

**Dr. J. Spencer Low's report to the Local Government Board on the sanitary circumstances and administration of the Tredegar Urban District.**

**Contributors**

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# REPORTS

TO THE

## LOCAL GOVERNMENT BOARD

ON

## PUBLIC HEALTH AND MEDICAL SUBJECTS.

(NEW SERIES No. 8.)

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Dr. J. Spencer Low's Report to the Local  
Government Board on the Sanitary Circum-  
stances and Administration of the Tredegar  
Urban District.

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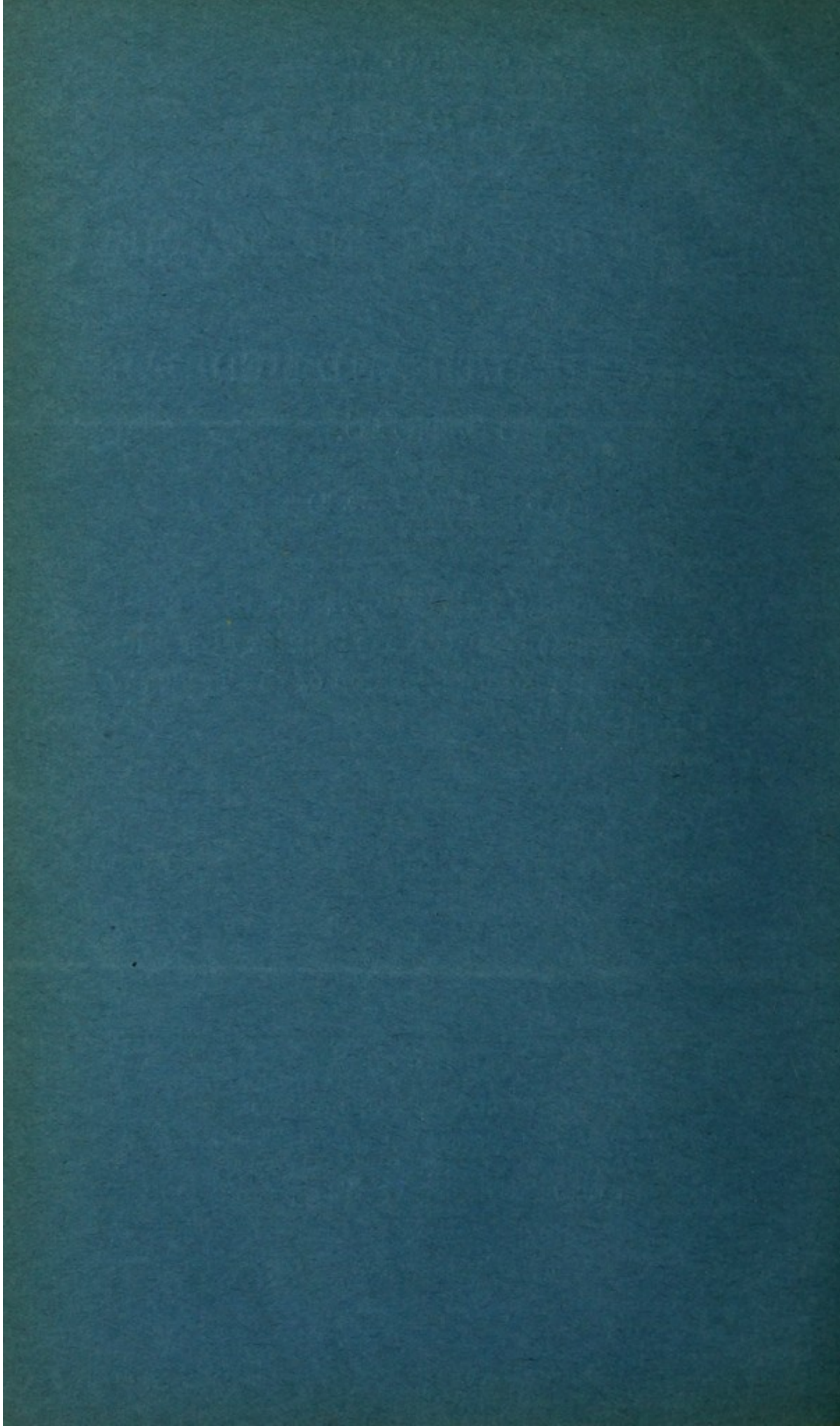
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1909.

*Price Threepence.*







# Dr. J. Spencer Low's Report to the Local Government Board on the Sanitary Circumstances and Administration of the Tredegar Urban District.

ARTHUR NEWSHOLME,  
Medical Officer,  
1st June, 1909.

The Tredegar Urban District, with an area of 8,118 acres, is situated in the north west of the administrative county of Monmouth, and occupies the upper portion of the Sirhowy valley, and the hills above it. It comprises two civil parishes: Tredegar in the registration county of Monmouth, and Dukestown in the registration county of Brecknock.

The district, which runs almost due north and south, is traversed by the Sirhowy branch of the London and North Western railway; its length is  $7\frac{1}{4}$  miles, its width is rather more than 2 miles in the extreme north and 4 furlongs in the extreme south.

The southerly portion is bounded on the east and west by hills ranging from 1,200 to 1,300 feet above Ordnance Datum; the hills in the north rise to a height of from 1,500 to 1,800 feet. Population is concentrated in the central two miles of the district; the northern three miles, much of it elevated moorland, and the southern two miles are sparsely inhabited.

The following table gives the population of the district and other details:—

Parish.	Population.			Number of Inhabited Houses.		Rateable Value.	Annual Assessable Value.	Balance of Outstanding Loans.
	1891 Census.	1901 Census.	1908 Estimated.	1891 Census.	1901 Census.			
Tredegar .. ..	15,391	16,430	17,740	2,723	2,967	£ 60,013	£ 54,068	£ —
Dukestown .. ..	1,950	2,067	2,260	415	435	5,270	4,665	—
Whole District ..	17,341	18,497	20,000	3,138	3,402	65,283	58,733	62,353

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Loans have been incurred for water and gas works, a cemetery, and a new road to Argoed. Money will shortly have to be borrowed for the sewerage of the town and probably for other purposes.

*Geologically*, the moorland in the north is situated on mountain limestone; passing south this is succeeded by millstone grit, and still further south by the coalbearing strata of the great South Wales coalfield, upon which the larger portion of the district stands.

*Industries* are chiefly coal mining and, to a much less extent, iron and steel working.

### SANITARY CIRCUMSTANCES.

*Housing.*—The old town of Tredegar was built in the early part of last century on the west side of the Sirhowy river. Houses were huddled together without due regard to proper structural and hygienic considerations, and, as time went on, the town sank into a more and more insanitary state. When the original leases in the west and central wards fell in and were renewed, it is claimed that much improvement in the condition of house property was effected. However this may have been, at present several unhealthy slum areas are to be found containing houses which are totally unfit for human habitation. In regard to some of these areas I am informed that the Tredegar Iron and Coal Company, Ltd., when their leases had nearly expired, sold houses cheaply, some to their existing tenants but mostly to speculators in such property. The leases were subsequently renewed for a term of 60 years at an increased ground rent, and house rents also have been raised very considerably. Further, this company have sold old cottage property in Georgetown (River Row) and Troedrhigwair with similar result, and a few years ago the Ebbw Vale Steel, Iron and Coal Company, Ltd., sold some 400 houses in Four Rows and Sirhowy Side partly to their tenants (their own workmen), but mostly, I understand, to speculators. A number of so-called "slum landlords" have in this way come into existence in Tredegar.

The medical officer of health has from time to time commented in his annual reports on the housing question. In 1907 the council instructed their inspector of nuisances to submit a report upon the back-to-back and cellar dwellings in the district. From this it appears that 82 cellar dwellings were reported upon, falling into three classes:—

(1) 41 were erected for habitation as separate cellar dwellings. They contain a living room and two bedrooms, the back bedroom being practically in total darkness; the walls are damp and through ventilation is absent.

(2) 36 were originally used as underground kitchens in connection with houses above them, but they are now converted into separate dwellings. They are damp, and as a rule badly lighted and insufficiently ventilated. They contain a living room and one or two bedrooms.

(3) 5 are separately occupied cellars under buildings of a public character. They are damp and ill-ventilated.



I visited a large number of the above and in my opinion the bulk of the cellar dwellings are totally unfit for habitation. Their rents varied from 6s. 4d. to 10s. a month.

The block of houses known as River Row, containing 14 cellar dwellings, each consisting of a kitchen and a bedroom, and the same number of dwellings vertically above them with a similar number of rooms, were being converted at the time of my visit into houses of a much better type. The owner had been induced to raise the roofs in order to provide suitable bedrooms on the top storey, to close the doorways between the cellar kitchens and the cellar bedrooms, and to connect these basement rooms with the rooms above them by means of staircases. Each cellar kitchen and the rooms directly over it thus become one dwelling, and the cellar bedroom (now a basement kitchen), and the rooms directly over it become another dwelling. In this way the same number of tenements are provided, cellar bedrooms have been abolished and each house has a basement kitchen or wash-house, a living room, and two bedrooms.

A very notable improvement would be effected if all the cellar dwellings of this type were dealt with in the above way. Alternatively, they should be closed as unfit for human habitation.

Back-to-back houses can be classified in much the same manner as the cellar dwellings.

As examples of one type—those originally erected as back-to-back houses—21st Row Sirhowy may be cited. These houses are three storeys in height with two rooms on each floor, their rents varying from 15s. to 20s. a month. Besides the defects inherent to dwellings of this character, some of the premises are dilapidated and their surroundings are insanitary.

The second class of back-to-back houses consists of those transformed from "through" or single four-roomed cottages by the process of stopping up the central doorways between the back and front rooms, and by letting off each side of the house separately. The original staircase serves one tenement, and by cutting away a small portion of the bedroom floor access is gained to the upstairs bedroom of the corresponding tenement behind by means of a staircase little better than a ladder. In the result there is complete absence of through ventilation; smallness of the tenement leads to gross overcrowding; occupiers of the front tenements are completely cut off from convenient access to their closets and slop drains, with the consequence that waste water, &c., is thrown into the street or gutter. This plan of sub-dividing houses is a profitable one to their owners; in some instances each half of the bisected house is more heavily rented than was the whole, of which it now forms a part. In a miserable area at the back of Iron Row, with a large variety of sanitary defects, back-to-back houses with one small living room and a bedroom, much overcrowded, are rented at 16s. to 20s. a month.

The unwholesome locality known as Pittabach deserves special mention: the water supply is derived from a dip well liable to pollution; the interiors of some of these houses are in very bad order, little plaster being left on some of the walls; laths in the ceilings are giving way, and the roofs leaking. Some yard paving



has, however, been effected. Structurally the premises are through houses, but each half of the house is let off to separate tenants and the middle door is fastened up. One house formerly rented at 20s. a month is now let off to two tenants at 10s. and 14s. a month respectively. Almost all the water closet basins serving this group of houses are choked with faeces nearly level with the top of the seat; the closets are supposed to be hand-flushed, but water has to be carried uphill for a considerable distance; seemingly little water is used in this particular locality for any purposes, these tenants having ideas of sanitation of a very rudimentary kind.

Some of the slum property in Tredegar is owned by members of the district council.

*Overcrowding* is extremely rife in Tredegar: in particular most of the back-to-back dwellings suffer from this defect.

*New buildings.*—The more recently erected houses seem to be well-designed as better class workmen's dwellings. I am informed that three building clubs are in operation; their members after making monthly payments for a number of years ultimately become owners of houses in which they live.

The following table gives the number of houses newly erected in Tredegar during the last eight years:—

Year.	1901.	1902.	1903.	1904.	1905.	1906.	1907.	1908.
Number of new houses	39	52	46	62	110	137	91	97

New houses are much sought after and are occupied as soon as completed. They are generally built of stone, sometimes with brick fronts, and have slate roofs. Commonly three bedrooms, two living rooms, and a scullery are provided at a rental of about 7s. 6d. a week.

*Suggestions for dealing with insanitary house property.*—The activity of the council has been hampered by the consideration that if persons were evicted from houses unfit for human habitation, overcrowding would ensue, unless their late occupants left the district, for no houses are untenanted in Tredegar. Unfortunately private enterprise has not provided a sufficient number of new buildings to keep pace with the demand, and the houses which are erected are beyond the means of most of the inhabitants of the insanitary areas, at any rate if one family per house were to be the rule. The council might consider whether some kind of building could not be devised, perhaps upon the flat system, to accommodate as many of these poorer class families as might be thought necessary. If such buildings were erected to serve, in the first instance, as temporary homes for evicted persons, but ultimately as permanent tenements, it would be possible to close the cellar dwellings until they had been converted into houses of a better type, as is now being done at River Row; and after that the back-to-back and other congested areas could be taken in hand. In any event the district council should in future enforce cleanliness in these slum areas by using the powers which they possess under the



Public Health Acts, and they should not hesitate to institute legal proceedings against persons contravening the provisions of these Acts. Persons in these areas make a practice of throwing filth anywhere in the yards, and children commonly defecate in any place they choose; the interiors of many houses are in a dirty state. Much improvement in these and many other matters could be effected by the strict enforcement of ordinary cleanliness. The services of an additional inspector of nuisances are necessary for this purpose, and voluntary agencies also, if available, might usefully be employed.

*Water supply.*—Dukestown and Sirhowy are within the Ebbw Vale Urban District Council's area of supply; I am informed that 652 houses in the Tredegar district are served from this source. Iron pipes are used on account of the plumbo-solvent action of the water. The rest of Tredegar is supplied mainly from Shon Sheffrey's spring, in the parish of Dukestown, rising in hilly moorland. The Tredegar council are entitled to take not more than 600,000 gallons per day, the minimum observed yield of the spring. The water which is piped directly to the town from a gauging basin at the spring, is at times discoloured with peat and other vegetable matter; the council are therefore considering the advisability of erecting four Candy's filters at an estimated cost of some £2,000.

Another source of supply is afforded by the Ton-y-Fedw spring, on the eastern side of the valley, and by upland surface water in its vicinity, yielding a minimum of 250,000 gallons per day. This water is piped to a storage reservoir and thence to two sand filter beds and a service reservoir. The outlying parts in the north are supplied with water obtained locally from spouts and springs.

A small portion of the Bedwellty Urban District at Hollybush is within the Tredegar water limits; water is also supplied by meter to the Bedwellty Council for the use mainly of the Sirhowy Valley portion of their district; Tredegar water is sold in bulk by the Bedwellty Council to the New Tredegar and the Rhymney and Aber Valleys Gas and Water Companies to serve the Rhymney Valley portion of the Bedwellty Urban District. An agreement has also been arrived at between the Tredegar and the Mynyddislwyn Urban District Councils for the supply of part of the latter district.

A considerable extent of the Sirhowy Valley in which coalmining is now being extensively developed, and where much building is proceeding or projected, is therefore dependent upon Tredegar for its water supply.

*Sewerage and sewage disposal.*—The whole town at present drains directly into the Sirhowy river which contains a large volume of water after heavy rain, but at dry periods of the year it shrinks to a mere brook, and then, as the medical officer of health writes in one of his annual reports, "it is little better than an almost stagnant cesspool fed by the sewage of this and other districts south of Tredegar." Not only are the various streams in the district seriously polluted by sewage, but solid refuse is freely deposited in them.

The problem of sewage disposal in this and in other Monmouthshire valleys has been solved by the formation of the Western



Valleys Sewerage Board under the Western Valleys (Mon.) Sewerage Board Acts of 1903, 1906, and 1907, the latter Act making the Tredegar Urban District Council a constituent authority of that Board, the others being the Urban District Councils of Abercarn, Abertillery, Bedwellty, Ebbw Vale, Mynyddislwyn, Nantyglo and Blaina, and Risca. Trunk sewers are being laid down the valleys concerned, and will discharge their contents into the sea near Newport.

In accordance with the Acts above referred to, subsidiary sewers have to be laid by the council to serve every part of the district, and to connect with the trunk sewer. Plans for this purpose will shortly be submitted to the Local Government Board for approval. In most parts of Tredegar the existing sewers (culverts and box drains discharging into watercourses or directly into the river) will be utilised only for storm water. Some sewer lengths properly constructed in recent years will, however, be coupled up with the new scheme.

*House drainage.*—New houses are furnished with stoneware drains jointed with cement; inspection chambers and intercepting traps are not provided. Drains are smoke tested, the water test not being employed. Some premises are not provided with slop drains, and even where slop gullies are available some persons make use of the street for the disposal of slop water. D shaped iron lip-traps are not now so numerous as in the past, proper stoneware gullies being provided in the majority of instances.

Soil pipes from water-closets are ventilated, but they are not always carried up full bore above the eaves.

Untrapped and hand-flushed closet pans are fixed directly over a drain or sewer at Bedwellty Pits, a considerable length of pipe thus being ventilated directly through the closet seat.

*Excrement disposal and removal.*—Water-closets are usually provided in the central portion of Tredegar, but in Sirhowy there are only about 30 of them, galvanised iron pails being provided in lieu of water-closets, except in some outlying parts where vault and midden privies are in use. Pails, to which ashes are seldom added, are emptied twice weekly by the council's scavengers, except in the more rural parts, the excrement being deposited on land or tips remote, as a rule, from dwellings.

Most water-closets in Tredegar are hand-flushed, with the usual result that the pans are extremely foul. The byelaw on the subject (number 77, New Streets and Buildings Series) is applicable to existing closets and should be enforced. I saw a number of closet pans choked with excrement, a result attributable to the precarious nature of the hand-flushing, more especially where more than one household are served by the same closet.

*Refuse disposal and removal.*—House refuse is deposited either in small uncovered movable receptacles, in heaps in yards and back streets, or in large fixed open dust bins, in which hens scratch, children play, and to which the wind has free access. The refuse is removed to the tips daily, except from the larger bins, which are emptied three times a week. Year by year the medical officer of health in his annual report has complained of the tips:



in 1903 he wrote, "another year's contribution has been added to the accumulated mass of filth deposited on the rubbish tips which encircle the town." In 1901 the provision of a destructor was considered by the council, but in view of the expense likely to be incurred on account of a sewerage scheme, they deemed the cost prohibitive. However, a few weeks before my visit a small destructor had been erected out of current revenue; it has one cell and no forced draught, but owing to the combustible nature of the refuse, which contains a large amount of unburnt coal, no difficulties have been met with, and a much-used tip will consequently be abandoned. The cost of this experimental destructor, which deals with some 12 loads daily out of the 50 produced on an average, was something less than £300, and it is thought that one or more may be installed in other parts of the district. It is proposed to add a boiler and a mortar mill or stone crusher: the provision of a steam disinfecter should be also considered.

*The regulated buildings and trades are as follows:—*

Common lodging houses	...	...	8 registered.
Slaughter houses	...	...	3 "
Cowsheds	...	...	42 "
Milk shops	...	...	6 "
Bakehouses	...	...	16 "

*The common lodging houses* are fairly well kept; at one time considerable complaint of overcrowding was made and prosecutions had to be instituted, but little trouble is now experienced.

*Slaughter houses.*—Most of the slaughtering in the district is done on a company's premises which have recently been extended; three slaughtering compartments are provided for cattle and sheep and one for pigs. These premises, which are used jointly by some nine butchers, are on the whole satisfactory, the principal point of objection being the wooden material used to divide the slaughtering compartments from one another. Of the slaughtering places elsewhere, one is practically not used; the other is used by one butcher only and exhibits several defects.

A number of *bakehouses* were visited, and found, on the whole, to be satisfactory. Some are not well lighted and ventilated; one is in very close proximity to a stable. None of them are underground.

*Cowsheds* are nearly all in a most insanitary condition; only a few are fair. Most of those that I saw are dark, dirty, ill ventilated, badly floored and defectively drained. Many of them are overcrowded, the cows being in a filthy state and manure being commonly heaped close to the cowshed. One dairy, where milk is stored before sale, contained, at the time of my visit, some soiled underclothing. One of the filthiest cowsheds is tenanted by a man who had, in the week before my visit, been fined £15 for added water and deficiency of fat in his milk.

The cubic capacity of the sheds has not yet been ascertained by the inspector of nuisances.

There are seven *public elementary schools* in the district. I visited them all and found a considerable number of sanitary defects,



chiefly in relation to drains, closets and urinals. Privy pits at the Trefil school are constructed against one of the school walls; shortly before my visit it transpired that these pits had not been emptied for five years. A broken slop drain at the Troedrhiwgwair school appears to have discharged slop water over the playground surface for about a year, though the matter is said to have been reported long ago to the school managers.

#### SANITARY ADMINISTRATION.

The local board district of Tredegar was constituted in 1874; the parish of Dukestown was added to it in 1878. The district council, which consists of 12 members, meets twice monthly, sanitary matters occupying their attention more particularly at alternate meetings, when the medical officer of health and inspector of nuisances attend and report; there is no sanitary committee.

The following Acts have been adopted :—

Public Health Acts Amendment Act, 1890, Part 3, coming into force on 1st January, 1899.

Public Health Acts Amendment Act, 1890, Part 4, 7th January, 1895.

Infectious Disease Prevention Act, 1890, 1st December, 1898.

Infectious Disease Notification Act, 1889, 1st January, 1890.

Private Street Works Act, 1892, 15th April, 1893.

Byelaws, framed upon the Board's model, have been made on the following subjects :—

Cleansing of footways.

Nuisances.

Removal of offensive or noxious matters.

Common lodging houses.

New streets and buildings.

Slaughterhouses.

Tents, vans and sheds.

Offensive trades.

The above were allowed by the Board on 30th September, 1901.

Houses let in lodgings, allowed by the Board on 30th November, 1901.

Dairies, cowsheds and milkshops regulations were made on 25th July, 1899.

Many houses in Tredegar are inhabited by persons who require a great deal of sanitary supervision. Where houses are occupied by more than one family, each paying less than 5s. a week (exclusive of any charge for furniture), some control might be effected through the "Houses let in lodgings" byelaws; no houses of this class have yet been registered. The council themselves contravene the byelaw prohibiting the removal of offensive matter through the streets later than 8.30 a.m. in summer and 9.30 a.m. in winter.

*The Medical Officer of Health*, Mr. G. A. Brown, M.R.C.S. (Eng.), 1865, L.S.A. 1864, J.P. for the County of Monmouth, was appointed in 1877. He receives an annual salary of £50, with



repayment of a moiety from county council funds. Mr. Brown is district medical officer, public vaccinator, medical officer to the workhouse, and certifying factory surgeon; he is also in private practice. Visits are paid in company with the inspector of nuisances when any matters of special sanitary importance arise, and from time to time the regulated premises in the district are inspected. Mr. Brown has for many years furnished an admirable series of annual reports containing much useful advice; but he has been in very busy practice and has not on this account had time personally to supervise the routine work of the public health department, nor to maintain all the records which he would have kept had time allowed him to do so.

*The Inspector of Nuisances*, Mr. Llewellyn Howells, was appointed in 1902; for nine years previously he had acted as assistant inspector. His salary is £120 a year, with repayment of a moiety from county council funds. Mr. Howells, who holds the certificate of the Royal Sanitary Institute, appears to be a zealous officer possessing a good knowledge of the requirements of his district.

In addition to the ordinary duties of his office, he has also to supervise the scavengers, to disinfect infected dwellings, and to inspect cowsheds and other regulated premises. I am quite satisfied that Mr. Howells, however willing he may be, cannot, unassisted, properly supervise the district, although it is admitted that he performs a large amount of work. When he discovers a nuisance he tells me that he goes at once to see the person responsible for its abatement, and in most cases this is secured forthwith; action on these lines is not always recorded, though this will, I am assured, be done in future. If necessary, "preliminary" notices or letters are sent, and, failing success, the matters are reported to the council and statutory notices are issued.

The following table shows the action taken by the inspector of nuisances, but for the reasons given above the record is incomplete:—

—	1904.	1905.	1906.	1907.	1908.
Nuisances reported ...	206	197	195	233	254
Nuisances abated ...	342	413	375	365	350
Informal notices served ...	144	162	150	169	198
Statutory notices served ...	32	35	47	52	39
Legal proceedings taken ...	—	—	1*	4†	1‡

\* Exposing unsound meat for sale—conviction.

† Overcrowded and unregistered common lodging houses—two convictions, two dismissals.

‡ House unfit for habitation—order made.

The council's *surveyor*, Mr. W. L. Roach, a whole time officer, receives an annual salary of £250; the *gas and water engineer*, Mr. D. W. Davies, receives £170 per annum for his whole time services.



## NOTIFICATION AND PREVENTION OF INFECTIOUS DISEASES.

The following table gives the number of notifications and deaths from the more important infectious diseases from 1896 to 1908 :—

Year.	Scarlet fever.		Diphtheria including Membranous Croup.		Fever.*		Puerperal fever.	
	Cases.	Deaths.	Cases.	Deaths.	Cases.	Deaths.	Cases.	Deaths.
1896 ...	275	11	11	2	26	3	8	3
1897 ...	168	4	11	4	54	6	9	2
1898 ...	63	—	36	16	43	10	5	1
1899 ...	67	1	250	55	15	6	5	—
1900 ...	114	5	147	23	68	13	10	8
1901 ...	170	3	48	6	70	8	10	5
1902 ...	182	6	46	3	80	10	28	5
1903 ...	260	19	37	1	42	2	20	—
1904 ...	177	6	65	4	25	1	17	2
1905 ...	48	1	56	8	9	2	8	2
1906 ...	33	—	32	3	44	7	4	—
1907 ...	25	1	39	4	10	2	8	2
1908 ...	36	—	25	3	20	4	4	2

\* Enteric and continued fevers.

No cases of small-pox were notified in the above period.

On receipt of a notification certificate, the medical officer of health generally visits the invaded house, and if he thinks that the inspector of nuisances can usefully intervene, but not unless, he informs that official, who makes inquiries, gives advice and leaves disinfectants. No printed forms are used for these inquiries nor is the information noted in a register or otherwise recorded. The inspector of nuisances appears to disinfect by means of formalin fumigation, when he is instructed to do so, but sometimes it is not ordered where, for instance, the occupants have no place to which they can go whilst disinfection is in progress. No steam disinfecting apparatus is available; the medical officer of health advised that one should be procured as long ago as 1890. No arrangements have been made for bacteriological examinations in cases of doubtful diagnosis. Isolation in many of the houses is in name only, but removal to hospital is not popular and has not been pressed.

The methods adopted for dealing with outbreaks of infectious disease cannot be regarded as satisfactory; some such methods as the following might with advantage be practised :—

1. Personal inquiries should be made in each case of infectious disease by the medical officer of health or by the inspector of nuisances under the direction of the medical officer of health, and the information obtained entered on a form or card and properly filed. These inquiries should comprise all available information as to sources of infection and as to the possibility of overlooked cases of disease.

2. Arrangements should be made by the council for bacteriological examinations where necessary.



3. Cases incompletely isolated at home should be removed to a properly equipped isolation hospital, maintained ready for use.

4. Infectious articles should in every case be suitably dealt with preferably by steam disinfection when possible. Infected premises should in all instances be thoroughly disinfected.

*Isolation hospital.*—In 1892 Ashvale House was secured as a hospital on a 60 years lease at an annual rent of £7. The front portion of the house is let off to one of the council's officials at a rent of £16 a year; another part accommodates the caretaker, and the remainder serves for three hospital wards, the whole premises being under one roof. The ward on the ground floor is damp and has a gloomy interior; two rooms upstairs are also very damp. Only one kind of infectious disease could be properly accommodated here at one and the same time, as the wards are all in aerial communication. Moreover, the hospital is too damp to be used, and there is not sufficient accommodation for nurses. Four cases of enteric fever were received into this hospital in 1901, none from 1902 to 1905, six in 1906, one in 1907, and one in 1908. These few cases have not had the benefit of trained nursing; no doubt the women engaged locally to look after the patients have done as well as could be expected of them, but unskilled nursing may be highly dangerous to the lives of the patients and to the reputation of the institution on account of the emergencies which may at any time arise in, say, cases of typhoid fever or diphtheria. It is inadvisable to allow these attendants to go home to sleep as is done at Tredegar.

Diphtheria was seriously epidemic in 1899 and 1900, when 250 and 147 cases respectively were notified. No cases were removed to hospital, and infection spread among members of invaded households and in adjoining premises. Thus, in the locality known as Penmark, notifications were received from adjacent houses as follows:—

27th March, 1899, No. 7 Penmark.

1st April, 1899, No. 8 Penmark (2 cases).

7th April, 1899, Nos. 8 and 16 Penmark.

8th April, 1899, Nos. 8 and 19 Penmark.

10th April, 1899, No. 7 Penmark.

In similar fashion Nos. 5, 7, and 22, Walter Street furnished nine cases, five in one house, between 20th December, 1898 and 13th January, 1899.

Row 28, Sirhowy, furnished cases in the following manner:—

1st February, 1899, No. 249 (2 cases).

7th February, 1899, No. 347.

9th February, 1899, No. 347.

16th February, 1899, No. 350 (2 cases).

24th February, 1899, No. 347.

3rd March, 1899, No. 344.

In 1900, out of 17 cases notified in one month, eight occurred in one house.

Tredegar is no better equipped to cope with an epidemic of diphtheria now than in 1899 and 1900. The manner in which the disease spread from house to house in some localities points to case-to-case infection. By efficient administration such occurrences might be prevented: this would include the provision of a



well-equipped hospital, in place of the present makeshift arrangements, and also a steam disinfecting apparatus.

*Vital statistics.*—The following table gives the death and birth rates, the infantile mortality, along with the rainfall in Tredegar for the years 1896–1908 :—

Year.	Death-rate per 1,000 population.	Birth-rate per 1,000 population.	Infantile Mortality per 1,000 births.		Rainfall Inches.
			Tredegar.	Registrar General's "smaller towns" * of England and Wales.	
1896 ...	20·70	39·35	+185	—	51·06 —
1897 ...	18·50	35·64	+166	—	75·50 +
1898 ...	19·00	37·05	§159	—	55·92 —
1899 ...	21·87	34·94	+188	—	56·96 —
1900 ...	21·85	36·08	—122	—	67·58 +
1901 ...	19·93	40·43	+166	—	52·17 —
1902 ...	22·84	39·20	+194	135	50·58 —
1903 ...	16·96	40·05	—127	135	83·08 +
1904 ...	20·21	38·01	+193	154	55·76 —
1905 ...	19·84	39·80	+187	132	50·90 —
1906 ...	16·12	39·75	—128	138	55·37 —
1907 ...	19·3	37·93	§157	122	58·68 §
1908 ...	18·75	39·85	—134	124	50·14 —

\* 20,000—50,000 population (1904–1908), 25,000–50,000 (1902 and 1903).

§ Approximately the mean.

For purposes of comparison the infantile mortality in the "smaller towns of the Registrar General" has been included. In 1903, a very wet year in Tredegar, and in 1906 when the rainfall was under the average, which for the 27 years ending 1907 was 58·70 inches, this district showed considerably better results than the "smaller towns" of England and Wales. Generally, however, the infantile mortality in Tredegar has been enormously greater, and as a rule it has fluctuated inversely with the amount of rain.

The part played by diarrhoea, measles, whooping cough, pneumonia, and bronchitis in augmenting the infantile mortality is shown in the following table :—

Year.	Deaths under One Year.				
	Diarrhoeal Diseases.	Measles.	Whooping cough.	Pneumonia and Bronchitis.	Total from All causes.
1900 ...	12	2	—	7	81
1901 ...	9	—	13	32	125
1902 ...	10	9	—	43	142
1903 ...	15	—	1	18	96
1904 ...	19	3	1	24	140
1905 ...	29	3	3	36	144
1906 ...	22	—	2	18	100
1907 ...	14	4	4	37	118
1908 ...	28	—	3	19	107



The considerable influence of chest affections upon the infantile mortality in Tredegar is plainly apparent in this table.

*Conclusions.*—In my opinion the council would do well, when a vacancy occurs, to consider whether the needs of the district would not be better served by the appointment of a whole time medical officer of health in combination with some of the neighbouring districts of Nantyglo and Blaina, Ebbw Vale, Abertillery, Rhymney, Bedwellty, Mynyddislwyn, Risca, and Abercarn.

The Board have already expressed a similar opinion in regard to some of the above-mentioned districts, which, after inspection by their medical inspectors, have been found to be in a more or less insanitary state.\* The present medical officers of health of nearly all the above districts are also district medical officers, and therefore hold office only by the Board's special permission.

There is need for much sanitary work in Tredegar. The medical officer of health for such a district ought to have time to supervise personally the work of his department, particularly in regard to improvements much needed. For example, in recommendations as to housing and cowsheds the medical officer of health ought to be entirely independent of all the ties which are inseparable from private practice.

#### RECOMMENDATIONS.

1. The council should take the steps indicated above to deal with the insanitary house property in the district. They should, in particular, insist on the persistent enforcement of notices to abate overcrowding, to cleanse living rooms, and to clear choked closets.

2. The sewerage and drainage of the district should be pressed forward with all possible speed.

3. Water-closets should be provided with effective flushing arrangements and the byelaw regulating this should be enforced.

4. House refuse should be disposed of by means of destructors; the existing destructor should be extended or additional installations should be provided.

5. Much attention should be given to the condition of cowsheds.

6. An isolation hospital, properly equipped and staffed, ready for use, and a steam disinfecting apparatus, should be provided.

7. The methods of dealing with infectious diseases should be revised and improved.

8. Assistance should be provided for the inspector of nuisances.

9. The council, in conjunction with the councils of neighbouring districts, should, when a vacancy occurs, take steps to secure the services of a whole-time medical officer of health.

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\* See reports of the Board's Medical Inspectors, Nos. 212, 228, and 255, on Nantyglo and Blaina, Abertillery and Ebbw Vale Urban Districts respectively.



In conclusion, I have much pleasure in thanking the officers of the district council and the medical officer of the county council, Dr. D. Rocyn-Jones, for the assistance which they readily rendered to me during my inspection.

J. SPENCER LOW.



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