*Heolhwyt* and *Silver-street* are certainly the dirtiest parts of the town; there are no sewers, and though this part has lately been cleaned out, there is already a considerable accumulation of filth, as there must necessarily be unless it is swept out at least once a week. I believe most positively, that, until lately, this part has not been thoroughly cleaned out for the last nine years.

"In January, 1839, and again in the same month 1840, Llanfaes was under water for many hours, with a strong current through Silver-street; this, of course, completely swept away nuisances that had been accumulating for years.

"In January, 1840, an epidemic of typhoid fever broke out, and was very prevalent throughout this neighbourhood; but, I well recollect that Llanfaes and *Heolhwyt* were far more healthy than other parts of the town, such as Bailey Glâs, the upper part of the street, &c., and I could attribute it to nothing but the timely occurrence of the very high flood.

"I am quite sure, in an economical point of view, it would answer the purpose of the parish of St. David's, to make sewers through Llanfaes and *Heolhwyt*, and to employ scavengers. It is quite practicable to make efficient sewers, and to flush them from the river Tarrall.

"A reference to the expenditure of the parish of St. David during the last two years, for fever cases alone, would convince any one that something ought to be done. From the dirty state of *Heolhwyt*, property is much deteriorated in value, and people of cleanly habits naturally dislike living in such a neighbourhood. Many of the cottages are consequently occupied by strangers, trampers, or people who live in tents in the summer, and are glad to get into any house in the winter; they frequently become burthensome to the parish, generally from attacks of fever.

"In conclusion, I would humbly suggest that a regular system of sweeping should be extended to the poorer parts of the town, that sewers should be formed where there are none, and thus by obliging the proper authorities to do their duty in keeping the public thoroughfares clean, you would be setting a good example to the poorer classes, and could with greater justice compel them to remove those nuisances, which are so injurious to themselves as well as the public."

24. The suburb of St. David's lies rather low, and at present suffers from the detention of the rain-fall in the streets. There are about 380 houses on that side of the Usk, of which about 339, or nearly 11-12ths, are under 10*l.* annual rental, and very many as low as 7*d.* to 1*s.* a-week. There are three main streets in Llanfaes, through which the turnpike-road passes to Caermarthen, divided into Bridge, Orchard, and Newgate-streets. and opening out of it Silver-street and *Heolhwyt*, west.

25. Close to the Usk Bridge at *Dinas-road*, a culvert runs from the road under a house, and becomes an open ditch, at a point at which it receives a privy. It is a considerable nuisance to both residents and passers by. Opposite to it is a large tanyard and bone depôt, adjoining which are a cluster of cottages with crowded back premises, ill paved, no drainage, nor privies, with pigsties in the yards, and altogether in a very damp and filthy condition.

In *Saunders's-court*, the rents are from 7*d.* to 1*s.* a-week. There is neither drain, privy, nor proper pavement. The landlady would willingly pay 2*d.* a-week on each of her six houses for a privy; but could not pay 3*l.* down. She had of course no notion, that under the Public Health Act, an outlay of 6*l.* for two privies for the court, might be obtained for a weekly payment of 1½*d.*, or of ¼*d.* upon each house. Howell Watkins living here, complained of an oozing through the wall of his dwelling-room, from a privy built against it on the other side. The stench was very offensive.

26. *Silver-street* is ill-paved, very filthy, and has an open gutter filled with stagnant house-refuse, across which stone slabs are laid to the houses. Here is a slaughter-yard. The houses are ill-built and of a low description, and some of them in very bad order and without privies. The rain stands in the street. At the west end of this street and *Heolhwyt*, are filthy roads, corners piled up with rubbish, public dung-heaps, open ditches and gutters, pigsties, and pigs rambling about the streets, and in many of the houses. The whole quarter is in a very bad state. In *Charles-lane* is a crowded though tolerably clean lodging-house.

27. About the *College* the cottages are very dirty, ill-built, and undrained, with street gutters in front, and foul open ditches behind.

28. The Union-house is well built, in an excellent position for air and drainage, and is cleanly kept, but some of its sewerage arrangements are very faulty. The infirmary is appropriated to the reception of vagrants, who are crowded in great numbers into very small rooms. At my visit a bad case of typhus was in one of these rooms, with a bank of earth in front of the window. In each of the six courts is a very large untrapped cesspool, smelling most offensively, and the whole discharging into the high road. There is no excuse for this latter nuisance because the drainage might easily be diluted, by means of a small brook adjacent, and be distributed as manure over the fields, which fall rapidly from the house.

29. The churchyard is crowded on the north side. There is a school in the churchyard, with a dwelling-house.

30. The present filthy and unhealthy state of *St. David's* is

caused by the want of properly made roads and paved backyards, of privies, of house and street drains, and of a water supply for domestic uses.

31. The *Watton* contains a number of handsome buildings, and the private houses are for the most part well built, and the street is broad and airy. The barracks are in great part new. The soil is collected in covered cesspools, emptied from time to time. There is stabling for 58 horses, and about 42 are usually quartered here. All the urine flows by drains direct into the canal. The supply, in case of fire, is a rain-water tank under ground, containing 26,000 gallons. A very large sum of money has been laid out here in the sinking of pumps and tanks, and other arrangements for a water supply.

32. Many of the houses in this street are liable to be flooded. The *Blue-boar* cellar, said to be the deepest in the street, is about 8 feet below the surface, and might be drained into the river. This cellar, though always damp, is rarely flooded above once or twice in winter. The tenant attributes the flooding to land-waters from above. Almost all these houses have privies, either singly or one to two houses, with covered cesspools, the overflow of which passes into the canal, a most objectionable arrangement. The defects of this street arise from the want of a main drain of proper depth. One of its outfalls is by the Harp-green ditch, an offensive channel opening upon the Usk.

33. Near Prosser's canal wharf is a large open space by the road side, an authorized receptacle for filth and rubbish of all sorts. Mrs. Prosser complains of a bad stench from an oozing of fluid soil through the wall of her premises. At the corner of *Chapel-street*, next the forge, are pigsties, dung-heaps, and a filthy corner, all upon the public road. The gutter is also in a dirty state, and retains stagnant house-refuse. In *Glamorgan-street*, amidst several very good houses, is an open muck-pit. The bed of the river, behind these houses, and in fact all through the town, is very dirty.

34. The quarter between High-street and the Usk Bridge is in a very bad state. Here the houses are closely crowded together, old, ill-built, and imperfectly drained, very badly off for privies, and both streets and yards ill-paved.

35. The *Lion-yard* contains several well-built though small houses. But they are undrained, have very narrow back premises, and stand in a dirty yard, which contains two slaughter-houses.

36. The *Struet*, a great part of which is steep, and upon the bank of the Honddhu, is nevertheless very filthy. Here are several low lodging-houses, and other cottages, built into the steep hill side, so as to have small or no back premises, and to suffer from damp. Their rent is 1s. a-week. The public

street is in a very offensive condition. The road is ill made, and does not appear ever to be swept. The gutters, in the lower part, are stagnant and offensive. Upon the edge of the Honddhu, close to the Brecon brewery, is a cluster of seven privies discharging into the river, 30 yards above the place from which the people take water. A dirty manure yard, with pigsties, drains upon the same point.

38. The following statement has been recently made to the Board of Guardians concerning the *parish of St. John*, by Mr. James Williams, surgeon to that quarter:—

“ Being requested by you to certify in writing ‘ all such places (within my district) as are dangerous to health,’ &c. &c., I would beg to call your particular attention to the *parish of St. John*. The nuisances in it are public nuisances, not ones to be remedied by the cottagers themselves, but by the proper parish officers and the magistracy of the borough.

“ I refer most particularly to the public entrances into the parish. The entrances through the Struet, Pendre, Black-boy, and from Watergate to Mill-green are lined on each side by nuisances; open gutters and mounds of scrapings from off the road allowed to collect week after week, generating gases highly injurious to the public health. The open gutter opposite the mill-pond in the Struet is frequently green from age, and I have had personal experience, in its immediate neighbourhood, of severe cases of *low fever*, undoubtedly originating from that or some such source. This is a nuisance most easily removed.

“ These are not the nuisances of any one particular street, but are to be met with in almost every street throughout the parish. The neighbourhood of *Kensington* is generally in a very filthy condition, and yet close to the banks of the river. There are several dung-heaps between that and *Mill-green*, the removal of which would add much to the purity of the air and the appearance of the neighbourhood.

“ As regards the ‘ *dwelling-houses*,’ there are not so many nuisances dependent upon the inhabitants of them as upon the owners. How many scores of houses are there in the town of Brecon without a privy? I fear many. There are likewise many of the houses in a very bad state of repair, exceedingly dark and wet. Whose fault is this? It is impossible for persons living in such a state to weather the storm long; sooner or later the constitution must give way. The hardy and the young fight the battle vigorously for a while, but exposure to wet and cold and noxious gases will undermine the stoutest constitution.

“ This has not been the winter for fevers, or good for ascertaining nuisances, so much stormy weather and rain has done the part of public scavenger. The very prevalent diseases in *St. John’s* for some time past are those commonly designated ‘ colds;’ the excess of moisture in the air, and the constant evaporation taking place on the surface of the streets making the atmosphere yet more humid. This moist and cold air being drawn into the chest, and getting in contact with the sensitive and highly vascular membrane lining the bronchia or air-tubes causes ‘ cold of the chest.’ The same phenomena takes place as re-

gards the skin, and produces the common cold and fever. My object in this digression is to propose a remedy to obviate as much as possible the mischief. It will be seen at once that the object is to be attained by keeping the streets as dry as possible, by having capacious culverts, with a good fall and the sinks numerous, not too far apart. With this provision and better sites and construction of houses, bearing in mind ventilation, moderate warmth, and plenty of light, with quarterly whitewashings, I believe that fever and diseases of that class would be as rare in our town as small-pox after efficient vaccination.

"I have visited every parish in my district, and have nothing particularly to bring before your notice as regards the country parishes, excepting the badness of the cottages."

39. The parish of St. John contains a number of cottages in a very objectionable state. There are few privies; the back premises are close and filthy; the yards are ill-paved or not paved at all; and the ashes and refuse are scattered about the streets. The brook whence the supply of water is drawn is in a filthy condition, the gutters contain stagnant house-refuse, and there are numerous open ditches, pigsties, and dung-heaps.

40. *Kensington* is dirty and wet, ill paved and undrained. The *Madrel* stream runs down here, its channel is used as a sewer, and its water for domestic uses. *Bailey Glaes* stands upon each side of the *Madrel*. Here is a privy with a cess-pool on the upper side of the public well.

41. SEWERS AND DRAINS.—Brecon is very insufficiently sewered. Of the existing culverts some are ill-built, others are so shallow as to be suited for surface-drainage only, and parts of the town are without any drains at all. These sewers also all discharge into the bed of the river at points far above the ordinary water level, and create a nuisance only removed by floods, which in some cases, however, block up the sewer mouths with drift gravel. It appears from the official list furnished to me by the Clerk to the Commissioners, that there are 2,990 yards of sewers, varying from 6 to 12 and 18 inches square, and, in a few cases, 24 inches. The western end of the town and the suburb of *Llanfaes* are almost entirely without sewers.

42. The outfalls are about 12 in number on the *Honddu* and the *Usk*, and some of them, as the *Harp-close* ditch and the *Madrel*, are open and very offensive. In the *Honddu* some of the outfalls are just above the weirs, and cause a considerable nuisance.

43. The gutter-grates are very large, many of them clogged up, and all untrapped, and liable to be offensive. The open gutters are in many places charged with stagnant house-refuse.

44. WATER SUPPLY.—Brecon is supplied with water chiefly from public springs, from the river, by the waterworks, and from numerous private wells and pumps. The principal springs

are the Burva's well, Bailey Glaes well, the Priory well, and St. David's well in Llanfaes. The water of Bailey Glaes is of 13.9° of hardness.

45. The waterworks are vested in the Commissioners. They were made above half a century ago, when the town was of smaller extent than at present. About six years ago, the pipes were extended.

46. The works consist of a dam, or pool, giving a head of water upon a wheel, by which two pumps lift water about 18 feet into a reservoir. This reservoir is about 9 feet deep, is about 40 feet diameter, and holds about 70,000 gallons; that is to say, about a day's supply, at the rate of $12\frac{1}{2}$ gallons a-head for 6,000 inhabitants. It is stated that there is always water to work the wheel. A small spring is also led into the reservoir, and this, with the supply from the pumps, will, in wet seasons, fill the reservoir in 15 to 24 hours. The top water of the reservoir is 48 feet above the flood water level at the Usk bridge, and below a great part of the town. The quality of this water was of 6.88° of hardness; that of the adjacent Honddu, from which much of it is derived, is 11° .

47. There are 1,390 yards of iron pipe laid in connexion with this reservoir, varying from 2 to 4 inches in diameter.

48. These works are quite insufficient in the quantity and quality of the water, and in the height to which it is raised. The bad quality of the water is due to the rough and unprotected construction and position of the reservoir, which is very muddy, open, and overshadowed with trees. It is cleaned out annually; but when I visited it was in a dirty state.

49. By these works 185 houses are supplied with water, which yield a revenue of about 150*l*. The lowest sum taken is 10*s*. per annum; the highest, 2*l*. 2*s*.

50. This scale bears heavily upon the poorer classes, being 10*s*. 6*d*. per annum for a family of two, whatever be the rental of their house; 12*s*. for three; 16*s*. for four; 20*s*. for five; 24*s*. for six; 28*s*. for seven; and 3*l*. 6*d*. for eight in family. On the other hand, inns, &c., are only charged 42*s*. Children under 10 years of age are excused, and persons keeping a carriage or horse, and laying their own pipes, are charged 5*s*. additional. One man attends to the pipes. The repairs are not separately charged, but are not less than 10*l*. per annum.

51. HIGHWAYS.—The foot and carriage-roads are maintained by the Commissioners, within their jurisdiction. The roads are either pitched or macadamized, chiefly the former; the material being boulder stones from the river. They form an irregular surface, and are liable to work into holes. The broken stone laid on the roads is mountain limestone, brought by canal. A part of the main road is in the hands of the turnpike trustees. Most of the footways are flagged.

52. Twenty pounds per annum is paid to a contractor for scavenging the Commissioners area. The Commissioners also expend upon the public roads about 90*l.* to 100*l.* per annum.

53. Llanfaes does not appear ever to be scavenged at all, though assuredly not on account of its being sufficiently clean without such aid.

54. GAS.—The Commissioners contract with a private company for lighting the town. There are 60 public lamps lighted from sunset to sunrise during the whole year, excepting from the 10th of May to the 10th of August, and five nights at each full moon, unless light be then necessary. For this 4*l.* per lamp per annum is paid, including repairs and relaying pavements.

55. There is no consumption by meter, but private lamps are charged at about 2*l.* each per annum. The price of coal on the wharfs is 17*s.* a ton.

56. On the 10th August, 1835, the town entered into a contract for the above prices for 30 years, but determinable at 21 years upon giving notice. Whatever may have been thought of the terms of such a contract in 1835, there is no doubt that at present it tells heavily against the town.

57. BURIAL-GROUNDS.—The town contains four burial-grounds, of which St. John's is the most considerable, and St. David's the next. The College-ground is now disused. St. John's burial-ground is placed on the edge of the town. It contains an unusual number of gravestones, and is reported by the clerk to be quite full. The annual average of burials during the last 27 years has been 87½. In 1834, the number was 140, and in 1846 and 1847, 100 in each year. It has been proposed to add to this burial-ground a plot of ground on the north side outside, but above the town; however, I cannot but think that it would conduce to the health and appearance of the town if burials here were stopped altogether, and a proper spot of ground selected for the whole town at a short distance from its suburb.

58. A plot of land has been purchased for a cemetery by a congregation of Baptist dissenters, and has been partially cleared and prepared. The area included three dwelling-houses and premises, and the average annual burials from this congregation does not exceed three. This plot of ground having been purchased for the purposes of a cemetery before the passing of the Public Health Act, appears to be protected by clause 83 of that Act, but its position is by no means well chosen. It is skirted on one side by houses, and on another partially by houses and partially by the street, and is decidedly within the town. On the whole, whatever may be the powers of the trustees of this ground, I cannot but express a hope that they will endeavour to exchange it for another site at a greater

distance from the town, and not in such close proximity to the dwellings of the poor.

59. LOCAL ACTS.—There are two. The Commissioners' Act, 16 Geo. III., cap. 56; and the Market Act, May 9, 1838.

REMEDIES.

60. Brecon stands principally in need of drainage and water supply. An opinion has prevailed in the town that the latter is needless, and that it would be sufficient to divert a rill of water through the main sewers. Such a plan would leave the house-drains uncleansed, whereas any arrangement that kept these scoured must of necessity cleanse the main drains. Besides this, a proper water supply thus applied, by allowing of the use of small glazed tube-drains of earthenware, will materially diminish the cost of sewerage. A house water supply and a system of house and main drainage are inseparably connected.

61. WATER SUPPLY.—The proposed water supply will be drawn from Cwm Sober at a point about 3000 yards distant from the town, about 160 feet above its lowest level, and commanding every house in the town. This water, when analysed by Dr. Playfair, was of $7\cdot8^{\circ}$ of hardness.

62. A leat will lead the water into a reservoir containing two days' supply, whence a clay pipe will convey it by an easy fall to a point above the highest level in the town. Here a second reservoir, also containing two days' supply, should be formed, and from it iron pipes may be led all over the town and its suburb of Llanfaes.

63. The water is peculiarly bright and clear. It is soft, of excellent quality, abundant in quantity, and at a level to command, by natural pressure, every roof in the town. The arrangements will be very simple, and the present water-works will be wholly superseded.

64. SEWERS AND DRAINS.—The general disposition of the ground is very favourable for drainage, and even the flat tracts upon the Usk are considerably above the usual level of that river opposite the town, and very much above its level at a mile distant.

65. The sewers from the west, or right bank of the Honddu, will converge upon the three lower bridges, crossing the two upper, and being, if necessary, carried below the other by the canal feeder.

66. The drainage of the east, or left bank of the Honddu, will, in like manner, converge upon the head of the Watton, and there, or further on, receiving the drainage from other quarters, the whole will flow by a deep main culvert along the Watton to a point below the turnpike on the river, the fall leading it under the canal.

67. At this point there will still be a considerable fall

towards the river, and by leading the culvert further down it may be so arranged as to command, at a pressure of from 5 to 20 feet, the whole of the meadows bordering the left bank of the Usk.

68. The drains will be kept clean by the water supply from the houses, and without any peculiar or special flushing.

69. SEWAGE DISTRIBUTION.—There is a considerable tract of meadow land upon the left bank of the Usk, opposite to, and below, the town, upon which the sewage might be very economically applied in a fluid state. The fall of the Usk is very considerable, and, if necessary, the sewer might be conveyed at an easy fall below the town, until it reached a point at which its contents could be distributed by natural pressure. Opposite to the town the fall would only be sufficient for ordinary irrigation. Also, if the sewage manure was found to be in great demand, the sewer could be led as far as the first canal lock, where its contents might be poured into barges, and distributed, as at Manchester, by means of pumps and hose over the lands upon the banks of the canal.

70. BOUNDARIES.—I recommend that the Public Health Act be applied to the whole of the municipal borough, including the extra parochial districts now encompassed within its limits.

71. CHARGES.—The water supply, main sewerage, and house improvements, proposed to be applied to the town of Brecon, will be paid for by three distinct rates. Of these the *water rate* will be a general rate, but levied only upon those houses to which water is supplied. The *sewer rate* will also be a general rate, levied upon houses and land, but upon each rating of the latter in the proportion of one-fourth only of the former. And the *private improvement rate* will be a private rate, levied upon such house property as needs the remedies, and in the proportion to which each may need them.

72. The water rate will pay for the reservoir and the street pipes and plugs, and the repairs and working expenses of the whole; the sewer rate will pay for the street sewers and the main outfalls of the town; and the private improvement rate will provide service-pipes from the mains to the houses, drain-pipes from the houses into the street drains, proper privies or water-closets, dust-bins, the filling up of cesspools, and the paving the courts and yards.

73. Supposing the number of houses in the borough to be 1,287, the water rate and sewer rate will each amount to an average charge of about one penny a week. To this is to be added the charge for private improvements, which will amount to another penny, so that, for an average weekly charge of 3d., or an annual charge of 13s. on each house, Brecon will obtain the advantages of a complete water supply, drainage, and proper house accommodation, even for the poorest of its inhabitants.

74. These calculations are made on the supposition that the money required to execute the works will be borrowed at once, and repaid, principal and interest, at 5 per cent., in equal weekly or annual instalments distributed over 30 years.

75. The town, or rather certain persons within the town, now pay about 150*l.* per annum for water from the old works. The payment of this sum, will, of course, be superseded by the proposed arrangements.

76. REMARKS.—At present, the lowest water charge for a family of two adults, cottagers, is 10*s.* 6*d.* a year, or nearly 2½*d.* a-week. Under the new arrangement, the *average* will be 1*d.*, but supposing the water-rate to be 6*d.* in the pound, the charge in such a case would be ½*d.* a-week.

77. The present supply of water is impure, unfit for drinking, and deficient in quantity, and is not delivered at the level of the bed-rooms of the houses. The proposed supply of water is pure, soft, will always be laid on, and will command every roof in the town.

78. The proposed water-works will be *the property of the town*, and will be administered by the Local Board solely for its benefit, and will furnish the means of watering the streets, and supplying public baths and fountains free of charge. At the same time manufacturers, hotel-keepers, smiths, &c., who derive a benefit in their trade from the use of a large quantity of water, will be called upon to pay an extra charge. The revenue derived from such “great consumers,” together with any sum resulting from the sale of sewage, will be placed to the credit of the town, and go towards the reduction of the rates.

79. The borough contains 1,287 houses, of which 952, or ¾ths, are under 10*l.* rental; the low charge for water will therefore be a boon to a poor and to a very numerous class, whose health is peculiarly their capital.

80. Brecon certainly ought to be one of the cleanest and most healthy towns in South Wales. It possesses in a remarkable degree the natural facilities for obtaining a good water supply and drainage, and it enjoys a fine mountain air, and scenery of uncommon beauty. These advantages have been in a great measure neutralized by neglect, but the town has now an opportunity, at an expense, light in the proportion in which it will fall upon each inhabitant, of at once sweeping away the venerable nuisances by which it is disfigured, and giving free play to the natural advantages which it possesses in so large a measure.

81. SUMMARY.—I have to state, by way of recapitulation:—

1. That the mortality of the borough of Brecon is high as compared with the surrounding district, or 26·8 in the thousand, and in particular localities very high indeed, amounting to 33 in the thousand annually.

2. That this excessive mortality, and the disease of

which it is the indication, is principally confined to certain undrained localities, ill supplied with water, with few or no privies, and about which, refuse of various kinds is allowed to collect and putrify.

3. That the natural advantages of Brecon are very considerable, and that there is nothing in the employment of the people calculated injuriously to affect life or health.

4. That the causes of the excessive mortality may be removed, and a proper water supply, drainage, and house accommodation given, at an average charge of 3*d.* a-week on each house.

5. That the proposed outlay will be in lieu of the sum paid at present for water, and by diminishing sickness, and the consequent poor rates, and by providing manure in a saleable form, will tend to reduce the existing expenditure.

6. That proper burial accommodation is much needed in the town, and that it is desirable that a cemetery common to all should be provided in the suburbs.

82. RECOMMENDATIONS.—I have therefore to recommend :

1. That the Public Health Act be applied by Provisional Order to the municipal borough of Brecon, and to the extra parochial districts of Christ's College and the Castle, contained within it.

2. That the Local Board be composed of nine persons, besides the mayor, to be selected by the Town Council, and three persons to be elected by the rate-payers of the extra-parochial districts.

3. That one-third of each number do go out of office annually, one year after the first and each successive election.

4. That the qualification of each member of the Local Board be a rated rental of 25*l.* or the possession of property of the value of 800*l.*

5. That the day for the annual retirement of one-third of the members of the Local Board be fixed for the 25th of March, commonly known as Lady-day.

6. That the provisions for lighting the town and levying a lighting rate, be transferred from the Local Act, 16th Geo. III., c. 56, to the Public Health Act, as here recommended to be applied by Provisional Order.

I have the honour to remain,

My Lords and Gentlemen,

Your obedient Servant,

The General Board of Health,

&c. &c. &c.

GEO. T. CLARK