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Glamorgan (Wales). County Council. nb2014013905

Publication/Creation

1896

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GLAMORGAN COUNTY COUNCIL.

ANNUAL REPORT

OF THE

COUNTY MEDICAL OFFICER,

W. WILLIAMS, M.A., M.D., D.P.H., (Oxon.,)

FOR THE YEAR 1896.

CARDIFF:

WILLIAM LEWIS, PRINTER AND STATIONER, DUKE STREET.

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1897.

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Glamorgan County Council.

To the Chairman and Members of the Sanitary Committee.

GENTLEMEN,

I have the honour to present to you my Fifth Annual Report on the health and sanitary condition of the Administrative County for 1896, together with a Summary of the Reports of the District Medical Officers of Health. It is compiled on the same general plan as former Reports.

The number and area of the Sanitary Districts remain the same as at the end of 1895, and the only changes among the Medical Officers of Health were in Ystradyfodwg and Llantrisant and Llantwit Fardre Districts: over the former Dr. W. W. David was appointed temporarily in the place of Dr. James, who died; and over the latter Dr. W. N. Davies in place of Dr. D. W. Davies, who resigned.

The County boundary is only overlapped in the case of Neath Rural District, which extends into Breconshire and includes the parish of Ystradfellte. It is very desirable that the Medical Officer of Health for this area should furnish your Committee with statistics and other particulars for that portion of his district which is situated in Glamorganshire.

The locality known as Gilfach Goch is still included in three Sanitary Districts, and here some re-adjustment of boundaries is desirable.

Reports have been received from all the Medical Officers of Health in the Administrative County, but though many of them were sent in before the end of March, several arrived later, and two on the 6th of May. There has been, in consequence, a considerable delay in issuing this Report; for it is impossible to make any County calculations until the reports from *all* districts are received.

This year all reports except six are printed and presented in book or pamphlet form. Although greater care has been bestowed upon them, a greater uniformity in the plan of their preparation is still desirable, and I would again suggest that:—

- (1) *All* reports be printed in demy octavo, *i.e.*, 8½ by 5½ inches.
- (2) *All* reports be prepared after the plan made use of in the local summaries.
- (3) Tables A, B and C be printed and appended.

My object in repeating this request is to enable your Committee to have each set of Annual Reports bound together so as to be convenient for reference whenever required. The following is a list of the District Councils that did not consider it worth their while to print their Medical Officers' Reports, *viz.*:—*Aberavon, Caerphilly, Glyncorwg, Neath Borough, Porthcawl, and Llantrisant and Llantwit Fardre.* By the publication of Health Reports, there is more likelihood of interest regarding sanitary questions being aroused in districts, and the efforts of the officials to carry out improvements will likewise gain additional support.

The Infectious Disease (Notification) Act, has been adopted in all the districts except *Aberdare*, representing a population of some 44,000. At the end of 1892 there were eight districts where the notification of infectious disease was not compulsory. It is generally recognised that a knowledge of the existence of infectious disease is absolutely essential to Sanitary Authorities before they can perform their work efficiently.

I take this opportunity of thanking the Medical Officers of Health for their cordial co-operation in furnishing me regularly with weekly returns of cases of infectious sickness which are notified in their districts. Printed summaries of these were issued on Mondays, and sent to each district Medical Officer of Health, the Local Government Board, and the two County Boroughs, and I am told that they were found *specially* useful during the outbreak of Small Pox.

From time to time during the last four years, representations with respect to 12 defaulting Authorities have been made by your Committee to the Local Government Board, and in every instance where Medical Inspectors from the Central Authority were directed to make investigations into the causes of the complaints, the results have been most satisfactory. During the year two Orders made by the County Council under the Isolation Hospitals Act, were appealed against. Inquiries were held by the Local Government Board, and in each instance the decision of the Isolation Hospitals Committee was upheld.

The general progress made during the year has been very satisfactory, and your intervention has for some time been productive of good results. I would specially mention the progress made towards providing Isolation Hospitals. Local Authorities are becoming, year by year, more alive to their manifold responsibilities as custodians of the public health; but there are, however, several matters requiring more attention at their hands, such as—

- (1) The more strict enforcement of building bye-laws, and the necessity of not allowing new houses to be occupied until they are certified to be, *in every respect*, fit for human habitation.
- (2) The discontinuance of the objectionable and harmful practice of allowing *house refuse* to be used for making mortar for building purposes.
- (3) The systematic house-to-house inspection of each District at frequent intervals.
- (4) The inspection of Schools at least once a quarter.
- (5) More attention to the inspection of articles of food and drink, especially meat, fish, and milk. Also the inspection of milch cows and byres, and the framing and enforcement of regulations made under the Dairies, Cowsheds, and Milkshops Order.
- (6) More attention to the provisions of the Factory and Workshops Act, 1895.

Particulars of my visits of inquiry and inspection of the various Districts, *all* of which were inspected and reported upon during the year, and necessitating on an average 5 to 6 visits to each, have already been given in my Quarterly Reports.

In conclusion, I beg once more to tender my best thanks for the courtesy and consideration with which you have invariably received and acted upon my recommendations.

I remain, Gentlemen,

Your obedient servant,

WILLIAM WILLIAMS.

PENARTH,

5th June, 1897.

PART I.

THE ADMINISTRATIVE COUNTY.

STATISTICS.

AREA AND POPULATION.

There has been no change in the area of the Administrative County during 1896. All the Sanitary Districts also remain the same in area and number as they were at the end of 1895, viz:—19 Urban and 9 Rural, Districts. At mid-year 1896, the estimated aggregate population according to the calculations of the Local Medical Officers of Health was 575,669. This is made up of 427,905 persons living in Urban, and 147,764 in Rural Districts, shewing an increase on the Census (1891) enumeration, and on the 1895 estimation, of 107,715 and 14,183, or 23·02 and 2·5 per cent., respectively, thus—

Population in 1891, 1895, and 1896.

DISTRICTS.				Census, 1891.	Estimated, 1895.	Estimated 1896.	Increase on 1891.	Increase on 1895.
Urban	...	...	...	} 467,954	416,863	427,905	} 107,715	11,042
Rural	...	...	...		144,623	147,764		3,141
Administrative County ...				467,954	561,486	575,669	107,715	14,183

The only Districts where a decrease of the population is reported, are Cowbridge and Penybont Rural. Those of Briton Ferry, Penarth, Porthcawl, and Neath (Rural), have remained stationery, whereas the increase has been most marked in Barry and Mountain Ash.

The estimated population of each District is given in Table I. (Appendix).

At Barry an enumeration was made, but in the majority of the Reports, the population is estimated by multiplying the number of occupied houses by the average number of persons occupying each house at the last census, and such a method would give results nearer the truth than any other for a County like Glamorgan, where it is common to find large towns in localities, where a few years ago there was scarcely a house. The following figures shew the population of the whole County at each successive census since 1801 :—

The total population in 1801 was	70,879
„ „ „ 1811 „	85,069
„ „ „ 1821 „	120,073
„ „ „ 1831 „	126,612
„ „ „ 1841 „	171,188
„ „ „ 1851 „	231,849
„ „ „ 1861 „	317,752
„ „ „ 1871 „	397,859
„ „ „ 1881 „	511,433
„ „ „ 1891 „	687,218

BIRTHS.

The number of births registered was 20,342, as compared with 20,238 in 1895, and were in the proportion of 35·3 per 1,000 persons living. Of these 15,309 were in Urban, and 5,033 in Rural Districts, giving a birth-rate for the former of 35·3, and for the latter of 34·01. The local rates are given in Table I. (Appendix), but the information as to sexes is incomplete in the Aberdare, Briton Ferry, Neath (Borough), and Ystradyfodwg Reports. They vary from 44·7 to 22·5, the highest records being 44·7 in Barry, 42·54 in Glyncoiwg, 40·2 in Mountain Ash, while the lowest were 22·5 in Cowbridge (Borough), 24·4 in Porthcawl, 24·5 in Gower, 26·0 in Oystermouth, 28·02 in Caerphilly, and 28·8 in Bridgend.

As in previous years the County birth-rate is much in excess of that for England and Wales. In the following Table are given the comparative figures for the County, and England and Wales, for the 5 years 1892-96 :—

YEAR.	Birth-rate per 1,000 population.					
	Glamorganshire.			England and Wales.		
	General	Urban.	Rural.	General.	Town Districts.	Country Districts.
1892	35·5	36·8	34·2	30·5	31·9	30·5
1893	35·7	34·8	37·9	30·8	31·9	30·2
1894	33·5	33·7	33·3	29·6	30·6	28·8
1895	35·6	36·4	34·9	30·3	31·2	29·5
1896	35·3	35·3	34·01	29·7	30·1	29·1

DEATHS.

The number of registered deaths was 9,791, or more by 1,452 than in 1895. Of these 7,483 occurred in the Urban and 2,308 in the Rural Districts, giving death-rates of 17·4 and 15·6 respectively. This is equivalent to the very low *County death rate* of 17·00, which is less by 2·6 per 1,000 than in 1895, and lower by 0·1 than the corresponding death-rate for England and Wales. The death-rates range from 20·36 to 9·9, a difference of 10·3. The highest rates recorded are 20·6 for Aberdare, and 20 for Merthyr, while the lowest are 9·9 for Oystermouth, 10·8 for Penarth, 11·5 for Gower, and 12·9 for Pontardawe (East Division).

Local figures and rates are given in Table I., where notice is taken of the deaths which occurred in Union Workhouses and the County Asylum, of persons not belonging to the Districts where these are situated.

Particulars as to sexes are omitted in the Aberavon, Aberdare, Ogmores and Garw, Maesteg, Margam, Mountain Ash, Neath Borough, and Ystradyfodwg Reports.

In the following Table are given comparative figures for the County, and England and Wales, for the five years 1892-96.

YEAR.	Death-rate per 1,000 Population.					
	Glamorganshire.			England and Wales.		
	General.	Urban.	Rural.	General.	Town Districts.	Country Districts.
1892	17·1	18·0	16·2	19·0	19·5	18·1
1893	19·1	19·2	19·0	19·4	20·2	17·4
1894	16·9	16·8	17·1	16·6	17·1	15·6
1895	19·6	20·1	19·1	18·7	19·5	15·5
1896	17·0	17·4	15·6	17·1	18·0	15·3

Of the total deaths registered, 3,677 were those of children under one year of age. This is equivalent to 37·5 per cent. of the total deaths, and to a death-rate of 6·4 per 1,000 persons.

I regret that particulars of the mortality and rate of mortality at different ages cannot be given, because this information is omitted from one of the local reports.

Many conditions combine to influence the death-rate besides those of the salubrity and sanitation of a district. Amongst others the birth-rate exerts an influence which is frequently overlooked. In the majority of districts in this County extensive mining and manufacturing operations are carried on, and the population consists chiefly of comparatively young adults or persons below middle age, with, as a natural accompaniment, a large number of children. Then, since the death-rate among children under 5 years of age is far higher than during any subsequent period (up to 65), and since the death-rate for persons between 15 and 50 or 55 is lower than the death-rate at all ages, it follows that where there is a large percentage of children in proportion to the whole population, the death-rate will necessarily be higher than in a district or county where the population is mainly made up of persons of early and advanced middle life.

The truth of the above statement is well exemplified in this County, and on referring to Table I. it will be observed how widely different are the birth and death-rates of the various localities.

INFANT MORTALITY.

A ready method of estimating the relative prevalence of infant mortality is by calculating the proportion of deaths under one year of age to each 1000 of births registered.

Of every 1,000 children born, 180·7 died before completing the first year of life. In 1895 the infant mortality rate was 201, so there has been some improvement.

In the following Table are given the comparative figures for the County, and England and Wales, for the five years 1892-96.

YEAR.	Deaths in Children under 1 year per 1,000 births registered.					
	Glamorganshire.			England and Wales.		
	General.	Urban.	Rural.	General	Town Districts.	Country Districts.
1892	150·4	168·6	132·2	148	164	139
1893	155·1	168·4	135·0	159	181	148
1894	168·1	174·7	149·9	137	150	124
1895	201·0	217·1	151·1	161	180	142
1896	180·7	189·0	133·3	148	161	130·5

The infant mortality in each district is recorded in Table I. The local figures range from 32 to 220. The figures exceeded 200 per 1,000 registered births in Mountain Ash (220), Aberdare (219), and Merthyr (217). The lowest are recorded from Cowbridge (Borough) 32, Oystermouth 45, and Porthcawl 68.

There can be no doubt that many infants, who perish annually through neglect, ignorance, and carelessness, might be saved with proper care and attention, and here is another channel offered to technical instruction to disseminate most valuable and practical teaching upon the rearing and nursing and clothing of infants in health and disease, for it is only by educating the working classes in the broad principles of cleanliness, domestic hygiene, and by providing healthful homes and surroundings, that we can expect to reduce this appalling mortality amongst infants.

The prevention of this maintained high mortality, and the way it can be controlled by influences, both moral and hygienic, deserves special attention at the hands of Central and Local Sanitary Authorities. Lessons and practical demonstrations on the care and management of children, by properly qualified teachers, who should themselves be mothers, might be arranged in various centres by the County Council.

It should always be remembered that—

1. Every healthy mother who can, should nourish her own child.

2. When this is impossible, until the child has teeth, it should be fed on milk (previously boiled to prevent its conveying the germs of tuberculosis), and diluted with barley water.
3. The feeding bottle, the child, its clothes, the house (especially the bedroom), and all in it, should be kept scrupulously clean.

Table I. shows that this mortality is most marked in our densely populated mining districts, where the house atmosphere is vitiated through overcrowding, and where the milk is frequently poor in quality, and in quantity altogether inadequate for infant life. It is still the idea among a numerous class that a child should, as soon as it is able, take any kind of food that is about. This kind of feeding, supplemented by sour tubes, dirty feeding bottles, and exposure to draughts in an overcrowded house, frequently produces wasting, diarrhœa, and chest affections, terminating in convulsions and death; the wailing of the suffering child being too frequently quieted by alcohol or some quack medicine containing opium.

ZYMOTIC DISEASES.

I would again point out that the seven principal zymotic diseases, according to the Registrar-General's Classification (which is adopted by the Local Government Board), are **Smallpox, Measles, Scarlet Fever, Diphtheria** (and Membranous Croup), "**Fever**" (including Typhus, Typhoid, and continued fever), **Whooping Cough** and **Diarrhœa**.

In several Reports this classification has not been adopted in calculating the zymotic death-rate. Some Medical Officers of Health do not include deaths from Croup and Diarrhœa, whereas deaths from Puerperal Fever, Erysipelas and Influenza are included. It is highly desirable that the zymotic death rate should be calculated on the deaths resulting from the above diseases, and in every Report where this was not the case I have taken the liberty of making the necessary corrections, otherwise the figures would have been to a great extent useless, and neither comparable with one another nor with those given in the returns of the Registrar-General.

The seven principal zymotic diseases caused 1,273 deaths, giving a death-rate 2·2 per thousand living, as compared with 1·81 for England and Wales. The deaths attributed to the several diseases are given in the accompanying Table :—

Districts.	Small Pox	Measles.	Scarlet Fever.	Diphtheria and Croup.	Whooping Cough.	Fever.	Diarrhœa.	Total.
Urban	4	89	91	202	174	80	413	1,053
Rural	4	16	17	51	45	23	64	220
Administrative County ...	8	105	108	253	219	103	477	1,273

The highest rates are recorded from Aberavon (4·21), Merthyr (3·7), and Ystradfydwg (3·3). At Cowbridge Borough the rate was *nil*, and low rates were recorded from Pontardawe (Western Division) (0·27), Gower (0·3), and Porthcawl (0·5).

Particulars as to local figures and rates are given in Tables I. and II.

In the following Table are given comparative figures for the County, and England and Wales :—

1896.	Death-rate per 1,000 Population.					
	Glamorganshire.			England and Wales.		
	General.	Urban.	Rural.	General.	Town Districts.	Country Districts.
Small Pox	0·012	0·006	0·006	0·02	0·12	0·00
Measles	0·149	0·15	0·029	0·56	0·64	0·43
Scarlet Fever	0·18	0·15	0·029	0·18	0·19	0·14
Diphtheria and Croup ...	0·43	0·35	0·089	0·29	0·25	0·23
Whooping Cough ...	0·38	0·302	0·08	0·41	0·43	0·30
Fever	0·18	0·139	0·39	0·17	0·20	0·14
Diarrhœa	0·83	0·71	0·11	0·55	0·68	0·36
Seven principal Zymotic Diseases	2·21	1·82	0·39	2·18	2·51	1·60

In the following Table comparative figures are given for the County, and England and Wales, for the five years 1892-96 :—

YEAR.	Death-rates from Zymotic Diseases per 1,000 Population.					
	Glamorganshire.			England and Wales.		
	General.	Urban.	Rural.	General.	Town Districts.	Country Districts.
1892	2·00	2·2	1·9	1·9	2·6	2·8
1893	2·32	2·56	2·07	2·47	3·2	3·1
1894	1·30	1·20	1·40	1·72	2·2	2·2
1895	2·58	2·60	1·60	2·12	2·7	1·63
1896	2·21	1·82	0·39	2·18	2·51	1·60

SMALL POX.

This disease was notified as the cause of 69 cases of illness and 8 deaths, viz. :—Aberavon 4 cases and 1 death, Aberdare 1, Bridgend 21 cases and 1 death, Merthyr 10 cases and 1 death, Neath Borough 3, Oystermouth 6, Pontypridd 5 and 1 death, Llangyfelach 2, Neath Rural 7 and 4 deaths, Penybont 1, and Pontardawe 4.

Most of the cases were promptly isolated in hospitals, and in no instance, except at Bridgend which place was then unprovided with hospital accommodation, was there any alarming spread of the disease.

The influence of tramps and common lodging houses in the spread of the disease was again observed, especially at Aberavon, Merthyr, and Neath.

Particulars of the local outbreaks are given in the various summaries. The Medical Officer of Health for Aberavon writes:—"Since the erection of the Isolation Hospital in 1895, we have had under treatment there 7 cases in all, and these represent 6 distinct and separate outbreaks of the disease. Our hospital is not fair to look upon nor is its site the most admirable one in the district, and it is not too luxuriously furnished; but I maintain that in spite of its drawbacks it has saved the ratepayers many hundreds of pounds, and it has fulfilled what was required of it, viz., to afford efficient isolation for cases of Small Pox at a moderate cost."

The expenditure attending the Bridgend outbreak—erection of hospital, maintenance, &c., &c.—amounted to £1,123 12s. 6d., equal to a rate of 1s. 3d. in the £. The report of the Medical Officer of Health on the outbreak is very interesting and instructive.

Vaccination returns as made by the Vaccination Officers are only given for Merthyr and Llandilo-Talybont. In the former district the proportion of infants vaccinated to the total born was 93 per cent. In the latter out of 538 infants whose births were registered, 465 were successfully vaccinated, 57 died unvaccinated, the vaccination of 8 was postponed on Medical certificate, 3 had removed to places unknown, and 2 not accounted for, so that (including postponements and removals) 4·4 per cent. were unaccounted for.

The prevalence of the disease was most marked in the first quarter, when 46 cases were notified. The remainder of the cases occurred in the second quarter. During the third and fourth quarters no cases were notified.

MEASLES.

Measles is scheduled among the notifiable diseases in the Neath districts only, and consequently there is no information as to the amount of sickness occasioned by it. It occasioned 105 deaths, equivalent to a County rate of 0·18. In the previous year there were 365 deaths recorded from this disease, corresponding to a County rate of 0·6. The rate for England and Wales was 0·56. In no district was the death-rate above 1·0.

At Aberavon, Measles was epidemic in March, April, and May. 327 cases were notified in Neath Urban, and 30 in Neath Rural Districts.

It was epidemic for a few weeks at the village of Newton (Porthcawl), and in several localities in Llandaff and Dinas Powis District. The Elementary Schools were closed at Aberavon, Newton (Porthcawl), and Pendoylan, Peterston-super-Ely, and Rudry (Llandaff and Dinas Powis).

It is a common belief that Measles is a simple ailment peculiar to children, comparatively free from risks and seldom followed by fatal results. This is a very erroneous idea; the annual rate of mortality is very considerable, and its complications and sequelæ are often times most disastrous.

It appears from Dr. Thomson's Report to the Local Government Board published last year that "The death-rates from most of the diseases of the zymotic class have continuously decreased decade by decade, whereas that from Measles has undergone no diminution. Measles has, indeed, except during the last few years, exhibited a general tendency to increase, and even during the quinquennium 1890-94, the death-rate

from this disease now stands at a figure higher than that for any other disease of the zymotic class, except Whooping Cough and Diarrhœa. The sum total of the deaths registered as due to Measles in England and Wales during the 10 years 1885-94, reached no less than 129,496; or a yearly mean of 12,950."

Much can be done whereby the extension of Measles throughout the invaded district may be checked, by measures such as :—

- (1) Information furnished by Sanitary Authorities to School Authorities (and *vice versa*), regarding the occurrence of Measles.
- (2) Exclusion from School of members of households invaded by Measles ; and
- (3) Judicious School Closure.

SCARLET FEVER.

This disease contributed 3,781 cases of illness and 108 deaths, as compared with 2,760 cases and 82 deaths in the previous year. This corresponds to a County rate of 0·18—0·15 in the Urban, and 0·03 in the Rural Districts. In England and Wales the death-rate was the same as in this County. In the following Table are given comparative figures for the County, and England and Wales, for the five years 1892-96 :—

YEAR.	Death-rate per 1,000 Population.			
	Glamorganshire.			England and Wales.
	General.	Urban.	Rural.	
1892	0·5	0·6	0·3	0·19
1893	0·2	0·2	0·2	0·23
1894	0·1	0·09	0·12	0·16
1895	0·14	0·15	0·13	0·14
1896	0·18	0·15	0·03	0·18

The mild nature of the disease is shewn by the fact that only 2·8 per cent. of the cases were fatal. Cases occurred in every district, and the most important factor in its spread was the mildness of the attacks—frequently allowing cases to go unrecognised. The death-rate did not exceed 0·45 in any district—the highest were attained in Maesteg (0·45), Ystradyfodwg (0·36), and Neath Rural (0·3). The disease was most prevalent in the fourth quarter, the second coming next.

From the fact that only 20 cases were treated in hospitals in the whole County, it appears that they are but seldom used for this purpose, and so long as this inactivity continues among Sanitary Authorities whose districts are provided with isolation accommodation, one cannot expect the disease to be kept under control.

The disease was epidemic at Aberavon, Barry, Caerphilly, Llantrisant and Llantwit Fardre; prevalent at Middleton (Gower), Cymmer (Glyncorwg), and in various localities in the Llandaff and Dinas Powis District.

The influence in spreading the fever, of schools, promiscuous visiting, absence of and carelessness about isolation accommodation, is mentioned in many of the reports. Schools were closed at Aberavon, Middleton (Gower), Cwmgors (Pontardawe), and other places.

What renders the disease so difficult to control is the occurrence of so many mild cases where medical attendance is not sought even if its nature is recognised by the parents.

When properly equipped and comfortable hospitals are provided, the repugnance now evinced by many parents against sending their children to hospitals would soon die away. If the first few cases in a district were isolated, and the disinfection of the house and clothing were undertaken by the Inspector, the spread of the disease could be kept under control.

DIPHTHERIA AND MEMBRANOUS CROUP.

There were recorded 452 cases of Diphtheria and 105 deaths; 148 cases of Membranous Croup and 98 deaths—making a total of 600 cases and 203 deaths—corresponding to a death-rate of 0·39—0·26 for Urban, and 0·21 for Rural districts, and a case mortality of 33·4 per cent. of total number of cases. The rate for England and Wales was 0·29. The figures for 1895 were 390 cases, 220 deaths, death-rate 0·39 and a case mortality of 53·9.

In the following Table, comparative figures are given for the County, and England and Wales, for the four years, 1893-96 :—

YEARS.	Death-rate per 1,000 Population.			
	Glamorganshire.			England and Wales.
	General.	Urban.	Rural.	
1893	0·27	0·23	0·32	0·29
1894	0·24	0·24	0·24	0·28
1895	0·39	0·27	0·30	0·25
1896	0·39	0·26	0·21	0·29

The greatest prevalence of Diphtheria was observed in the first and last quarters, and of Croup in the fourth and second quarters. The highest death-rates were reached in Llantrisant and Llantwit Fardre (1·3), Aberdare (0·9), and Merthyr (0·7).

In seven districts not a single case was notified, viz. :—Bridgend, Cowbridge, Glyncorwg, Maesteg, Porthcawl, Llangyfelach Division, and Pontardawe (West), and in several others very few occurred.

It is stated that serum antitoxin was used with very considerable success in several districts. At Aberavon the outbreak was mostly confined to the undrained portion of the town, and to overcrowded dwellings with damp sub-soil. Many of the reports throw no light on the etiology of the disease, but where the cause is sought after, there is evidence to show that dampness of soil, insanitary conditions generally—such as defective drains allowing the escape of sewer gases—were usually closely associated with the cases.

WHOOPIING COUGH.

Whooping Cough is not scheduled amongst the notifiable diseases, except in Llandaff and Dinas Powis, where 274 cases occurred, and, consequently, the extent of its ravages can only be measured by its death roll. Through it 219 deaths were caused—174 in Urban, and 45 in Rural districts—corresponding to a County rate of 0·38 as compared with 0·37 and 0·39 in 1895 and 1894 respectively. In the following Table, corresponding figures are given for the past four years:—

WHOOPIING COUGH.					1893.	1894.	1895.	1896.
Urban.	{	Deaths ...	...	...	86	94	164	174
	{	Death-rate	...	...	0·23	0·37	0·39	0·4
Rural.	{	Deaths ...	...	...	14	76	44	45
	{	Death-rate	...	...	0·09	0·39	0·30	0·3

Besides giving the number of deaths caused by Whooping Cough, in most of the reports there is no other information. It appears to have been prevalent in Caerphilly, Pontypridd, and in some localities in the Llandaff and Dinas Powis Districts. The highest death-rates are recorded from Pontypridd (1·1), Merthyr (0·9), and Llandaff and Dinas Powis (0·8).

From a public health point of view, Whooping Cough is a most difficult disease to deal with. Its onset is insidious, and the symptoms of the catarrhal stage are *not* characteristic. Very little is anywhere attempted to prevent its spread, and in only one district in this County is it notifiable; still its infectiousness is beyond a doubt, and the necessity of preventing children mixing with their fellows and attending school is obvious. I would point out that last year in the County of Glamorgan it caused more deaths than any other infectious disease (219). Besides this large direct mortality, it is also the cause of a considerable indirect mortality annually, leaving the child an easy prey, especially to lung troubles and phthisis. This mortality could be much reduced if the disease was regarded more seriously by parents, and the patients more carefully nursed.

FEVERS.

In Tables A and B of the Local Government Board the term "Fevers" appears at the head of five columns, the sub-headings being "Typhus," "Enteric or Typhoid," "Continued," "Relapsing," and "Puerperal." To these diseases were attributed 150 deaths—99 from Enteric, 4 from Continued, and 47 from Puerperal Fevers. This is equivalent to a County rate of 0·26—0·28 for Urban, and 0·20 for Rural districts. The rate for England and Wales was 0·17.

It is gratifying to find that "Typhus Fever," which a generation ago was so prevalent wherever overcrowding and filth were associated, has not occurred in the County for some years.

TYPHOID OR ENTERIC FEVER.

It is with great satisfaction that I am able, for the second year, notwithstanding the increase in the population, to call attention to the diminished incidence and mortality from this disease, whose presence is, as a rule, intimately associated with insanitary conditions.

There were 665 cases notified, and 99 deaths attributed to this cause, as compared with 748 cases and 105 deaths in 1895. This corresponds to a County rate of 0·17—0·17 in Urban, and 0·16 in Rural districts—as compared with 0·18 and 0·19 in 1895 and 1894 respectively. The greatest incidence was during the third quarter, and the maximum prevalence was reached in August.

The highest rates are recorded from Merthyr (0·31), Llandilo-Talybont Division (0·24), and Ystradyfodwg (0·23).

In the local summaries I have quoted rather fully from the remarks of those Medical Officers of Health who discuss the causes operating in their districts to produce this fever, and it is therefore unnecessary to do so here except very briefly.

153 cases were notified in Ystradyfodwg, 187 in Merthyr, 47 in Llandilo-Talybont Division, and 35 in the Neath Rural district.

At Aberavon three cases were associated with insanitary surroundings.

Of the 23 cases at Bridgend, 12 occurred in houses where no obvious sanitary defects were noticeable; the other cases were associated with choked drains, untrapped drains, dirty surroundings, dirty back yards, &c.

Nearly all the cases of the Ogmore Ward occurred at Tynewydd, in the same streets as in previous years, and Dr. Thomas is of opinion that the water supply somehow or other becomes contaminated.

52 cases occurred in Dowlais, there being many in the district of Cwmrhydybedd, and Dr. Dyke attributes them to "sewer gases."

35 cases were notified in the Neath Rural District, and are attributed to "impure water and sanitary defects."

The notable outbreak of the year occurred in Llandilo-Talybont Division, and from personal knowledge of all the districts in the County, I should say that this, together with the Penybont district, are the most unsatisfactory of all districts as regards water supply. The number of cases was 47, and the deaths 5.

Dr. Mitchell's special report on the outbreak concludes thus:—"Improvement of the water supply is a pressing necessity in this Division, and many schemes have been lately discussed. It is not for me to state which of these ought to be adopted, but I beg to state that in my opinion a general large scheme for the supply of the whole district will be much preferable to a number of small ones."

There has been, however, no appreciable improvement in the supply of the localities where it is most inadequate.

In the following Table corresponding figures are given for the past four years 1893-96:—

ENTERIC FEVER.					1893.	1894.	1895.	1896.
Urban.	Deaths ...	...	...	...	177	75	74	76
	Death-rate ...	...	...	...	0·47	0·19	0·18	0·17
Rural.	Deaths ...	...	...	...	17	30	31	23
	Death-rate ...	...	...	...	0·12	0·19	0·17	0·16

PUERPERAL FEVER.

The number of cases notified was 81, and the number of deaths 47, giving a case-mortality of 58·0 per cent., and a death-rate of 2·3 per 1,000 registered births. In the following Table are given corresponding figures for the four years 1893-96:—

PUERPERAL FEVER.					1893.	1894.	1895.	1896.
Cases ...	...	...	...	...	92	76	68	81
Deaths ...	...	...	...	...	67	41	38	47
Case-mortality ...	...	...	...	...	72·0	58·9	55·8	58·0
Death-rate ...	...	...	...	...	3·34	2·25	1·8	2·3

As in former Reports I have given this subject special attention, I do not intend to do so on this occasion.

DIARRHŒA.

Diarrhœa is not a notifiable disease, and the extent of its ravages can only be measured by its death roll. It was credited with 477 deaths, giving a rate of 0·82 for the County—0·96 for Urban, and 0·43 for Rural districts. The diarrhœal rate for England and Wales was 0·55. For the 33 great towns the rate was 0·79, so that the County rate is 0·03 per 1,000 in excess of this. The following Table gives the diarrhœal death-rate since 1893:—

DIARRHŒA.					1893.	1894.	1895.	1896.
Urban Districts ...	...	...	...	...	0·94	0·43	0·84	0·96
Rural Districts ...	...	...	...	...	0·68	0·09	0·34	0·43
Administrative County ...	...	...	...	...	0·81	0·33	0·72	0·82
England and Wales ...	...	...	...	...	0·99	0·35	0·88	0·55
33 great Towns ...	...	...	...	...	1·22	0·50	1·19	0·79

Diarrhœa is very variable as regards its prevalence, and is intimately associated with the temperature in the summer months. It is essentially an infantile affection, and apart from climatic conditions, *insanitary surroundings, overcrowding, injudicious feeding, and maternal neglect* are the most important predisposing causes of this disease, which is so fatal amongst infants. It is especially a disease of hand-fed infants.

The districts with the highest rates were Aberavon (1·8), Merthyr (1·7), Ystradyfodwg (1·2), and Gelligaer and Rhigos (1·2). No deaths occurred at Cowbridge, Porthcawl, Gower, Llangyfelach Division, Penybont and Pontardawe.

This continued high mortality from diarrhœa—a disease largely preventable—is certain evidence that more attention should be paid to the nursing, rearing and feeding of infants, and especially to the milk supplies (see Dairies, Cowsheds and Milkshops).

ERYSIPELAS.

437 cases and 15 deaths (·025 per 1,000) are ascribed to Erysipelas, as compared with 439 cases and 22 deaths (0·39) in 1895. The highest number of notifications were, in Merthyr, 92; Barry, 83; and Cowbridge (rural), 18.

The notification of Erysipelas is important in connection with nurses, midwives, and others coming into contact with parturient women and surgical cases. The probable connection between Erysipelas and Puerperal Fever should not be lost sight of. It is generally associated with insanitary surroundings, and any premises in which the disease appears should be carefully examined.

RHEUMATIC FEVER.

There were 21 cases ascribed to this disease, equal to a County rate of (0·03) as compared with 49 deaths, and a death-rate of 0·08 in 1895.

PHTHISIS.

The deaths registered from Phthisis numbered 603—431 in Urban, and 172 in Rural districts. This gives a County rate of 1·02. The highest rates are recorded from Gelligaer and Rhigos (2·0), and Pontardawe (West) (1·9). The infectiousness of Phthisis is recognised in many districts, and isolation is attempted, sputum disinfected, and all rags used as handkerchiefs immediately burnt at Margam and Pontardawe (West). Preventive measures are not seriously adopted by the Authorities generally.

A great deal can be done by Sanitary Authorities towards reducing the mortality from this disease by improving the quality of articles of food and drink (especially milk), by enforcing building bye-laws (which is not done in several districts) so as to prevent the erection of damp houses on damp soils, by keeping a vigilant watch against overcrowding, and by giving directions, whenever possible, for the disinfection of the expectoration of patients suffering from the disease.

RESPIRATORY DISEASES.

This group of diseases, comprising Bronchitis, Pneumonia and Pleurisy, contributed 1,832 deaths, or more than one-fifth of the total mortality. This corresponds to a death-rate of 3·18 per 1,000, against 4·1 and 3·15 in 1895 and 1894 respectively. The highest rates are Penybont (5·0), Gelligaer and Rhigos (4·0), Pontardawe West (3·8), and Merthyr (3·8). [Table I., Appendix.]

The deaths occasioned by "Heart Disease" and "Injuries" are not given in several of the local Reports, and consequently the total deaths and death-rate under these headings cannot be accurately given. [Table II., Appendix.]

ADMINISTRATION.

ADOPTIVE ACTS.

The Infectious Disease (Notification) Act, 1889.

Aberdare is the only District in the County where this Act has not been adopted, and so far all efforts have failed to induce this Council to avail themselves of its valuable provisions.

The Infectious Disease (Prevention) Act, 1890.

The adoption of this Act confers many important powers on Sanitary Authorities without much extra cost. It would be well to enumerate its most important provisions.

It empowers any Justice of the Peace acting in and for the district, upon proper cause being shewn to him, to order any infected person without proper lodgings to be detained in a hospital for infectious diseases until free from infection.

It gives increased power over the inspection of dairies, milk supplies, the cleansing and disinfection of premises, bedding, and public conveyances used for carrying infected corpses.

It prohibits :—

- (a) Persons ceasing to occupy infected houses without previous disinfection or giving notice to owner.
- (b) The retention for more than 48 hours of the body of any person who has died of any infectious disease elsewhere than in a public mortuary, or in a room not used at the time as a dwelling place, sleeping place, or as a workroom.
- (c) The removal of bodies of persons dying of infectious disease, except for burial.
- (d) The throwing of infectious rubbish into ashpits, and

It provides for the free temporary shelter with attendance for the members of any infected family who have been compelled to leave their dwellings for the purpose of enabling such premises to be disinfected by the local authority.

The Public Health Acts (Amendment) Act, 1890.

This Act empowers Local Authorities to make bye-laws with respect to—

- (a) The keeping of water-closets supplied with sufficient water for flushing.
- (b) The structure of floors, hearths and staircases, and the height of the rooms intended for human habitation.
- (c) The paving of yards and open spaces in connection with dwelling-houses.

- (d) The provision in connection with the laying out of new streets, of secondary means of access where necessary for the purpose of the removal of house refuse, and other matters.
- (e) As to prescribing the time for the removal through streets of offensive matter, and as to the proper construction and covering of the vessels or carts employed.

It gives increased power with respect to—

- (a) The regulation of public sanitary conveniences used in common by occupants of two or more houses, or provided for factories or workshops.
- (b) Articles of food and slaughter-houses.

All articles of food may be seized and condemned, or condemned before seizure.

The occupier of a registered slaughter-house convicted for the sale of meat unfit for food, is liable to have his licence revoked.

It prohibits—

- (a) Rooms over privies, cesspools, ashpits, &c., to be used as dwelling or sleeping rooms.
- (b) The erection of new buildings on ground filled with offensive matters.

The position of the various districts with respect to the above Acts will be learnt on reference to Table III. at the end of the Report.

ISOLATION HOSPITALS.

In many previous reports—special, quarterly, and annual—I have referred fully to this question. In last year's Annual Report I enumerated the various steps taken by the Isolation Hospitals Committee, so as to put "The Isolation Hospitals Act, 1893," into operation. On referring to that report it will be seen what these several steps were, and it is useless to repeat them here; so on this occasion I propose to state briefly what has been done during the year, and what our present position is with respect to Isolation Hospitals.

During the year under review —

- (1) A Small Pox Hospital was provided at Bridgend.
- (2) The Pontypridd District Council acquired and equipped a suitable building for the isolation and treatment of Small Pox cases.
- (3) The Margam District Council have completed their Infectious Diseases Hospitals (see Summary).
- (4) The Cardiff and Barry Joint Hospital on the Flat Holms is ready for the reception of cases of Cholera and Bubonic Plague, should any be imported, and Dr. Bulstrode, one of the Medical Inspectors of the Local Government Board, recently visited the island, and approved of the arrangements which are in readiness.
- (5) A temporary building has been put up at Briton Ferry.

In my Special Report on Isolation Hospitals in the Administrative County of Glamorgan in 1895, it is stated that in *nine districts only* had isolation accommodation, of any kind, been then provided, viz.:—in *Aberavon, Aberdare, Barry, Merthyr, Mountain Ash, Neath, Ystradyfodwg* Urban Districts, and *Neath and Gelligaer and Rhigos* Rural Districts.

Since that time it has been decided to erect a new Hospital at Barry. The plans, &c., for a permanent building have been approved by the Local Government Board, and a loan of £6,000 granted, and the contract for erecting the building has been let.

A Disinfecting Apparatus has been provided and erected at the Mountain Ash Hospital.

The others remain in the same condition as are specified in the "Hospitals Report."

The Bridgend and Pontypridd Small Pox Buildings, together with the Margam, Briton Ferry, and the Cardiff and Barry Hospitals (as above enumerated) have since that time been provided.

Two Compulsory Orders have been made:—

The *first* constituting *Pontardawe* a "Hospital District," and confirmed 19th September, 1895, and

The *second* constituting the "Bridgend Joint Hospital District," and confirmed 6th December, 1895. The Authorities included are the *Bridgend, Porthcawl, and Cowbridge* (Urban), and *Penybont and Cowbridge* (Rural) District Councils.

The Pontardawe District Council did not assent to their district being formed into a Hospital District, and have, *unsuccessfully*, appealed to the Local Government Board against the Order of the County Council.

The *third* Order constituting the district of *Llangyfelach* a "Hospital District" is about to be made.

With respect to the remaining sanitary districts in the County, viz.:—*Caerphilly, Ogmore and Garw, Glyncorwg, Maesteg, Oystermouth, Penarth, Pontypridd, Gower, Llandaff and Dinas Powis, and Llantrisant and Llantwit Fardre*; they are situated as described below.

Caerphilly.—The Council have been negotiating with several owners of property as to a site, but so far none has been secured.

Ogmore and Garw.—Plans, &c., approved and site purchased. The work has not been commenced.

Glyncorwg.—The Surveyor has been instructed to prepare plans, &c., for a permanent building, and to invite tenders.

Maesteg.—No site has been secured, and no definite steps taken.

Oystermouth.—Nothing has been done here, and the District Council consider that their present arrangements with the Swansea Corporation meet the requirements of the district.

Penarth.—No definite steps have been taken.

Pontypridd.—At a meeting held on the 6th May, 1897, it was *resolved*—That pursuant to the recommendation of the Committee, the Council agree to purchase one acre and a quarter of land for £400 upon certain conditions.

Gower.—A site has been selected and plans submitted.

Llandaff and Dinas Powis.—No definite steps have been taken.

Llantrisant and Llantwit Fardre.—A site has been secured and the Surveyor is engaged upon the plans, &c.

There is, therefore, every prospect of every district (except possibly the Boroughs of Neath and Aberavon) in the County being supplied with adequate isolation accommodation in the near future. This means over a dozen additional Hospitals, and I trust that your Committee will never have cause to regret the action they have taken in putting the Isolation Hospitals Act into operation.

Some of our older Isolation Hospitals are not adequate to meet the requirements of the districts in which they are situated, and it is to be hoped that these will soon be taken in hand by the Isolation Hospitals Committee.

The references made in the Reports to Isolation Hospitals are mentioned in the local summaries.

DISINFECTION.

I have dealt so fully with the importance of the disinfection of *houses, articles of bedding, clothing, persons, &c.*, in my Annual Report for 1894, that on this occasion it is unnecessary to do so again. During the past year several disinfecting apparatus and ambulances have been provided, viz. :—

Ambulance for Barry.

Disinfecting apparatus for the Bridgend Small Pox Hospital.

Ambulance and disinfecting apparatus for the Margam Hospitals.

Disinfecting apparatus for the Mountain Ash Hospital.

Disinfecting apparatus for the Neath Rural Hospital.

WATER SUPPLY.

Considerable attention has been paid to defective water supplies, and the following improvements are reported to have been effected :—

<i>Districts.</i>		<i>Improvements effected or undertaken.</i>
ABERDARE	...	Nantymelyn Reservoir, with a storage capacity of over 50 million gallons, is still in course of construction, and when completed there will be a supply for 180 days.
CAERPHILLY	...	At Pwllypant £7 was expended in piping the water from a spring to the side of the main road. The Council lately unsuccessfully promoted a Bill in Parliament for providing all the populous centres of their district with water, except the Taffs Well Ward.
COWBRIDGE	...	The advice of an expert Water Engineer has been sought, and several schemes are under consideration.

GARW AND OGMORE...	...	A supply for Glynogwr village.
GLYNCORWG	...	Plans, &c., for the supply of Cymmer, &c., completed. Application made for a loan, and a Local Government Board Inquiry held.
MAESTEG	...	A new scheme constructed for greater portion of the District.
MARGAM...	...	The whole of the District (with the exception of one or two out-lying localities) is now well supplied with water. That from Cwmgwyne fell short during the hot months owing to deficiency of Storage. Improvements enumerated in the local summary.
MERTHYR	...	The Council are constructing an impounding reservoir to contain about 350 million gallons. The water main from Neuadd reservoir to the Dulais filter-beds at Garth, and the main from Penbryn reservoir to the Merthyr filter-beds, have been scraped. Old mains renewed and additional mains laid in several places.
NEATH ...	...	A new storage reservoir is being constructed which is to contain a supply for 130 days.
OYSTERMOUTH	...	A second stream at Caswell Bay has been utilised. Mains extended to Chapel street and area around Langland.
PONTYPRIDD	...	A new storage reservoir above Maerdy is in course of construction.
PORTHCAWL	...	A supply provided from Ffynon Fawr, Nottage, to a portion of the town where the water had been cut off by the water company. Sinking operations are taking place in hope of providing a good and abundant supply for the whole district.
COWBRIDGE RURAL ...	...	Two new schemes formulated. Twelve wells rebuilt and five repaired, seventeen cleaned out and two pumps affixed. An expert's opinion has been taken as to water supply of Llantwit Major and Graig.
GELLIGAER AND RHIGOS	...	Extension at Fochriw, &c. Enumerated in the summary.
GOWER ...	...	Eight wells repaired, cleaned, &c., &c. Enumerated in the summary.
LLANDAFF AND DINAS POWIS	...	Cardiff water extended to Caerau and St. Fagans, extension at Radyr, and many other minor improvements.
LLANGYFELACH DIVISION	...	Extension of Mains at Birchgrove and Station Road. Public fountains at Waunforgan and Llansamlet Lower.
LLANDILO-TALYBONT DIVISION	...	Three new wells sunk at Gorseinon; tube well driven at Garnlas, Sketty; and three public fountains.
LLANTRISANT & LLANTWIT FARDRE.	...	Water mains for Cowbridge and Penygawsi roads and Pantequesta, and other improvements.
NEATH RURAL	...	A supply for Skewen.
PENYBONT	...	Eight wells protected from pollution.
PONTARDAWE (EAST)	...	Enumerated in summary.
PONTARDAWE (WEST)	...	Extensions at Pontardawe, Marchowel Springs, and Alltwen.

Typhoid fever was attributed to the drinking of polluted water at Tynewydd (Ogmore) Llanblethian (Cowbridge Rural), Llandilo-Talybont Division, and at Cornelly (Penybont).

Without an adequate supply of water, cleanliness of the person, clothes, house, and household utensils, is impossible. It should always be supplied on the constant system, but such is frequently not the case, and if there are leakages in the pipes, the insuction of sewage matter and gases is probable, and might lead to disastrous results.

The subjoined list furnishes the names of the localities where mention is made of the supplies being inadequate:—

<i>Districts.</i>	<i>Portions inadequately supplied.</i>
ABERAVON ...	The whole in dry weather.
ABERDARE ...	Until the reservoir is completed.
BRITON FERRY ...	Whole district in dry weather.
CAERPHILLY ...	Caerphilly, Nelson, Pwllypant and other places.
COWBRIDGE BOROUGH ...	Whole district.
GLYNCORWG ...	Cymmer and part of Abergwynfi.
NEATH BOROUGH ...	Scarce and intermittent in dry weather.
OYSTERMOUTH ...	Intermittent in dry seasons. A second or enlargement of present reservoir required.
PONTYPRIDD ...	Whole district in dry weather.
PORTHCAWL ...	Whole district.
YSTRADYFODWG ...	Whole district. The District Council have last year obtained an Act of Parliament to purchase the undertakings of the Company's Works and to construct an additional reservoir.
COWBRIDGE RURAL ...	Several villages (see summary).
GELLIGAER AND RHIGOS ...	Tirphil, Brithdir, Fochriw, Pentwyn and Trelewis. The supplies for Newtown Bute and Pontlottyn are still unprotected.
GOWER ...	Penclawdd, Dunvant, and Scurlege Castle.
LLANDAFF AND DINAS POWIS ...	Pentyrch, Rudry, and other parishes and districts.
LLANGYFELACH DIVISION ...	Caersalem, Cwmrhydycwrw, and Llansamlet Lower.
LLANDILO-TALYBONT DIVISION ...	Pontardulais, Gorseinon, Gowerton, and Mynydd-bach-y-glo, &c., &c.
NEATH RURAL ...	Cadoxton, Cimla, Cynant, and Aberdulais. There is also a scarcity at Glyn-neath.
PENYBONT ...	Bryncoch, Coity, St. Brides Major, Southerndown, Pencoed, Aberkenfig, Tondy, Cefn-Cribbwr and Kenfig Hill.
PONTARDAWE (WEST) ...	Glais, Pheasant Bush, and Swansea Road (a scheme is being formulated for the latter).

SEWERAGE AND SEWAGE DISPOSAL.

Works of sewerage and drainage have been carried out or undertaken in many districts of the County in 1896, *e.g.* at :—

<i>Districts.</i>	<i>Improvements effected.</i>
ABERAVON ...	... Sewers for Beach and Green Streets and Sandfields.
ABERDARE ...	... About 400 yards of new sewers constructed.
BARRY ...	... Storm overflows at Vere Street and Harbour Road. 6-inch ventilating shafts in various localities. The adoption of 30 existing manholes as flushing chambers. Extension of main sewers to allow of building operations.
BRIDGEND ...	... The sewerage of Caependre and the sewer connections of all the houses thereon. The sewerage of South and St. Marie Streets. The sewerage, &c., of the lane at back of Railway Inn. A Provisional Order also obtained. (See Penybont).
CAERPHILLY ...	... Eighty yards of sewer at Nelson and 250 at Senghenydd (here the main trunk is made to discharge into the river).
GARW AND OGMORE	... A Provisional Order obtained authorising the disposal of the sewage of the Ogmere and Garw Valleys, on land in the neighbourhood of Brynmenyn.
MAESTEG ...	... The construction of 510 yards of 9-inch sewer.
MARGAM ...	... The taking up and relaying of main sewer at back of Scutari, Taibach, and fixing traps and two gullies. New surface drain Cotton Row. The trapping of several sinks. Diversion of main sewer at Margam Terrace in consequence of new buildings. New gully for surface water at Oakwood. Retaining wall for the protection of sewer outfall, Taibach. Provision of Field's syphons on sewers at Groes, Margam.
MERTHYR ...	... Sewer extensions to Penheolgerrig Merthyr, and Ash road Troedyrhiw, Pant, Abercanaid, Upper Abercanaid and Aberfan.
MOUNTAIN ASH ...	... Sewer extension Penrhiwceiber Road.
NEATH BOROUGH ...	... The sewerage of Gnoll and Colliery Roads. The disused sewer in Water Street has been obliterated.
OYSTERMOUTH ...	... Extension of the sewer outfall completed.
PONTYPRIDD ...	... Completion of public sewers at Cilfynydd.
PORTHCAWL ...	... A complete system of sewerage is being constructed at present.
YSTRADYFODWG ...	... See list in district summary, too lengthy to be inserted here.
COWBRIDGE RURAL ...	... Extension of sewers at Dolau and River's Row.
GELLIGAER AND RHIGOS	... Extensions of sewers at Pontlottyn, Trelewis, Bedlinog and Brithdir.
LLANDAFF AND DINAS POWIS	... The sewerage of Llanishen undertaken and contract let.

*Districts.**Improvements effected.*

LLANGYFELACH DIVISION	...	The drainage of Midland Row completed.
NEATH RURAL	...	The sewerage of Skewen completed.
PENYBONT	...	Drainage re-constructed at Pencoed School.

Systems of sewers are urgently needed in several localities—*e.g.*

ABERAVON	...	Upper part of district.
BRIDGEND	...	The whole district—very urgent indeed.
CAERPHILLY	...	All the populous centres; pollution of rivers taking place in all quarters.
COWBRIDGE BOROUGH	...	Whole Town. River extensively polluted.
GARW AND OGMORE ..	...	Main sewer trunks needed in Garw and part of Ogmore Valley. Practically, all the sewage from that part of Gilfach Goch, situated in this district, is discharged to the river.
GLYNCORWG	...	Whole district. River is the main sewer. Some system of sewerage is to be adopted forthwith.
MAESTEG	...	Whole district. River is the main sewer.
MOUNTAIN ASH	..	That portion of district below Penrhiwceiber, such as Ynysboeth, Mathewstown and Abercynon.
OYSTERMOUTH	...	The drainage of Newton.
PORTHCAWL	...	A complete system of sewerage is being carried out.
YSTRADYFODWG	...	Several subsidiary sewers to be made.
COWBRIDGE RURAL	...	Several localities (see district summary).
GELLIGAER AND RHIGOS	...	Improvements to sewers at Pontlloftyn, Fochriw and elsewhere.
LLANDAFF AND DINAS POWIS	...	The drainage of Pontcanna, Fairwater Grove, North Road and Crwys Road, Llandaff.
LLANGYFELACH	...	The sewerage of Pontardulais, Gorseinon and other localities.
LLANTRISANT & LLANTWIT FARDRE	...	The sewerage of Edmundstown, Llantwit Villages and Tonyrefail (part of) and a few other small places.
NEATH RURAL	...	Cwmavon in particular. All the slop sewage discharged into the river, but the excrement disposed of in ash closets, &c.
PENYBONT	...	Aberkenfig and Tondy in particular. Here the river is the main sewer. A Provisional Order was lately obtained by this Council and the Bridgend Council authorising the formation of a joint sewerage district, to comprise the whole of Bridgend together with Aberkenfig, Tondy, Bryncoch and Bryncethin.
PONTARDAWE	...	Ystalyfera, Pontardawe, and Clydach.

SCAVENGING AND REFUSE DISPOSAL.

The above important subject is only referred to in a minority of the reports, or only incidentally mentioned.

In Table III. (Appendix) there is a special column devoted to Public Scavenging, which shows as far as I have ascertained the position of each district with regard to this duty.

During the year public scavenging has been adopted in several localities :—At Penclawdd (Gower) one of the road men has been appointed to superintend the regular emptying of privy pails and ashpits. Powers have been obtained to scavenge the whole district of Llandaff and Dinas Powis. At Penclawdd the scavenging is undertaken by the Council. The scavenging of the populous centres in Pontardawe, viz.:—Ystalyfera, l'ontardawe, and Clydach, has been undertaken with marked benefit, and the Medical Officer of Health for the Western Division writes :—"The removal of house refuse, &c., which is now being done daily at Pontardawe, Alltwen, and Clydach is a step in the right direction, and will in a very short time prove most beneficial to the general health of the district."

Refuse destructors are recommended by the Medical Officers of Health for *Garw and Ogmore, Margam, Penarth, Pontypridd, and Barry*. The disposal of house refuse in our deep, narrow mining valleys is one of the most important and most difficult problems that remain to be solved. The nuisances resulting from "tips" are well-known, and the Ystradfyodwg, Pontypridd and other authorities have oftentimes discussed the best means for the disposal of house refuse, but so far without any tangible result. Several Medical Officers of Health refer to the want of more systematic scavenging.

I have frequently remarked that nothing short of cremation can effectually cleanse the "refuse tips" of our narrow valleys. The accumulations are extremely filthy, but seldom disinfected, or fenced in. They can be seen and smelt from a distance, and are doubtless associated with the origin and spread of "filth fevers." The practice is still common in one or two districts of allowing unprincipled builders to use the screened refuse for making mortar for building purposes. The fencing in, and a little more care and vigilance on the part of Sanitary Authorities, will soon put an end to this filthy practice. All tips should be fenced in and occasionally disinfected.

At present there is not a Refuse Destructor in Glamorganshire, but we are likely to have one in the near future, for the Barry Council with the same energy and thoroughness that has hitherto characterised them in all sanitary matters, have already tackled the question. (See District Summary.)

It has been well said that "Dirt is matter in the wrong place." Inattention to the removal of refuse gives rise to a condition of uncleanness which exerts an influence prejudicial to the public health. Therefore no false economy or desire to keep down the rates, should prevent the necessary cleansing operations being efficiently performed. In non-scavenged districts where the atmosphere is contaminated by emanations from putrid solid and liquid refuse matter, and the soil and possibly the water, by soakage, the inhabitants suffer from various diseases which under other conditions are seldom observed. When no definite form of disease is apparent the inhabitants are sickly and debilitated, and more liable to fall a prey to epidemic or other disease. Provided organic matter is buried in the soil, the process of nitrification takes place, and the nitrates formed are absorbed by the roots of plants and no harm results, but this should not be attempted in populous localities.

The danger cannot be estimated by the degree of smell, for infective microbes may be present when the air is not the least odorous. The organisms do not diffuse like gases, they linger about their birth place in unscavenged courts and narrow lanes, where diarrhæa, typhoid fever, and cholera claim many victims, and they become endemic in those districts where infected discharges from the bowels are deposited in the ashpits, or allowed to soak into the unpaved surroundings of dwellings.

POLLUTION OF RIVERS AND STREAMS.

The important subject of pollution of rivers and streams has been fully dealt with in my Quarterly Reports, and as the Local Reports contain but a few references to it, I do not propose to give many details on this occasion.

The attention of Local Authorities who allow sewage to be discharged into watercourses, may be called to Sec. 1 of the Rivers Pollution Prevention Act, 1893 :—

“Where any sewage falls or flows, or is carried into any stream after passing through or along a channel which is vested in a Sanitary Authority, the Sanitary Authority shall, for the purpose of Sec. 3 of the Rivers Pollution Prevention Act, 1876, be deemed to knowingly permit the sewage matter so to fall, flow, or be carried.”

The Section of the 1876 Act referred to above runs :—

“Every person who causes to fall or flow, or knowingly permits to fall or flow, or be carried into any stream any solid or liquid sewage matter, shall (subject as in this Act mentioned), be deemed to have committed an offence against this Act.”

It may be noted that by Sec. 14 of the Local Government Act, 1888, the County Council has power to enforce the provisions of the above.

The only references to the pollution of rivers and streams are contained in the following reports :—

Aberavon—“The River Afon continues to be polluted by the various communities up the Valley.”

Caerphilly—“The nuisance caused by the coal washing machine at Llanbradach is now much improved through the Colliery Company sending their waste water over the tips and thereby filtering it.”

Cowbridge Rural.—“A careful inspection of the entire district was made by the Sanitary Inspector. As I have so often reported, it was found that the Council themselves, and the neighbouring Urban Authority of Cowbridge were not practically the only offenders of much importance in this matter, but that they were doing so to a serious extent. The worst instances are to be met with at Llanharan and Llantwit Major, where our own sewers are discharged into small brooks, and near Llanblethian, where the crude sewage from the town of Cowbridge is emptied into the adjoining river Thaw. The latter river is also polluted by private individuals, and the River Ely by tin works, and the sewers from Tinman's and River Rows.”

Llandilo-Talybont District—“Most of the rivers and streams in this division are polluted by sewage, or by manufacturing or mining effluents, but until a proper system of sewerage is provided, it would be useless to attempt to check the pollution.”

THE HOUSING OF THE WORKING CLASSES, HOUSE ACCOMMODATION, OVERCROWDING.

House accommodation is reported as deficient in many districts, and Sanitary Authorities hesitate to close old and dilapidated dwellings, because such a course would entail hardship on the evicted tenants, and accentuate the overcrowding which already exists.

According to Part iii. of the Housing of the Working Classes Act, Local Authorities can, with the consent of the County Council, erect, or cause to be erected, workmen's dwellings where they are needed. No such applications have been made, though such a course might with advantage be adopted in certain districts.

A great activity has been shewn generally in improving the houses and sanitary surroundings of the working classes.

The attention of nearly all the Authorities has been directed by the County Council to the dwellings that were insanitary and unfit for occupation and with a very satisfactory result. Nearly all the reports refer to the action taken under Part ii. of the Housing of the Working Classes Act. As far as can be gathered, the number of houses condemned, closed, repaired, demolished, &c., are tabulated below :—

			Houses Condemned.		Closed.	Repaired.	Rebuilt.	Remarks.	
Aberavon	...	...	6	...	2	4	—	...	
Aberdare	...	...	3	...	3	—	—	...	
Barry	...	...	3	...	3	—	—	...	
Bridgend	...	...	5	...	—	2	3	...	
Caerphilly	...	...	11	...	—	—	—	...	Notices served.
Glyncorwg	...	...	1	...	1	—	—	...	
Maesteg	...	...	7	...	—	—	—	...	Still occupied.
Merthyr	...	...	20	...	20	—	—	...	
Neath (Borough)	...	...	38	...	—	—	—	...	Notices served.
Oystermouth	...	...	2	...	2	—	—	...	
Pontypridd	...	...	6	...	6	—	—	...	
Ystradfydwg	...	...	42	...	42	—	—	...	
Cowbridge Rural	...	...	5	...	5	—	—	...	
Gelligaer	...	...	20 (huts)	...	—	—	20	...	Now satisfactory.
Llangyfelach Division	...	...	10	...	10	—	—	...	
Llandilo-Talybont Division...	...	...	20	...	5	5	2	...	Two demolished, two to be rebuilt, and two to be repaired.
Llantrisant & Llantwit-Fardre	...	...	8	...	8	—	—	...	
Neath Rural	...	...	5	...	5	—	—	...	
Penybont	...	...	8	...	8	12	—	...	
Pontardawe (West)	...	...	1	...	—	—	—	...	Notices served.
A total of			221		120	23	25		

As compared with 127 condemned in 1895.

In the Aberavon Report we are told that "a large number of workmen's houses are out of repair, let in rain, are damp, draughty and uncomfortable generally. These defects generally do not come to light unless there is sickness or fever in the house; and as it is an important matter that defects of this sort should be regularly and systematically dealt with, as nothing fosters disease more than a damp and defective dwelling, and the only way to discover houses of this description, also other insanitary conditions, is by making frequent general inspections of the district, paying more frequent visits to those portions which are notoriously insanitary and have given trouble in the past."

At Maesteg, many houses unfit for occupation, and, so reported, are still occupied.

In the Borough of Neath, the Reira dwellings, Eaglesbush Court, have been purchased by the Corporation. The houses, which are unfit for human habitation, will be pulled down and the land added to the Corporation field and roadway. Allen's Court has been very much improved, and Saviour's Court remodelled.

In Llandilo-Talybont Division three cases of overcrowding were reported as dangerous to the health of the inmates, and in each case the nuisance was abated.

HOUSE DRAINAGE.

At Pontypridd a most important test case having reference to "lip-traps" was successfully tried. Mr. Johns, the Inspector, writes:—"Evidence was given to prove, 1st, the water seal in the lip-trap was only $\frac{1}{2}$ inch, wholly insufficient as a seal against sewer gases; minimum seal should be 2 inches. 2nd, the chambers beneath the trap were defective, being built with clunches of brick, and very irregular, with large joints, and in many cases the sides of the chamber had fallen away. 3rd, the joints of the pavement adjoining the trap stone were defective, allowing the water to enter the drain through the defective chamber without entering the trap. 4th, the traps not fitted so as to make an air-tight joint between the rim of the trap and trap stone. 5th, rims of traps broken and stone ledges for same, broken." We are further told that "at Cilfynydd it was an exception to find anything but 'lip-traps.' There are scores of them in other parts of the district." In consequence of this successful case, over 200 of these traps were changed and earthenware syphon traps fixed instead during the year, and it is to be hoped that a great number in this and other districts will be dealt with in the coming year. He further adds. "From a point of economy to owners of property, the earthenware gully-traps are better—first cost being less, and it affords a better protection to the drain. It is a very common thing to find lip-traps picked up and thrown into a corner of the yard, thus leaving the drain open to receive all sweepings and tins, bottles, brushes, &c. With regard to the earthenware gully-traps, they cannot be picked up, being connected directly with the drain, and nothing can enter the drain but what can pass through the syphon."

COMMON LODGING-HOUSES.

Although there is no legal definition of a Common Lodging-House, I am glad to be able to report that a case lately brought forward by the Maesteg Urban District Council, against a person for keeping an unregistered Common Lodging-House, was successful.

As pointed out in former Reports, many Common Lodging-Houses in this County are under Police supervision—some few under the dual supervision of the Police and Sanitary Authorities. It is only in a few instances that the Sanitary Authorities make it their business to inspect them as to sanitary condition, cubic space, &c., with the consequence that they are neglected. There has been, however, of late more activity

shewn in this matter. The part that the moving population that visit these houses played in the spread of infection during the recent outbreak of Small Pox in various parts of the County cannot be over-estimated, and it benoves Sanitary Authorities to pay frequent visits, and be on the constant watch against infectious disease being spread by tramps.

SPREAD OF INFECTIOUS DISEASE BY VAGRANTS.

During the outbreak of Small Pox, which occurred in the first half of the year, many of the cases were taken from the Common Lodging-Houses to the Isolation Hospitals, and there is no doubt but that the disease was spread by tramps, for the various outbreaks occurred in towns where they stayed, and villages they passed through.

DAIRIES, COWSHEDS, AND MILKSHOPS.

Under the Dairies, Cowsheds, and Milkshops Order, it is unlawful for anyone to carry on the trade of Cowkeeper, Purveyor of Milk, or Dairyman, unless registered by the Local Authority. Local Authorities may make regulations as to lighting, ventilation, cleansing, minimum cubic space per cow, and the water supply, &c., of such premises. A register should be kept of dairies and milkshops in each district. No new regulations have yet been made by the Aberdare, Bridgend, Briton Ferry, Oystermouth, Porthcawl, Gelligaer and Rhigos, and Gower Councils.

The inspection of these premises is supervised in a very lax way in most districts. The importance of satisfactory hygienic surroundings to the health of the cow and the quality of the milk obtained therefrom is not fully appreciated. It is a subject, however, which merits more attention at the hands of all our Sanitary Authorities.

For the very scant information contained in most of the local reports, I would refer you to the district summaries.

It has been clearly established that milk is frequently an important factor in the transmission of disease, and this emphasises the extreme importance of providing a sanitary environment for the cow. It was distinctly shewn by the recent Royal Commission, on "The Effect of Food derived from Tuberculous Animals on Human Health," that there exists an enormous amount of tuberculosis amongst milch cows, and that this is a real danger to the Public Health. It is stated that when the udder of the cow is affected, "the milk possesses a virulence which can only be described as extraordinary." Of five tuberculous cows purchased by the Commission, all of which had tubercle of the udder, Dr. Martin found tubercle bacilli in the milk of three. Fifteen test animals were fed with this milk, and *all* developed tuberculosis.

"Almost day by day, (says the *Lancet*), fresh evidence accrues of the extreme necessity of placing cows under the best possible sanitary environment, since darkness, filth, and defective ventilation are favourable conditions for the development of tuberculosis and the milk of tuberculous cows, especially when the disease affects the udder, is an undoubted source of infection."

The Medical Officer of Health for Manchester, in a report he has recently presented, arrived at the following conclusions:—"1. That the milk of tuberculous cows, of which the udder is not diseased, is rarely infectious (though it must be remembered that the udder may become tuberculous at any time). 2. That in tuberculous cows, when the udder is diseased, this may be due to tuberculosis or other diseases. In half the cases examined the disease of the udder was due to tuberculosis. 3. That when the udder is tuberculous, the milk is generally infectious, and is a source of great danger to young children."

The following paragraph on "Meat and Milk Inspection" is taken from the *British Medical Journal*, May 29th, 1897 :—"The Provincial Board of Health for Ontario has issued a pamphlet giving (1) the extent of the Act providing for Inspection of Meat and Milk Supplies of Cities and Towns, passed by the Legislature of Ontario in 1896; (2) plans and estimate of cost of a municipal abattoir, and regulations of the Provincial Board of Health regarding the same; and (3) a report on Inspection of Meat and Milk, and Regulations relating thereto. . . The two best means of limiting this danger are by efficient examination of carcasses of animals slaughtered for human food, and by the testing of milch cows with tuberculin. Both these can be arranged now by the cities and towns in the Province of Ontario, for every Municipal Council is empowered to provide a public slaughter house, cattle yard and pens, and to equip and regulate the same, the Local Board of Health having the control and supervision. Further, every Urban Board of Health may examine into the purity of the milk supplies, and the sanitary condition of byres, and the health of the milch cows. In particular, the Board may provide for the testing with tuberculin by a registered veterinary surgeon of every cow giving public milk supplies for the diagnosis of tuberculosis. Each cow found healthy is to be ear-marked with a metal tag, on which a number, corresponding with the number of an entry describing the cow in the Veterinary Inspector's book. Any animal giving the tuberculin reaction is to be removed from the herd, and (a) if wasted and having clinical symptoms of lung disease, the cow is to be destroyed, and the carcass so disposed of that it shall not be used for human food; (b) if in fair condition, the cow is to be fattened as speedily as possible for slaughter; the milk may be allowed to stop, or it may be boiled for half-an-hour and fed to pigs or calves."

It is important to remember that

- (i.) All cowsheds should be cleansed once daily at least.
- (ii.) They should be limewashed twice a year, and that
- (iii.) The minimum cubic space per cow should be 800 feet in Urban districts.

I have entered into this very important question rather fully in the hope that Local Authorities may be induced to pay it more attention. For with the improvement of the health of cattle, the quality of milk, the food supply of infants would improve, and would help to decrease the sustained high Infant Mortality which has so long characterised Glamorganshire.

BAKEHOUSES.

None of the reports give information about Bakehouses.

SLAUGHTER HOUSES.

It is a pity that the power vested in Urban Councils is so seldom made use of, as private slaughter houses are always liable to cause nuisances. A new Public Abattoir is being constructed at Barry, and is to be completed early this summer.

There are Public Abattoirs at Aberavon, Aberdare, Barry, Bridgend, Merthyr, Neath, and Pontypridd. Public Slaughter Houses are recommended for Cowbridge, Garw and Ogmore, Caerphilly (various centres), Maesteg, Margam, Oystermouth, Pontyclun, and Llantrisant, and for other places.

I visited all the slaughter houses in the County during the year, and I am in a position to state that their condition is as a rule greatly improved.

Further particulars are given in the local summaries.

In only a few districts were any seizures of unsound meat or food during the year, and as a matter of fact there is but little supervision of food supplies in the majority of districts.

FACTORIES AND WORKSHOPS.

From time to time several Acts of Parliament have been passed having reference to Factories and Workshops. The *Sanitary Condition* of all Workshops—including Bakehouses and Laundries—is now under the supervision of the various Sanitary Authorities.

The Factory and Workshops Act, 1895, came into operation 1st January, 1896, and it might be of use if I call attention to a few of its provisions:—

The expression “Workshop” means any premises, room or place (devoid of machinery moved by steam, water or other mechanical power) in which any manual labour is exercised by way of trade for the purposes of gain: that is to say—

- (a) In or incidental to the making of any article or of part of any article; or
- (b) In or incidental to the altering, repairing, ornamenting or finishing of any article; or
- (c) In or incidental to the adapting for sale of any article, and to which or over which premises, room or place, the employer of the person working therein has the right of access or control.

The Factory and Workshops Act, 1895, includes Laundries, but exempt those in which the only persons employed are either

- (a) Inmates of any prison, reformatory or industrial school, or other institution for the time being subject to inspection under any Act other than the Factory Acts; or
- (b) Inmates of any institution conducted in good faith for religious or charitable purposes; or
- (c) *Members of the same family dwelling on the premises with not more than two other persons dwelling elsewhere.*

The sanitary condition of all Workshops (including Bake-houses and Laundries) is placed under the supervision of local Sanitary Authorities, who are also responsible (under certain circumstances) that reasonable means of escape in case of fire are provided.

Special attention is directed to Section 6 of the Factory and Workshops Acts, 1895, which is as follows:

“If any occupier of a Factory or Workshop or Laundry, or of any place from which any work is given out, or any contractor employed by any such occupier, causes or allows wearing apparel to be made, cleaned or repaired in any dwelling house or building occupied therewith, whilst any inmate of the dwelling house is suffering from Scarlet Fever or Small Pox, then, unless he proves that he was not aware of the existence of the illness in the dwelling house, and could not reasonably have been expected to become aware of it, he shall be liable to a fine not exceeding Ten Pounds.”

REPORTS OF SANITARY INSPECTORS.

Out of the 30 copies of Table C sent out to Medical Officers, 24 were filled up and returned, as compared with 19 in 1895. From all the districts except Aberdare, Glynorwg, Neath Borough, Porthcawl, and Llantrisant and Llantwit Fardre, reports of some kind or another were received.

In many instances the returns and reports of Inspectors indicate that a record of their yearly work is systematically kept, but in a few instances neither the record of work done nor the way in which the return is prepared can be regarded as satisfactory.

The value of systematic house-to-house inspection seems to have been overlooked in several districts, such as Aberdare, Briton Ferry, Glynorwg, Maesteg, Mountain Ash, Pontypridd, and Llandaff and Dinas Powis. In many of the Districts it is impossible with the present staff to attend to all the requirements. This is especially the case at Aberdare and Mountain Ash.

SCHOOL INSPECTION.

As far as I can gather from the reports and from personal knowledge, it appears that periodical inspection of all the Schools was made in the majority of the districts. It would be well if the practice was extended to all districts and undertaken at least *once* a quarter.

ACTS OF PARLIAMENT AND BYELAWS.

The Barry Urban District Council Act was obtained in the last Session of Parliament.

At Aberdare, Bye-laws approved by the Local Government Board, with respect to

- (1) Alterations of Buildings
- (2) New streets and buildings

recently came into operation.

The Gower Council have applied to the Local Government Board for powers to make byelaws with respect to new buildings, slaughter houses, &c.

At Llantrisant and Llantwit Fardre and Porthcawl, byelaws are being framed.

The rural districts of Llangyfelach and Pontardawe are still without byelaws with respect to nuisances, slaughter houses, &c. Dr. Mitchell writes:—"The aim of sanitary administration should be the prevention of nuisances, not their abatement after they have actually arisen, and this district can never be in a satisfactory state so long as your Council does not possess a code of byelaws for the regulation of slaughter houses, offensive trades, houses let in lodgings, common lodging houses, and for the prevention of nuisances." Dr. Thomas (Pontardawe) writes:—"Byelaws should be adopted enabling greater supervision over the construction of new buildings, the more speedy abatement of nuisances, as well as other matters of sanitary reform."

THE SALE OF FOOD AND DRUGS ACT.

For the purposes of this Act the County is divided into five districts—Barry, Bridgend, Merthyr, Neath, and Pontypridd, and the duties are performed by the Superintendents of Police acting as Inspectors under the Act. With a view of facilitating the work of the Inspectors, I prepared and distributed a list of Drugs which are in common use and likely to be adulterated, so that samples might be taken and submitted to analysis.

The number of samples taken during the year ending the 30th November was 983 as compared with 1,042 in 1895. Of these 260 were taken in the first, 233 in the second, 242 in the third, and 248 in the fourth quarter, or

191	from Barry district.
180	„ Bridgend „
211	„ Merthyr „
179	„ Neath „
222	„ Pontypridd „

The nature and result in each instance have been given in the Quarterly Reports of the County Analyst.

During the year I presented reports to the Local Government Committee on

- (1) The addition of Beef Stearine to Lard, and
- (2) Boric Acid in Milk, Butter, &c.

The latter report was as follows :—

The present state of our knowledge of the physiological action of Boric Acid and Borax is so imperfect, that it is difficult to say what amount of these substances, if any, can be added, with safety to consumers, to articles of food such as milk, butter, &c.

It appears from Kobert's "Intoxication" that cases of slight poisoning have frequently occurred, and occasionally death. The symptoms appear to be due to irritation of the gastro-intestinal canal, decomposition of the blood, and irritation of the nervous system. Large doses appear to cause diarrhoea, wasting, weakness of the muscles and of the heart, and purpura on the skin. Several authors have said that 40 to 60 grains of borax might be taken for several months without causing any disagreeable symptoms, but other observers saw symptoms of poisoning from these doses in man in the course of a few days. It was the opinion of Sir Andrew Clarke and others, that many diseases, the origin of which doctors were unable to trace, were attributable to the use of these and other antiseptics. It may be said, and with truth, that the addition of borax or boric acid, will tend to prevent the formation in milk of the poisons which may be produced by bacterial decomposition. But at the same time, if dairymen are allowed to add boric acid or borax at their own free will, they will be under the temptation of keeping milk longer than they would otherwise do, and thus the public will in the end run the double danger of boric acid plus decomposing milk.

The use of boric acid in milk is entirely prohibited in France, and some of the largest milk supply companies in the metropolis entirely forbid it, thus showing that there is no absolute necessity for its use. At Birmingham convictions have been obtained for boric acid in milk to the extent of 60 to 65 grains per gallon.

It seems to me that borax and boric acid should NOT be sanctioned as preservatives to milk, butter, &c., unless very stringent rules indeed are passed as to the quantity to be used, and in the present state of our knowledge regarding these substances, it would probably be better to prohibit their use altogether, for there can be no doubt that the principle is utterly bad, and the practice of drugging the public promiscuously and without their knowledge, and by incompetent persons, when they are in good health, is very dangerous.

RAINFALL.

The Rainfall is closely connected with the surface features, and the contour of the ground determines in a remarkable manner its relative amount in any given locality in the County, and it is found to be very different in amount, even at points only a few miles apart. The following measurements at different elevations are given in the various reports :—

BARRY.

Taken at Biglis Pumping Station. Elevation 20 feet. Diameter of Receiver of Gauge, 5 inches.

MONTH.	Total Depth in inches.	Greatest Fall in 24 hours.		No. of Days on which 0·01 inches or more fell.
		Depth.	Date.	
January	0·84	0·34	25th	10
February	0·50	0·19	9th	9
March	3·59	0·49	21st	26
April	0·58	0·11	14th and 18th	10
May	0·18	0·15	1st	2
June	2·04	0·36	8th	10
July	1·39	0·48	8th	9
August	3·33	1·10	26th	15
September	7·29	1·12	18th	25
October	3·89	0·78	25th	18
November	0·68	0·39	15th	6
December	4·90	0·73	5th	22
Total	29·21			162

OYSTERMOUTH.

Taken at Newton. Elevation 280 feet. Diameter of Funnel, 5 inches.

MONTH.	Total Depth.	No. of Days on which 0·01 inches or more fell.
January	1·71	17
February	0·93	10
March	5·35	25
April	1·13	16
May	0·09	1
June	1·26	10
July	3·08	12
August	2·55	13
September	7·13	23
October	5·31	19
November	1·70	12
December	7·78	27
Total	38·02	185

LLANDILO TALYBONT.

Taken at Penllergaer, in the Parish of Penderry. Elevation 240. Diameter of Funnel, 5 inches.

MONTH.	Total Depth in inches.	Greatest Fall in 24 hours.		No. of Days on which 0.01 or more inches fell.
		Depth.	Date.	
January	1.79	0.62	24th	12
February	1.25	0.45	8th	8
March	5.25	0.76	7th	26
April	1.30	0.34	15th	10
May	1.10	0.10	21st	1
June	1.50	0.75	16th	6
July	3.56	1.02	24th	11
August	2.87	0.75	18th	12
September	8.28	1.45	24th	23
October	5.52	1.14	6th	18
November	1.45	0.63	14th	9
December	9.27	1.14	1st	26
Total	42.14			162

LLANGYFELACH.

At Glanrafon, Morriston. Elevation, 53.2. Diameter of Funnel, 6in.

MONTH.	Total Depth in inches.	Greatest Fall in 24 hours.		No. of Days on which 0.01 or more inches fell.
		Depth.	Date.	
January	1.64	0.54	24th	12
February	1.44	0.54	8th	11
March	5.14	1.02	7th	26
April	1.10	0.35	13th	10
May	0.8	0.80	21st	1
June	1.85	0.70	16th	13
July	2.87	0.75	24th	12
August	2.81	0.69	18th	16
September	8.24	1.44	23rd	24
October	5.43	1.06	6th	16
November	1.44	0.40	14th	10
December	9.25	0.21	1st	24
Total	41.29			175

PENTWYN RESERVOIR (MERTHYR).

Gauge : 1,120 feet above sea level.

MONTH.	Total Depth in inches.	Greatest Fall in 24 hours.		No. of Days on which 0·01 or more inches fell.
		Depth.	Date.	
January	2·55	·83	24th	16
February	1·75	·72	8th	13
March	7·47	·65	2nd	28
April	1·52	·24	10th	16
May	·11	·04	19th & 21st	3
June	3·25	1·12	9th	18
July	3·17	·95	25th	13
August	3·53	·48	19th	15
September	10·24	1·89	17th	26
October	6·96	1·14	7th	21
November	2·15	·69	14th	12
December	12·35	1·55	4th	25
Total	55·05			206

NEUADD RESERVOIR, No. 1 (MERTHYR).

Gauge : 1,462 feet above sea level.

MONTH.	Total Depth in inches.	Greatest Fall in 24 hours.		No. of Days on which 0·01 or more inches fell.
		Depth.	Date.	
January	3·48	·94	24th	15
February	1·82	·73	8th	11
March	7·14	·66	7th	26
April	1·64	·30	10th	15
May	·13	·07	21st	2
June	3·13	·98	9th	15
July	2·73	·68	24th	13
August	4·59	·55	23rd	17
September	9·95	1·68	17th	25
October	7·90	1·13	6th	21
November	2·64	·64	15th	10
December	11·83	1·99	24th	27
Total	56·98			197

BRYNTEG (MERTHYR).

Above sea level, 685 feet.

MONTH.				Inches.	No. of dry days.
January	...	...	...	1'43	16
February	...	...	...	'98	19
March ..	...	...	...	6'26	4
April ...	...	...	...	'95	16
May ...	...	...	...	'14	27
June ...	...	...	...	2'10	14
July ...	...	...	...	3'08	18
August	...	...	...	2'55	12
September	...	...	...	9'11	3
October	...	...	...	5'74	11
November	...	...	...	1'66	15
December	...	...	...	9'82	7
Total	...	...	...	43'82	162

PONTARDAWE (EAST).

Wern Schools, Ystalyfera.

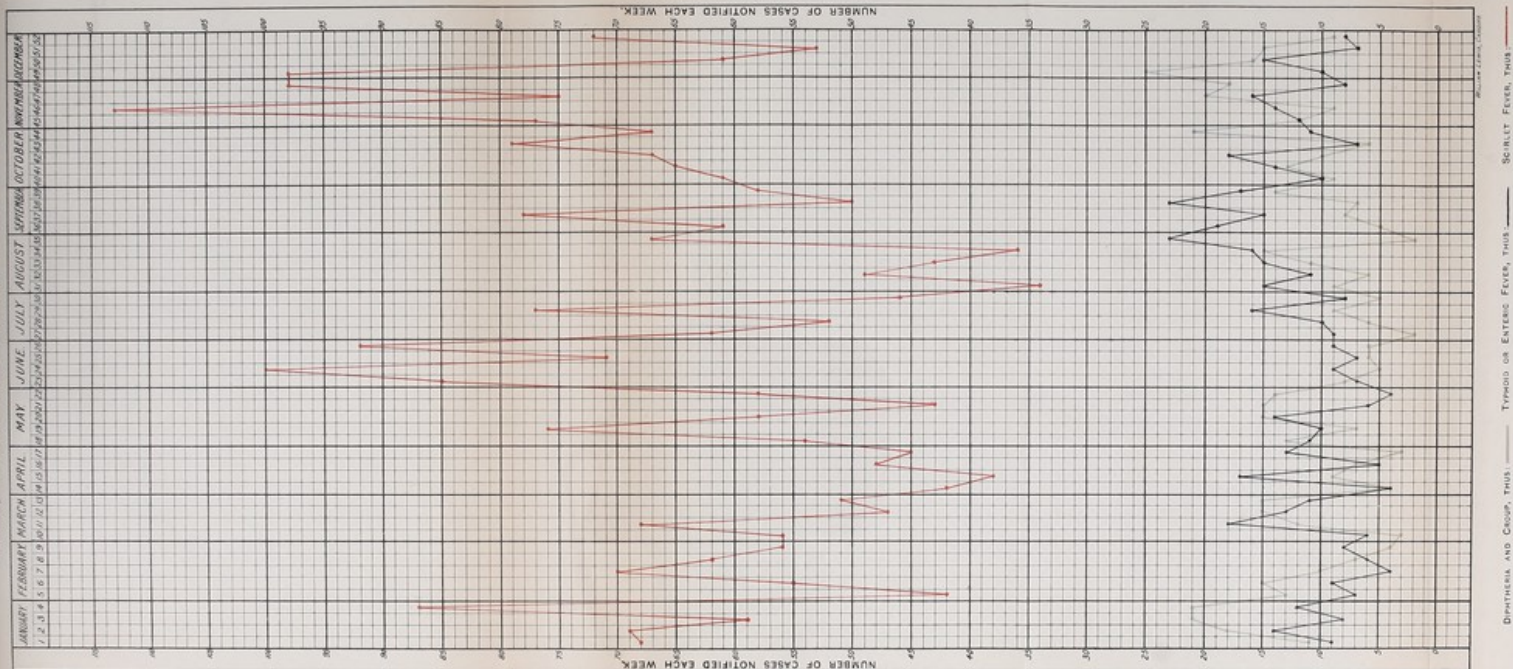
Elevation 240 feet.

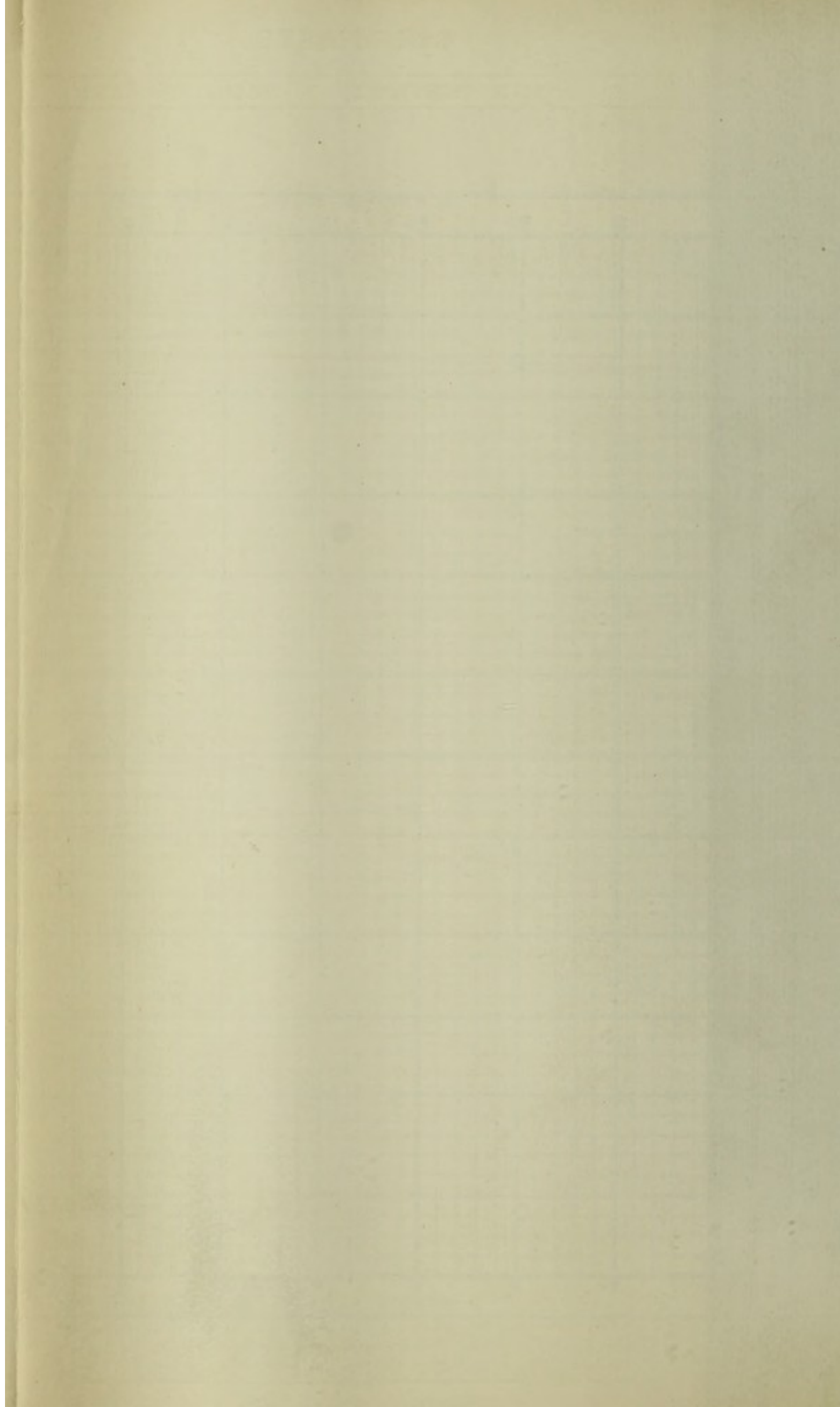
MONTH.				Total Depth.	Greatest fall in 24 hours.		No. of Wet Days.
					Depth.	Date.	
January	...	...	...	3'07	1'09	24th	13
February	...	...	...	1'86	'85	8th	10
March ...	...	...	...	7'20	1'02	7th	26
April ...	...	...	...	1'61	'48	12th	9
May ...	...	...	...	'07	'07	21st	1
June ...	...	...	...	2'51	'67	16th	15
July ...	...	...	...	3'63	'87	24th	12
August	...	...	...	3'69	'90	18th	19
September	...	...	...	11'76	2'60	17th	24
October	...	...	...	7'17	1'30	6th	17
November	...	...	...	2'46	'92	14th	8
December	...	...	...	12'03	1'36	28th	26
Total	...	...	...	57'00	inches of	rain fell	in 180 days.

REST, PORTHCAWL.

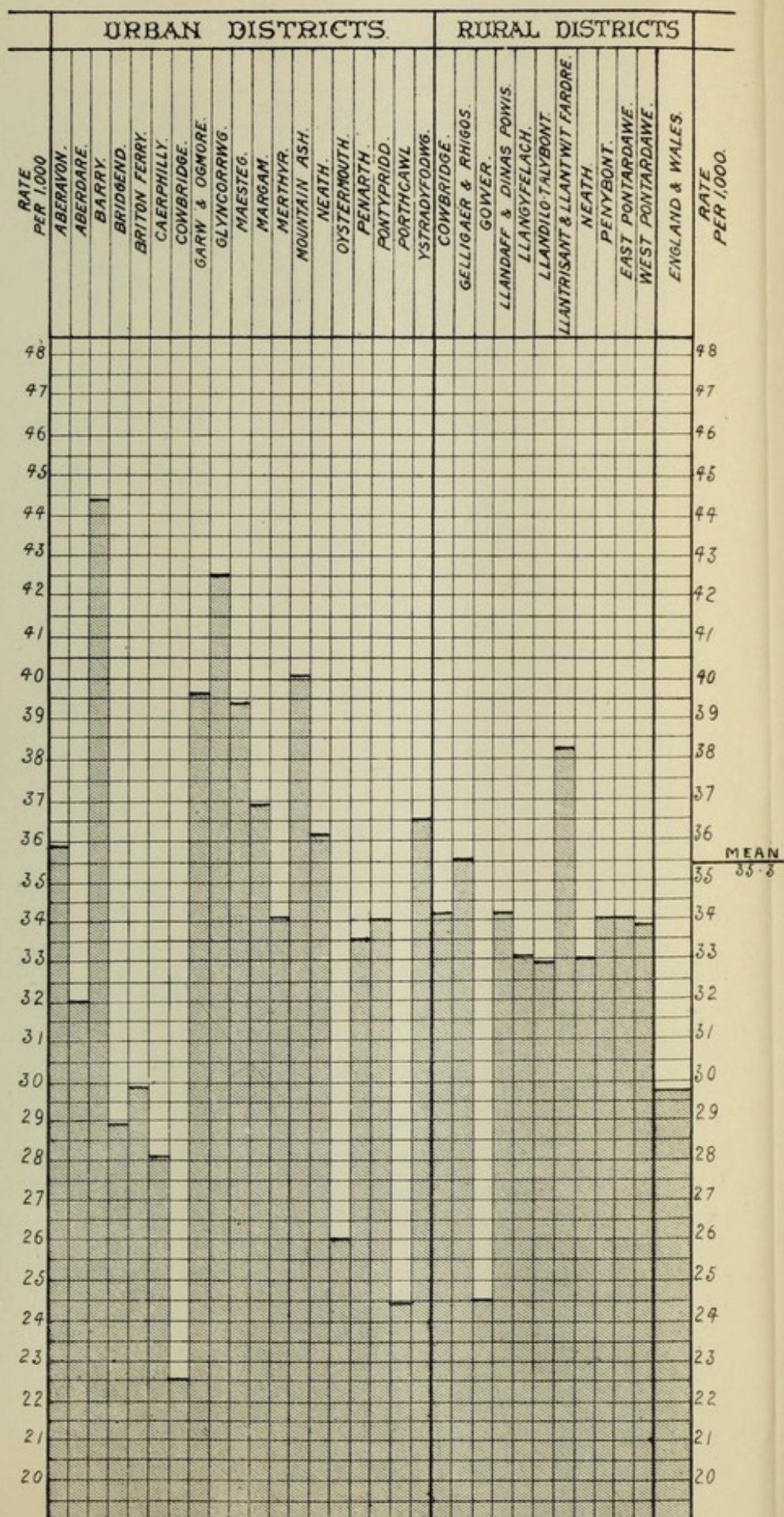
MONTH.	Total Depth.	Greatest Fall in 24 hours.	
		Depth.	Date.
January	·87	·29	23rd
February	1·32	·52	8th
March	3·63	·50	6th
April	·56	·24	13th
May	·08	·08	31st
June	1·40	·48	4th
July	1·85	·53	8th
August	1·69	·40	24th
September	6·19	1·04	21st
October	3·78	·76	28th
November	·73	·23	14th
December	5·02	·60	27th
Total	27·12	—	—

CHART SHEWING SEASONAL PREVALENCE OF DIPHTHERIA AND
GROUP, TYPHOID AND SCARLET FEVER IN 1896.

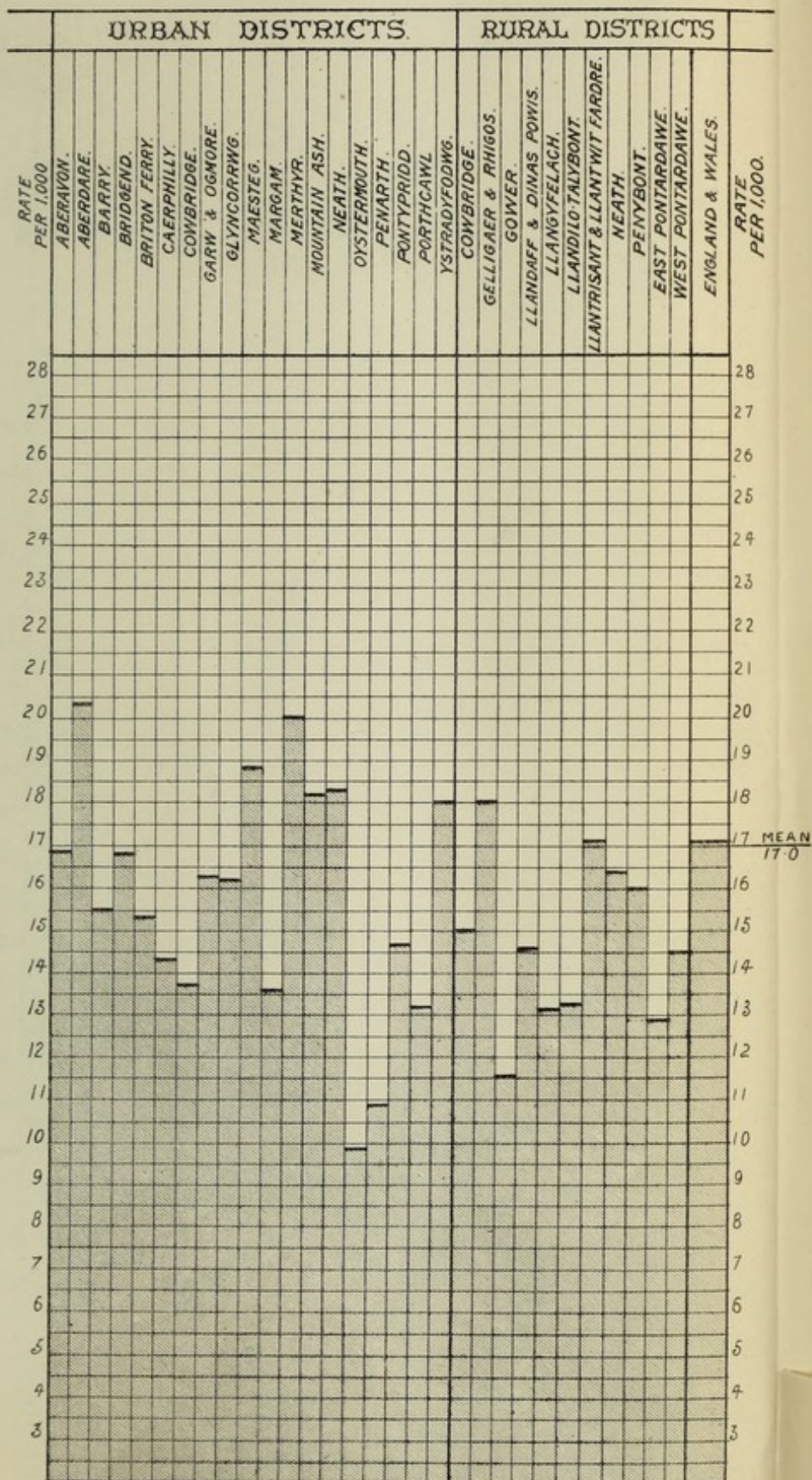




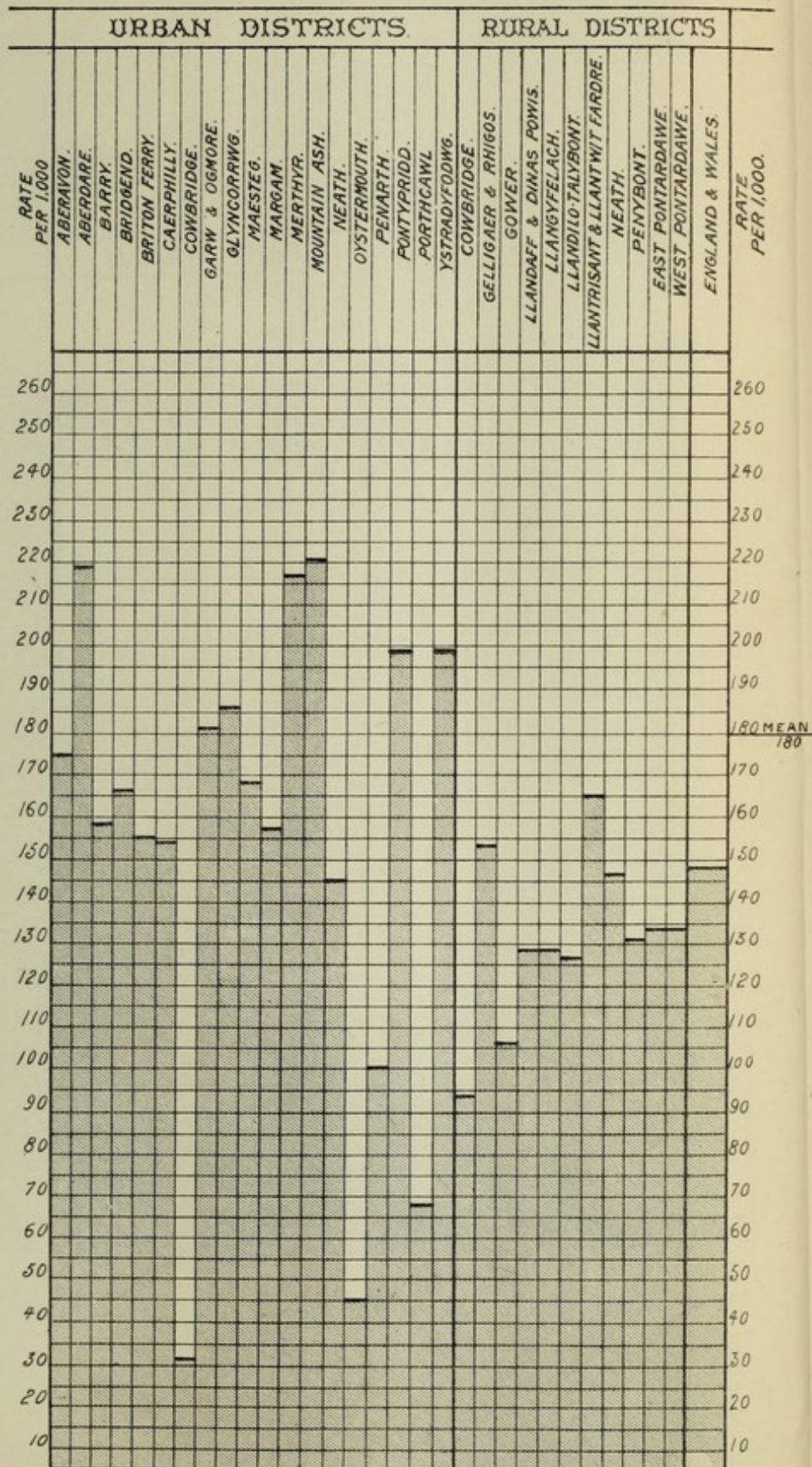
BIRTH-RATE.



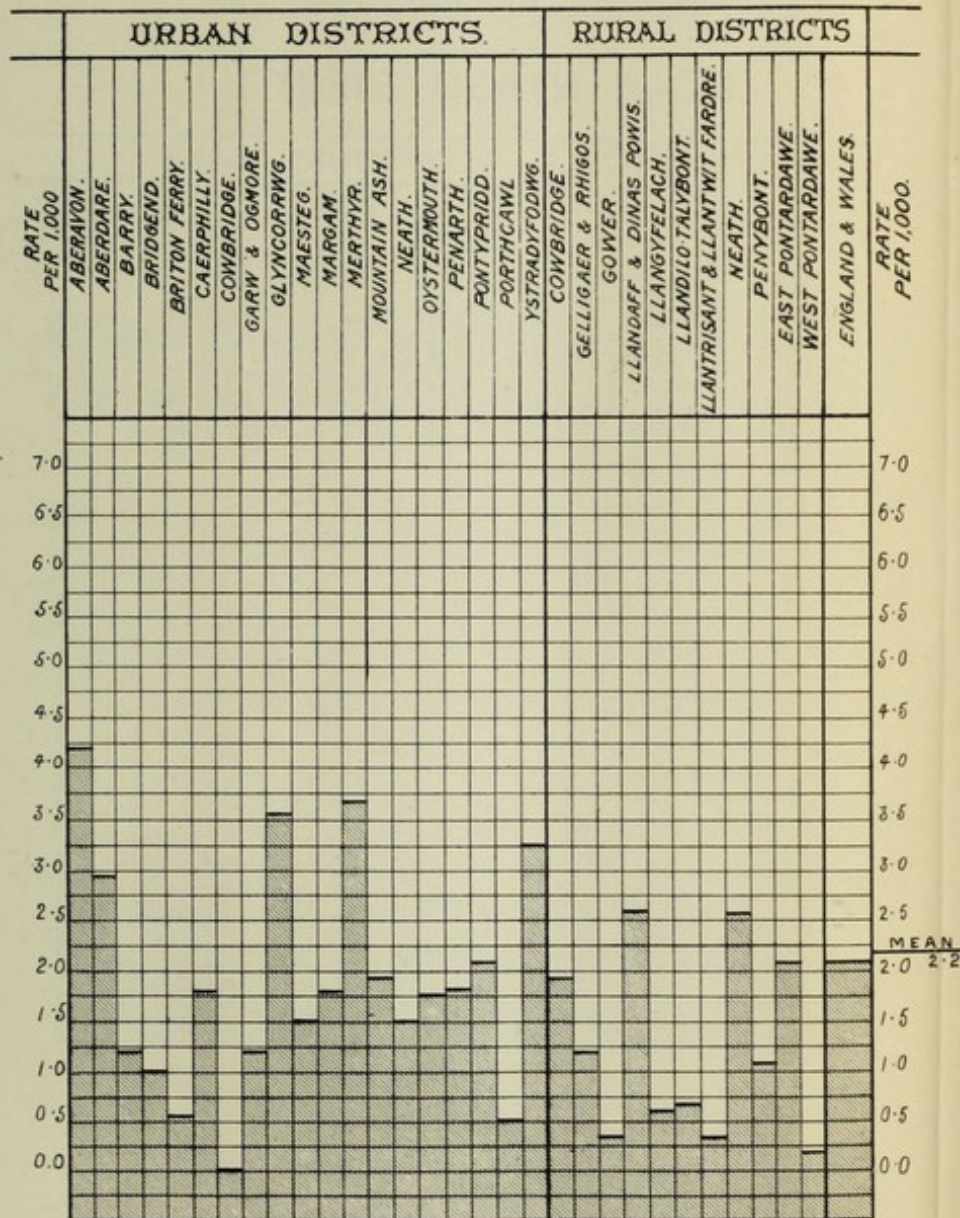
DEATH - RATE



INFANT MORTALITY-RATE PER 1000 BIRTHS.



ZYMOTIC DEATH-RATE



SYMBOLIC DEATH RATE

1900-1901

1901-1902

1902-1903

1903-1904

1904-1905

1905-1906

1906-1907

1907-1908

1908-1909

1909-1910

1910-1911

1911-1912

1912-1913

1913-1914

1914-1915

1915-1916

1916-1917

1917-1918

1918-1919

1919-1920

1920-1921

1921-1922

1922-1923

1923-1924

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1925-1926

1926-1927

1927-1928

1928-1929

1929-1930

1930-1931

1931-1932

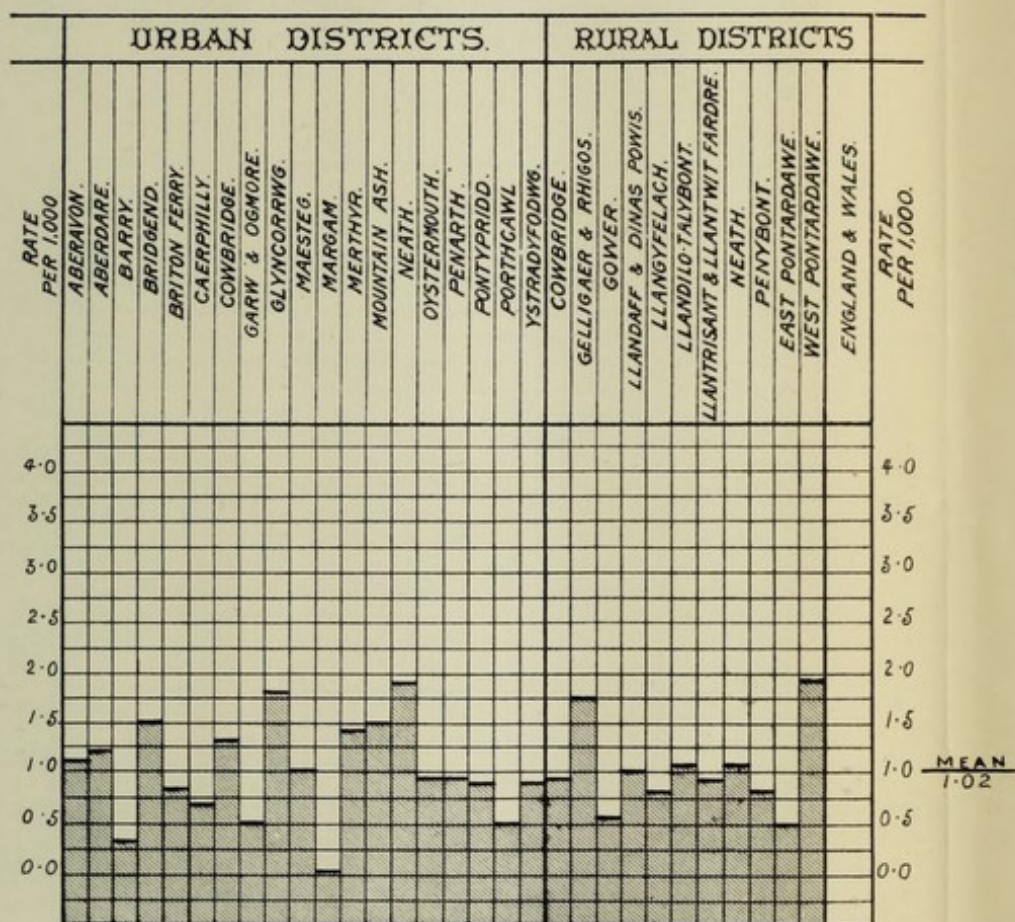
1932-1933

1933-1934

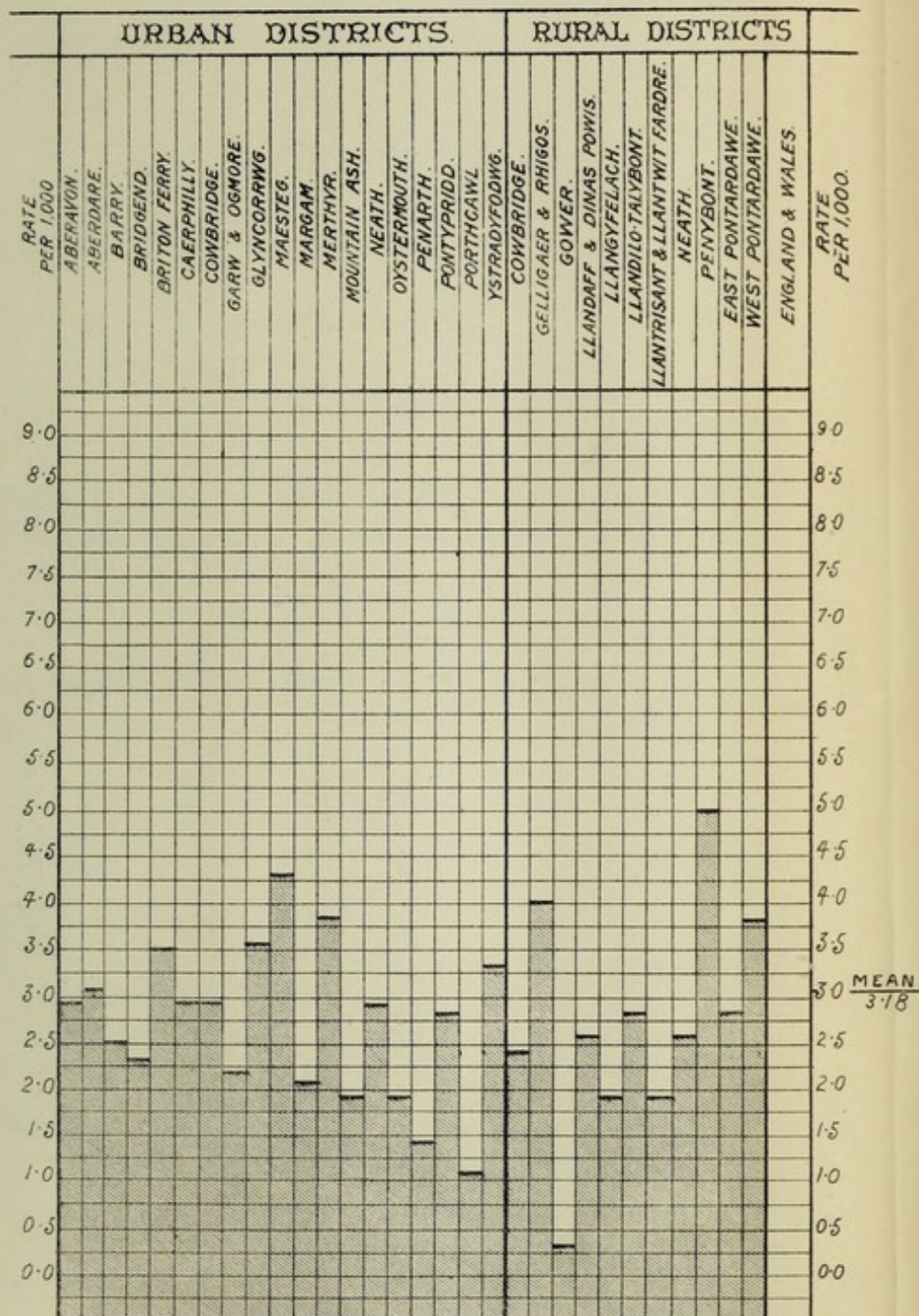
1934-1935

1935-1936

PHTHISIS DEATH-RATE



RESPIRATORY DEATH-RATE



RESPIRATORY DEATH RATE

DATE: _____ TIME: _____

NAME: _____

AGE: _____

SEX: _____

WEIGHT: _____

HEIGHT: _____

TEMPERATURE: _____

PULSE: _____

BLOOD PRESSURE: _____

RESPIRATORY RATE: _____

RESPIRATORY VOLUME: _____

RESPIRATORY DEATH RATE: _____

RESPIRATORY DEATH RATE: _____

RESPIRATORY DEATH RATE: _____

RESPIRATORY DEATH RATE: _____

RESPIRATORY DEATH RATE: _____

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RESPIRATORY DEATH RATE: _____

RESPIRATORY DEATH RATE: _____

PART II.

URBAN DISTRICTS.

ABERAVON (BOROUGH.)

Medical Officer of Health—J. ARNALLT JONES, M.R.C.S., L.R.C.P.

Area in acres, 2,060.

	1891.	1896.
Population	6,281	7,600 (estimated).

Birth-rate, 35·9.	Death-rate, 16·84.	Zymotic death-rate, 4·21.	Infant mortality-rate, 175.
	Phthisis death-rate, 1·19.	Respiratory Diseases death-rate, 2·9	

INFECTIOUS DISEASES.

The cases of Infectious Diseases notified were:—

	Cases.								Deaths.
Small Pox	4	...	...	...	1
Scarlatina	192	...	...	...	1
Diphtheria	71	...	...	...	7
Membranous Croup	24	...	...	...	5
Typhoid Fever	7	...	...	...	0
Puerperal Fever	6	...	...	...	1
Erysipelas	18	...	...	...	0
Making a total of ...					322				15
Measles	3
Whooping Cough	0
Diarrhœa	14
Making a total of ...									32

The four cases of *Small Pox* were removed to and isolated at the Small Pox Hospital.

The first case occurred in January, in the person of a navvy who came from a lodging-house in Cardiff, and was taken ill on his arrival in the town, and presented himself for examination on the first appearance of the rash. The type of disease was very severe, he was unvaccinated, and died on the 14th day.

In February, another case appeared in a Charlotte Street Lodging-house. The patient, a travelling sweep, had contracted the disease in a Swansea Lodging-house.

In March, a young navvy was admitted to the hospital—he had contracted the disease at the same house in Cardiff as the fatal case above referred to had acquired the infection.

Later a fourth case—the one-year-old child of the landlady of the house where the last patient lodged. The child turned out to be unvaccinated, and owed the infection to the culpable folly of the mother. The houses were disinfected and clothing burnt, and all persons who had possibly come into contact with the patient were re-vaccinated.

The Medical Officer of Health writes of the Small Pox Hospital thus:—"I maintain that in spite of its drawbacks it has saved the ratepayers many hundreds of pounds, and it has fulfilled what was required of it, viz., to afford efficient isolation for cases of Small Pox at a moderate cost."

192 cases of *Scarlatina* were notified, and only 1 proved fatal. The epidemic had commenced in 1895, and *all* parts of the district were attacked. The spread of the disease is attributed to personal contact and school influence. It is stated that the School Board became active towards the close of the epidemic in preventing the attendance of infected children at school. The disinfection of rooms and clothing is described as "little better than a sham," for the Inspector, with his numerous duties, could give it no attention.

Diphtheria, which had broken out in the last quarter of 1895, was prevalent during 1896; the number of cases coming under treatment being 71, with 7 deaths, or 1 in 10; of these, 27 were notified in January, 12 in November. The outbreak was mostly confined to the *badly drained* parts, such as *Sandfields, Velindre, Corlannau, &c.* It was also more prevalent in damp weather. The spread of the epidemic is attributed to a combination of causes, such as:—(1) *The influx of strangers in search of work*, (2) *overcrowding*, (3) *dampness of soil and of the houses*, (4) *the frequent wet weather*, (5) *infection from mild and unrecognised cases in school and elsewhere.*

The 24 cases of *Membranous Croup* were likewise located in the badly drained part of the town.

Measles was epidemic in March, April and May, and the schools were closed.

Of the 7 cases of *Typhoid Fever*, 3 are attributed to insanitary surroundings. There was no fatal case.

Of the 6 cases of *Puerperal Fever*, 3 were attended by one midwife and 2 by another. In only one instance was the disease fatal.

The Medical Officer writes—"As long as women in childbed are nursed by the so-called midwives who are ignorant, untrained, and have not even a rudimentary knowledge of the essential rules of their art, so long will we have puerperal fever to deal with."

Diarrhœa was prevalent in the months of August, September and October, when 13 deaths among children occurred, and are attributed to sour milk and scarcity of water. One adult died in July from choleraic diarrhœa.

GENERAL CONDITIONS.

A large number of workmen's houses are (described as) *out of repair, let in rain, damp, draughty, and uncomfortable*, and it is stated that these defects generally do not come to light unless there is sickness or

ever in the house. In this connection the Medical Officer of Health urges upon the Corporation the necessity of making a house-to-house inspection of the whole district at frequent intervals.

Water Supply.—"The available storage is much too small for this populous and growing district. The sufferings of the inhabitants during last year's drought were great, and the scarcity of water and its often foul condition, accounts for the wide-spread autumnal diarrhoea and the heavy mortality amongst infants from that affection. . . . I have referred to the scarcity of water in my reports for years past, and in justice to the inhabitants the adoption of some reasonable scheme for increasing the water supply should not be further delayed by the Council, for any further postponement of the matter will injure the reputation of the town, and will also seriously interfere with the health and comfort of the inhabitants." This is a strong condemnation, and I trust that it has been the means of arousing the Sanitary Authority to a sense of their responsibility as custodians of the public health and safety.

It is stated that the river *Afon* continues to be polluted by the various communities up the Valley.

IMPROVEMENTS.

The improvements are not referred to.

REQUIREMENTS.

These are also not referred to, except generally, and it would seem that they are :—

- (1) The enlargement of the storage reservoir.
- (2) A house-to-house inspection at frequent intervals.
- (3) Extension of the sewerage system to the upper part of the Borough.
- (4) The prevention of overcrowding.
- (5) The disinfection of dwellings, articles of bedding and clothing, should be done by the Inspector and not left to the occupiers.

REMARKS.

The Report is type-written—in former years it was printed.

There was a separate Report from the Sanitary Inspector.

ABERDARE.

Medical Officer of Health—D. DAVIES, F.R.C.S.

Area in acres, 15,127.

1891.

1896.

Population 40,917 44,000 (estimated).

Birth-rate, 32·16. Death-rate, 20·36. Zymotic death-rate, 2·9. Infant mortality-rate, 219.

Phthisis death-rate, 1·2. Respiratory Diseases death-rate, 3·1.

All the death-rates except that for Phthisis are high, and compare unfavourably with those of England and Wales. The general death-rate, however, is 1·64 lower than in 1895. During the year there were 1,478 births and 889 deaths. Of the deaths, 325 or 36·6 per cent. were those of infants under one year of age.

INFECTIOUS DISEASES.

This is the *only* district in the County where the Infectious Disease (Notification) Act has not been adopted, so that little or nothing is definitely known about the prevalence of infectious sickness. 129 deaths (as compared with 112 in 1895) are attributed to the principal zymotic diseases, viz., 12 *Scarlet Fever*, 10 *Measles*, 15 *Whooping Cough*, 7 *Typhoid Fever*, 41 *Diphtheria and Croup*, 51 *Diarrhæa*, and 1 *Puerperal Fever*.

GENERAL CONDITIONS.

No information is given.

IMPROVEMENTS.

These are not specified.

REQUIREMENTS.

These are not specified.

REMARKS.

The Medical Officer of Health does not prepare an Annual Report, and four quarterly reports only have been received from the Clerk. These are printed, and deal exclusively with vital statistics, so that it is impossible from want of material to compile a summary. The tables required by the Local Government Board and County Council are *not* appended, nor is there any statement as to the work done by the Sanitary Inspector.

BARRY.

Medical Officer of Health—GEORGE NEALE, L.R.C.P., &c.

Area in acres, 4,104.

	1881.	1891.	1896.
Population	165	12,665	23,228 (estimated).

Birth-rate, 44·7. Death-rate, 15·5. Zymotic death-rate, 1·2. Infant mortality-rate, 158.
 Phthisis death-rate, 0·3. Respiratory Diseases death-rate, 2·5.

During the early part of December a survey was made of the whole district, and it was found that the number occupying each house varied from 6·25, 6·50 to 7·25. The total number of occupied houses, $4,027 \times 6·5 = 26,175 + 800$, the mean floating population, making 26,975 at end of the year.

All the above rates are most satisfactory—the infant mortality-rate, however, is slightly in excess of that for England and Wales. The deaths of infants under 1 year of age are responsible for 45·4 of the total deaths.

INFECTIOUS DISEASES.

325 cases of infectious diseases were notified as compared with 185 in 1895. These included *Small Pox* (4 cases), *Diphtheria* (17 cases and 3 deaths), *Membranous Croup* (5 cases and 1 death), *Erysipelas* (83 cases and 1 death), *Scarlet Fever* (194 cases and 6 deaths), *Enteric or Typhoid Fever* (20 cases and 3 deaths), and *Puerperal Fever* (2 cases). 6 deaths are attributed to *Measles*, 3 to *Whooping Cough*, and 9 to *Diarrhæa*.

Small Pox—4 cases and all recovered. The first to develop the disease was a girl of 17 years of age, who came from Bristol a week previously.

On December 30th, 3 cases in one house (father, mother and son), aged 46, 41, and 16 years respectively were notified. The origin of this outbreak was not positively traced, but the Medical Officer of Health believes it was brought by a sailor who called at the house 14 days previously, for all the three developed the symptoms simultaneously.

Scarlet Fever of a mild type was very prevalent. The Medical Officer of Health observes that it is only by complete isolation at the commencement of an epidemic that one can hope to stamp out the infection quickly and effectually.

Of the 20 cases of *Enteric or Typhoid Fever*—6 were removed from vessels at the docks, and had their origin outside the district; 3 of the remainder were infected by one of these sailors, and this fact well illustrates the advantages of removing such cases to an Isolation Hospital. Two new comers to the district developed the fever after a few days' residence.

The Medical Officer of Health writes thus:—"Another year has gone by without the Isolation Hospital being erected, . . . still I trust that the Council will be able to proceed with the construction early this year." It is stated that "the erection of the joint Cholera Hospital on the Flat Holms is proceeding satisfactorily." It is also impressed upon the Council that their district, as far as Small Pox is concerned, is not in a safe position with the existing accommodation, and that at least 20 beds should be provided as expeditiously as possible.

GENERAL CONDITIONS.

A systematic *house-to-house inspection* of the district was made by the Sanitary Inspectors, and a large number of sanitary defects were discovered and remedied.

The *Public Slaughter House* was regularly inspected. No cases of illegal slaughtering on unlicensed premises came to the knowledge of the Inspector. The erection of the *Public Abattoir* is proceeding, and it is expected to be ready by the end of August.

It is remarked that the *scavenging* of the district should be done more efficiently, and that a *Refuse Destructor* is urgently needed.

There are 53 registered milk sellers in the district. All the premises were regularly inspected, and the occupiers required to comply with the regulations made under the *Dairies, Cowsheds, and Milkshops Order*.

The eight Common Lodging-Houses were frequently visited during day and night, and were found *clean, well-ventilated, and not over-crowded*. Regulations for the guidance of the keepers are placed in each of them.

The 75 licensed *Seamen's Lodging-Houses* are highly satisfactory, and no case of infectious disease occurred in any of them.

During the year the Barry Urban District Council Bill became an Act of Parliament, and thereby many additional and important powers in matters sanitary and otherwise have been secured.

IMPROVEMENTS.

These are not specified in the Report, but from personal knowledge I can say that they are very many.

REQUIREMENTS.

- (1) Infectious Diseases and Small Pox Hospitals.
- (2) A Refuse Destructor.
- (3) More efficient scavenging.

REMARKS.

The Report is printed, and appended is a tabular statement compiled by Mr. Leyshon, the Head Inspector, of the good work done under his supervision.

Also, particulars of the rainfall at the Biglis Pumping Station are supplied by the Water Engineer, Mr. E. W. Waite, A.M.I.C.E.

BRIDGEND.

Medical Officer of Health—WYNDHAM RANDALL, M.R.C.S., L.R.C.P.

Area in acres, 629.

				1891.				1896.
Population	...	...	...	4,896	...	...	...	6,458 (estimated).
Birth-rate, 28·8.	* Death-rate, 16·7.			Zymotic death-rate, 1·0.			Infant mortality-rate, 166.	
	Phthisis death-rate, 1·5.			Respiratory diseases death-rate, 2·3.				

The Infant mortality-rate is somewhat in excess of that for England and Wales. The others are satisfactory in every respect.

INFECTIOUS DISEASES.

81 cases of infectious disease were notified, including *Small Pox* (21 cases and 1 death), *Scarlet Fever* (32 cases), *Enteric Fever* (23 cases and 2 deaths), and *Erysipelas* (5 cases). Two deaths are attributed to *Whooping Cough*, and 2 to *Diarrhæa*.

Small Pox.—The Report of Dr. Randall on the Small Pox epidemic is complete and most instructive, and I beg leave to quote portions of it. When the first case broke out on 7th January, in an unlicensed lodging house

“ Medical Officers of Health on the line of the itinerary of the patients were written to.

The Medical Officer of the County Council was informed of the outbreak by telegram.

The Board of Guardians supplied rations of food to the persons in quarantine.

A special meeting of the District Council was called, and I urged upon the members present the necessity for the provision of a building for isolation purposes.

This necessity I have called attention to repeatedly, annually, during many past years.

* The 15 deaths which occurred at the Workhouse among an average daily population of 105 are included in the total deaths on which the mortality-rates are based.

No Isolation Hospital was provided until after the lapse of nearly six weeks. During this period four fresh cases were reported."

"It seems unreasonable that Sanitary Authorities should be put to so much anxiety and expense, that could so readily be avoided by Boards of Guardians of the poor strictly enforcing the provisions of the Vaccination Acts.

In regard to the severity of the disease relative to vaccination, the vaccinated cases were mild and discrete, particularly the re-vaccinated and the one vaccinated in five places in infancy.

"The unvaccinated were severe and confluent, and gave rise to much anxiety."

"The lessons instilled by the epidemic in respect to dealing with infectious disease in the future, in addition to the utility of vaccination and re-vaccination as a preventative of Small Pox, are:—

- (1) The necessity of providing a disinfecting chamber, with bath attached.
- (2) The advisability of obtaining a destructor for destroying un-disinfectable articles, and refuse.
- (3) A properly equipped Ambulance.
- (4) Putting the law in force with respect to unlicensed lodging houses.
- (5) There is no dead house in connection with the Hospital, and we should have been placed in a very awkward predicament had death unfortunately occurred."

Details of expenditure attending the Small Pox outbreak, are as under:—

				£	s.	d.
Establishment	...	...	...	...	400	4 7
Maintenance	...	...	...	...	240	12 10
Disinfection	...	...	...	...	22	7 11
Compensation	...	...	...	...	161	17 1
To this must be added Disinfector	...		...	...	269	5 0
Shed, &c.	...	...	...	...	29	5 0
				<hr/>		
				£1,123 12 6		

Equal to a Rate of 1s. 3d. in the £.

The Hospital and Disinfector have recently been taken over by the Combined Hospital District Committee.

Had the isolation accommodation been in readiness when the first case occurred, it is probable that the spread of the disease might have been prevented, and it is to be hoped that other Authorities will benefit by the bitter experience of Bridgend.

Whilst dealing with Scarlet Fever the Medical Officer of Health writes:—

"On an outbreak of Scarlet Fever being notified, the masters of schools in the district were communicated with and directed not to admit any members of infected households for two months.

The parents were advised as to strict isolation for two months, and as to the disinfection of persons and clothing; but such precautions are comparatively useless until such time as removal to an Isolation Hospital can be effected."

With respect to the 23 cases of Enteric Fever the Medical Officer of Health observes :—

“ Enquiries were made as to the water, milk, and food supplies in each case, and suspicion as to any of these was reasonably excluded.

- (1) Nine of the 23 cases occurred in houses situate on the higher elevations, or on the outskirts of the town. Nineteen were at a distance from the river.
- (2) Eleven cases were distributed in 11 different streets, one case only in each of the 11 streets. Two cases occurred in Brackla Street, 2 in Brook Street, 5 in Nolton Street, and 2 in Jenkins Street; all these streets are at some distance from the river and from the centre of the town. One case occurred at the workhouse and was brought in from the Rural District.
- (3) Twelve of the 23 cases broke out in houses where no obvious sanitary defect was noticeable. In several the drains had been thoroughly reconstructed within two years. The other cases were associated with choked drains, untrapped drains, or dirty surroundings, dirty back yards, &c.
- (4) In point of time, the distribution of the cases was :—3 in March, 1 in April, 1 in June, 6 in July, 3 in August, 5 in October, 3 in November, and 1 in December.

With regard to what I wrote in my Report for 1895, as to the beneficial effect of heavy rain and flood, flushing the drains and sewers, it is again noticeable that after the flood in the river that occurred in the latter part of September only 4 cases were notified, which may not be held to have contracted the infection beforehand, and of these 4 cases 1 was imported from the Rural District, 2 were associated with choked drains, and 1 with choked w.c., having no flushing cistern, and no fresh air inlet to the drain.”

GENERAL CONDITIONS.

The *water supply* was, as usual, satisfactory—and as plentiful all through the long continued drought of last summer as at other times.

The general sanitary state of the district has been considerably improved during the year—many new and good labourers' dwellings, supplying a long-felt want, have been erected. Others have been rebuilt and improved in several instances. Sewers have been laid down, with man-holes, flushing chambers, and ventilating shafts. Drains have been re-constructed and ventilated, new w.c.'s erected, and many others furnished with flushing cisterns, cesspools have been filled in, and many house drains connected with the sewers.

It is stated also that there are still several dwellings which should be closed, such as three cottages in Nolton Street, some in Nolton Passage, Chapel Street, and the Square, Newcastle.

IMPROVEMENTS.

SEWERS.—Caependre Estate, viz., Grove Road and back roads :—Two sewers from Ewenny Road to Merthyrmaur Road, one 9in. and one 12in., with five man-holes and four flushing chambers, five 6in. ventilating shafts, and two 4in. West end of South Street and St. Marie Street, and North side of South Street :—9in. and 6in. sewer laid, two man-holes, one flushing chamber, and one 6in. and two 4in. ventilators. Lane behind Railway Inn :—sewer re-constructed, one man-hole, one flushing chamber, and one 4in. ventilating shaft.

NEW ROADS MADE.—Caedre Street and back lanes, back lanes at Ewenny Road, lane behind Railway Inn.

Four new w.c.'s erected, 41 w.c.'s furnished with flushing cisterns, 32 cesspools filled in, 63 house drains connected to sewer.

REQUIREMENTS.

- (1) A system of Sewerage.
- (2) Brook Street and road behind Coity Road should be properly made.
- (3) Regulations under the Dairies, Cowsheds, and Milkshops Order, and Bye-laws under Sec. 23 of the Public Health Acts Amendment Act, 1890, as to the proper flushing of w.c.'s and the paving of back-yards, courts, &c.
- (4) The discontinuance of tipping refuse at Pwlllyberllan.
- (5) The closure of dilapidated dwellings.
- (6) A hot-air destructor, and covered iron buckets for the removal of infected excreta.

The Isolation Hospital, I infer, will shortly be erected for the combined Hospital District, with, I trust, satisfactory results in the diminution of infectious disease.

REMARKS.

Appended is an exhaustive Report by the Sanitary Inspector.

BRITON FERRY.

Medical Officer of Health—E. VERNON PEGGE, M.R.C.S., L.R.C.P.

Area in acres, 1,381.

				1891.					1896.
Population	...	...	...	5,779	...	...	...	8,000	(estimated).
Birth-rate, 29·7.	Death-rate, 15·3.	Zymotic death-rate, 0·6.				Infant mortality-rate, 155.			
Phthisis death-rate, 0·8.		Respiratory diseases death-rate, 3·5.							

The above statistics are satisfactory.

INFECTIOUS DISEASES.

97 Cases of Infectious Disease were notified, including *Scarlet Fever* (71 cases,) *Diphtheria* (6 cases), *Membranous Croup* (6 cases and 3 deaths), *Typhoid Fever* (3 cases), *Puerperal Fever* (3 cases), and *Erysipelas* (8 cases and 2 deaths). Three deaths were due to *Whooping Cough* and 2 to *Diarrhœa*.

A mild epidemic of *Scarlet Fever* occurred during the summer and latter part of the year. The cases, numbering over 70, were of a mild type, and no deaths were registered as due to this cause.

Whooping Cough also was very prevalent during the latter part of the year. A Temporary Infectious Diseases Hospital has been erected at Giant's Grave, and the Medical Officer of Health considers "the accommodation highly satisfactory, and quite adequate for the requirements of the district."

GENERAL CONDITIONS.

There is still a demand for more house accommodation, though a number of dwelling houses have been erected during the year.

The back lanes and side streets require more attention.

It is stated that most of the existing dwellings are in a satisfactory condition, there being a few exceptions, notably "George's Row." Two houses in this Row are in a very dilapidated condition.

The *Slaughter Houses*, though not always the cleanest, are generally kept in as sanitary a condition as such structures can be. A Public Slaughter House is much needed.

The *Cowsheds* are in a satisfactory condition, and the milk has been good throughout the year.

The *Bakehouses* also were inspected and found satisfactory.

Water Supply.—During the dry summer the greatest inconvenience was experienced through the inadequate supply.

The *Scavenging* has been more satisfactorily carried out than heretofore.

Grant's Grave is still without a system of sewerage, and without a supply of water.

IMPROVEMENTS.

A good deal of work has been done in improving the streets and pavements.

The w.c.'s and flushing tanks are much improved.

REQUIREMENTS.

- (1) An efficient supply of water.
- (2) The improvement of private streets and back lanes.
- (3) A Public Slaughter House.
- (4) The water supply and drainage of Giant's Grave.

CAERPHILLY.

Medical Officer of Health—T. W. THOMAS, M.R.C.S., L.S.A.

Area in acres, 17,000.

	1893	1896.
Population	14,000	14,000 (estimated).
Birth-rate, 28.06.	Death-rate, 14.3.	Zymotic death-rate, 1.8.
	Phthisis death-rate 0.7.	Respiratory diseases death-rate, 2.9.
		Infant mortality-rate, 154.

These various rates are satisfactory. The infant mortality-rate shews a marked decrease on that for 1895. The principal causes of deaths were Bronchitis, Phthisis, Cardiac Disease, Whooping Cough, Cancer and Measles.

INFECTIOUS DISEASES.

109 notifications were received during the year. These were made up of *Scarlet Fever* (68 cases and 2 deaths), *Diphtheria* (26 cases and 1 death), *Membranous Croup* (4 cases and 1 death), *Typhoid Fever* (3 cases, all fatal), and *Puerperal Fever* (3 cases, all fatal). 5 deaths were registered as caused by *Measles*, 8 by *Whooping Cough*, and 3 by *Diarrhœa*.

Scarlet Fever was prevalent in various localities, especially in the Town Ward (including Senghenydd), Ystrad, and Taff's Well Wards.

Diphtheria was prevalent in the Town and Ystrad Wards. In one instance it broke out in a farm house from which milk was purveyed, but precautions were ordered to be observed that the milk should not be brought within the precincts of the house. There was no spread in this instance. At the School-house, Llanbradach, the drainage, which was defective, played an important part.

Fortunately, only three cases of *Typhoid Fever* were notified, two being in the Town and one in Taff's Well Ward. With respect to the Taff's Well Ward case, the Medical Officer of Health writes:—"This offers a striking contrast to our past experience, thanks, I believe, to a more wholesome water supply."

The Midwives in attendance on the *Puerperal Fever* cases were ordered to abstain from attending other cases for a month.

Measles and *Whooping Cough* prevailed during the year.

Diarrhœa was not common, and the three deaths assigned to it were in infants, and improper food had probably something to do with it.

Influenza was prevalent during the early part of the year.

GENERAL CONDITIONS.

Town Ward, including Caerphilly and Senghenydd:—

The *Drainage* of both places has been greatly improved; some 520 yards of new sewer were laid by the Council at Senghenydd, 1,800 yards by private owners, and the majority of the houses are now connected with the mains, which, unfortunately, still empty their contents, untreated, to the Cledr and Aber brooks.

Of the *Water Supply*, the Medical Officer of Health writes thus:—"Nothing has, unfortunately, been done to extend our supply since the formation of the Board (1893), and bitter was the experience of many during the drought last summer. Houses were built with the latest sanitary improvements, but there was no water for flushing purposes."

The *Removal of Refuse* is now carried out very satisfactorily, and there is a Scavenger employed for Senghenydd.

The condition of Stanley Terrace, Pwllypant, is much improved through the connection of the w.c.'s with the sewer. Unfortunately, here the scarcity of water again prevents the closets, &c., being properly flushed.

The state of *Park Road*, Senghenydd, is disgraceful, especially near the Post Office.

None of the *slaughter houses* meet the requirements of the Local Government Board. A public one is needed.

The *Common Lodging-house* is satisfactory.

Ystrad Ward.—Llanbradach is much improved as regards its drainage.

The removal of refuse is more effectual than formerly.

Nelson suffered very much from last summer's drought. The drainage of this village is very unsatisfactory, and possibly a separate scheme would best meet the difficulty. The only *slaughter house* here is totally unfit for the purpose.

Taff's Well Ward, including the villages of Nantgarw, Glanyllyn, Taff's Well and Tongwynlais.

The *water supply* is much more satisfactory than heretofore. There are still several houses unconnected with the water main.

Of the *Drainage* the Medical Officer of Health writes thus :—"The question of drainage still hangs fire, and should long since have been disposed of. It must be six months ago since an Inquiry was held by a Local Government Board Inspector. The plans were approved, and contract let, but *no further move* has been made."

Dairies, Cowsheds and Milkshops Order.—The regulations made under this Order have not been advertised at all.

Rivers Pollution Acts.—The nuisance caused by the coal-washing machine at Llanbradach is now much abated through the Company sending the waste water over the tip and thereby filtering it.

Several of the streets are an eyesore as well as a disgrace, and the provisions of the "Private Streets Works Act," have not been taken advantage of.

IMPROVEMENTS.

- (1) 2320 yards of new sewers at Senghenydd provided.
- (2) 300 yards of surface drains in Heol Fawr, and 80 yards of sewer at the back of Penuel Road, Nelson. Also an Urinal near the Royal Oak.
- (3) The water supply of Taff's Well Ward is much improved.

REQUIREMENTS.

- (1) Isolation Hospital, Ambulance, &c.
- (2) More adequate supplies of water for Caerphilly, Senghenydd, Pwllypant, and Nelson.
- (3) The sewerage of portions of Caerphilly, Aber, Nelson, Llanbradach, Pwllypant, and of the villages of the Taff's Well Ward.
- (4) Public Slaughter Houses at the various Centres.
- (5) The discontinuance of the pollution of rivers by sewage, &c.

REMARKS.

The Report is not printed. Appended, as usual, is an exhaustive report by the Sanitary Inspector.

COWBRIDGE (BOROUGH).

Medical Officer of Health—A. W. SHEPERD, L.R.C.P.I., L.R.C.S.

Area in acres, 84.

1891.

1896.

Population

...

...

1,360

...

...

...

1,377 (estimated).

Birth-rate, 22.5.

Death-rate, 13.7.

Zymotic death-rate, 0.0.

Infant mortality-rate, 32.

Phthisis death-rate, 1.4.

Respiratory diseases death-rate, 2.9.

The above statistics are highly satisfactory. No death resulted from any infectious disease. The general death-rate shews a very appreciable decrease on that for 1895 (16.0) and 1894 (21.6).

INFECTIOUS DISEASES.

5 cases were notified—1 *Diphtheria*, 1 *Enteric Fever*, and 3 *Erysipelas*. There was no death.

The *Diphtheria* case could not be definitely traced. The *Enteric Fever* case was imported.

In compliance with the Medical Officer of Health's recommendations in his last Annual Report for 1895, a leaflet setting out the provisions of the "Notification Act" was left at every house in the Borough.

GENERAL CONDITIONS.

A marked improvement is reported as regards the abating of the nuisance caused by the emptying of slops in the streets, in the removal of refuse, condition of privies, &c.

Eave troughs and downfall pipes have been provided in several cases. Several cottages were remodelled and repaired.

The *Lodging Houses* were frequently inspected, especially during the Small Pox scare, and invariably found clean, tidy, and well-ventilated.

The drainage is *statu quo*, and the *water supply question* is still under consideration but without any tangible result. When the Town Clerk has made enquiries as to land charges, something definite will be done.

REQUIREMENTS.

- (1) A supply of pure and wholesome water.
- (2) Stricter observance of bye-laws.
- (3) Better light and ventilation in some of the old houses.
- (4) A system of drainage.
- (5) A Public Slaughter House.

REMARKS.

Appended is a report from the Sanitary Inspector, showing the work done in this officer's department.

GARW AND OGMORE.

Medical Officer of Health—D. J. THOMAS, M.R.C.S., L.R.C.P.

Area in acres, 17,926.

	1891.	1896.
Population	13,080	16,647 (estimated).
Birth-rate, 39·7.	Death-rate, 16·2.	Zymotic death-rate, 1·2.
		Infant mortality-rate, 181.
	Phthisis death-rate, 0·5.	Respiratory diseases death-rate, 2·2.

With the exception of the Infant mortality-rate, which is considerably higher than that for England and Wales, the above rates are very satisfactory, and a striking improvement on former years. The general death-rate shews a decrease of 7·5 per 1,000 on that for 1895. The decrease was most marked in the mortality from zymotic diseases. In 1895 Measles caused 24 deaths, but only 1 this year, and Whooping Cough caused 14 and only 1 this year.

INFECTIOUS DISEASES.

103 cases were notified, including *Scarlet Fever* (90 cases and 5 deaths), *Membranous Croup* (3 cases and 6 deaths), *Typhoid* or *Enteric Fever* (9 cases and 2 deaths), and *Puerperal Fever* (1 case and 1 death). 1 death is attributed to *Measles*, 1 to *Whooping Cough*, and 5 to *Diarrhæa*.

Scarlet Fever was prevalent throughout the year in the district generally. Great carelessness was evidenced about proper isolation.

Evidently all the cases of *Membranous Croup* were not notified, for the number of deaths doubled that notified. There was no trace of infection from one place to another, and it did not assume an epidemic form. All children from infected houses were kept at home.

Whilst dealing with the *Typhoid Fever* cases, the Medical Officer of Health remarks that *all* the Ogmore Ward cases occurred at Tynewydd in the same streets as those affected during several years past, viz., Fronwen Row, High Street, Glyn Street and the Crossing, and although the drainage, &c., has been much improved of late, he is of the opinion that the water in that locality somehow or other becomes contaminated.

Two of the Garw cases occurred at the Riverside Huts, Pontycymmer, and in this connection the Medical Officer of Health writes thus:—"This fever has visited these houses more than once, and in my monthly Reports to the Council I called attention to the suspicious source of their water supply. I believe that the recurrence of fever in these Huts is due to the unwholesome water supply."

One case proved fatal from *Puerperal Fever*, and the Medical Officer of Health writes thus:—"This is the lowest number of deaths from this disease that has occurred in the district since the formation of the Board, and is due, chiefly, to increased care and cleanliness bestowed upon these cases. Since the midwives in attendance upon *Puerperal Fever* have been prevented from practising in the district for three months after each case, there is a marvellous decrease in the occurrence of this disease."

It will be remembered that this dreadful disease was endemic in this district some years ago, indeed it prevailed epidemically for a few years.

GENERAL CONDITIONS.

The condition of the district generally is said to be "very fair," and a gradual improvement is taking place yearly. More attention is now paid to the ventilation of drains, and systematic house inspection is carried out more regularly since the Inspector is devoting the whole of his time to the duties.

The amounts spent upon the improvements, are as follows :—

Private Improvements	...	...	...	...	...	£1,157
Public Improvements	...	...	...	...	...	896
Sewerage	...	...	...	...	...	200
Water Supply	...	...	...	...	...	300
Total	...	...	...	...	...	<u>£2,553</u>

The *Water Supply* is good and supplied from a safe source.

The village of Glynogwr was supplied during the year.

The Council have under their consideration a scheme for providing a Sewage Farm, near Brynmenyn, and bringing the sewage down from the Garw and Ogmore Valleys, to be treated there by land irrigation.

The *Scavenging* of ashes and refuse is well performed, and the old fashioned D traps are rapidly disappearing, and are being replaced by earthenware syphon traps.

The *Slaughter Houses* are frequently inspected. They are cleaner than formerly, but some of them are too near dwelling houses to be free from danger.

Of the proposed *Infectious Diseases Hospital*, it is stated that it has not yet evolved from the paper stage, and in the case of an outbreak of Small Pox or any other serious epidemic, there is no means of isolation in readiness.

REQUIREMENTS.

- (1) A system of sewerage.
- (2) Infectious Diseases Hospital.
- (3) A Public Abattoir for each Ward.
- (4) The destruction of the various Refuse Tips by fire.
- (5) The printing and distribution of Handbills, giving instructions how to act in cases of infectious disease.
- (6) The better ventilation of house drains—a foul air outlet and a fresh air inlet for each new house, and for every six houses in streets already built.

GLYNCORWG.

Medical Officer of Health—C. W. HEMMING, L.R.C.P., L.R.C.S.

Area in acres, 10,220.

		1891.		1896.
Population	... ..	3,800	... ..	5,500 (estimated).
Birth-rate, 42·54.	Death-rate, 16·18.	Zymotic death-rate, 3·6.	Infant mortality-rate, 186.	
	Phthisis death-rate, 0·18.	Respiratory diseases death-rate, 3·6.		

The Zymotic and Infant mortality-rates are somewhat high, and compare unfavourably with those for England and Wales.

INFECTIOUS DISEASES.

63 cases of Infectious Disease were notified. These consisted of *Scarlet Fever* (50 cases and 1 death), *Typhoid Fever* (2 cases and 1 fatal), *Puerperal Fever* (6 cases and 2 deaths), 4 deaths are attributed to *Measles*, 8 to *Whooping Cough*, and 4 to *Diarrhæa*.

Some cases of *Scarlet Fever* occurred at a farm where dairy cows were being daily milked. When the disease was reported, the necessary precautionary measures were taken so as to ensure the milk being uncontaminated prior to its distribution, and no cases could be traced to this source.

In April the malady was notified at Cymmer, and the whole village became invaded. Children from infected houses were prevented from attending school. Although disinfectants were freely and gratuitously distributed, and other precautionary measures observed, 39 persons suffered from it.

5 of the 6 cases of *Puerperal Fever* occurred at Abergwynfi, and of these 1 was fatal. 1 fatal case also occurred at Glynorwg. In all cases the midwives in attendance were cautioned not to attend other cases for at least 6 weeks, and although some trouble was experienced with one of them, luckily there was no serious result from her disobedience.

The 2 cases of *Typhoid Fever* at Abergwynfi were imported.

Whooping Cough was very prevalent throughout the District, and 8 deaths were registered as due to this cause. All the patients were young children, and most of the cases were complicated with diseases of the respiratory organs.

GENERAL CONDITIONS.

The *Water supply* of Cymmer in particular, and of other localities, has been inadequate for some time. The matter has been seriously taken in hand, and plans, &c., submitted to the Local Government Board, for supplying Cymmer, &c., from the Caerau springs have been approved, and the works will be commenced at an early date.

A supply has been provided for Tunnel and Station Terraces, Abergwynfi.

A *Scheme of Sewerage* for the more populous centres is under consideration, and it is to be hoped that it will soon be constructed, and in such a way as to prevent the wholesale pollution of the rivers by sewage, &c., which is at present allowed to take place.

The *Scavenging* has been better performed.

IMPROVEMENTS.

At Abergwynfi—207 feet of 9in. drains.
 173 feet of 6in. drains.
 2 street gullies.
 450 yards of 1½in. water mains.
 2 brick tanks.
 Slaughter house repaired.
 Refuse tips daily disinfected.

At Cymmer—213 feet of 9in. drains.
 30 feet of 6in. drains.
 4 street gullies.
 1 cellar dwelling condemned.
 Slaughter house repaired

At Glyncorwg—34 feet 12in. drains.
 150 feet 6in. drains.
 Drains of 5 houses trapped.
 55 yards of water mains.
 20 yards of foot culvert.

Plans of Water Scheme sent to Local Government Board.

REQUIREMENTS.

- (1) A system of sewerage for the populous centres.
- (2) An adequate water supply for Cymmer and Abergwynfi.
- (3) The closure of dwellings and cellars that are unfit for human habitation.
- (4) Isolation Hospital, a Disinfecting Apparatus, and Ambulance.
- (5) Public Slaughter Houses.

REMARKS

This Report is in *Manuscript*, that for 1895 was in *Print*.

MAESTEG.

Medical Officer of Health—WYNDHAM RANDALL, M.R.C.S., L.R.C.P.

Area in acres, 6,709.

		1891.		1896.
Population	...	9,417	...	11,000 (estimated).
Birth-rate, 39·4.	Death-rate, 18·8.	Zymotic death-rate, 1·5.	Infant mortality-rate, 168.	
Phthisis death-rate, 1·0.		Respiratory diseases death-rate, 4·3.		

INFECTIOUS DISEASES.

94 cases were notified under the Infectious Disease (Notification) Act, consisting of *Scarlet Fever* (93 cases and 5 deaths), and *Enteric Fever* (1 fatal case). 1 death was attributed to *Continued Fever*, 3 to *Whooping Cough*, and 3 to *Diarrhæa*.

The number of cases of *Scarlet Fever* notified was 93 as compared with 258 in 1895, and 46 in 1894. The disease was present throughout the year, with the greatest number of cases in January and November. The usual precautionary measures were observed, but the Medical Officer of Health states that such precautions were comparatively useless in the absence of an Isolation Hospital.

GENERAL CONDITIONS.

Water Supply.—All houses in the district, except some 30 at Blaen Caerau, have water laid on, and a loan has been applied for to supply these.

No regulations under the "Dairies, Cowsheds, and Milkshops Order" have been made.

All the *Slaughter houses* are private and satisfactory. A public slaughter house is much needed.

Two *Common Lodging-Houses* have been closed, and there only remains the so-called Model Lodging House, which, as a matter of fact, is a typical Common Lodging House, and should be registered as such.

(Since Dr. Randall wrote his report the case was brought before the Magistrates at Bridgend, and it was decided that the Model Lodging House was, to all intents and purposes, a Common Lodging House. The owner, who was also the occupier was fined and ordered to register the House as a Common Lodging House.)

Manure heaps and pigstyes are found too near dwellings and roads, and the bye-law requiring pigs to be kept at a certain distance from dwellings, is not enforced.

A *Sewerage Scheme* is still an urgent requirement of this District.

Seven houses are named as unfit for human habitation, viz.:—1 and 3 Garnlwyd Cottages, 14, Temple Street, 91, 92, 93, and 97, Bethania Street. *All of them, although condemned, are still occupied.*

IMPROVEMENTS.

- (1) Boundary wall in Bridgend Road—£21 5s.
- (2) 800 yards of kerbing and channelling in various places—£225 12s.
- (3) 270 yards of 9-inch sewer at back of Station Street—£32 11s. 6d.
- (4) 700 yards of 6-inch cast iron water-main from Blaen-Llynvi to source of Llynvi river—£207 10s.
- (5) Widening and lifting of Bridgend road at Oddfellow's Rest.
- (6) A water supply to 2,000 houses from the Council's main—£570 10s.
- (7) The provision of Fire appliances and the formation of a Fire Brigade.
- (8) The construction of 9-inch storm water drains in Caerau Road.
- (9) Many private Improvements.

REQUIREMENTS.

- (1) A system of sewerage for the whole district.
- (2) The closure or repair of houses unfit for occupation.
- (3) The paving, channelling, &c., of many roads and streets—public and private.
- (4) The provision of a Public Abattoir.
- (5) The scavenging of back areas and privies.
- (6) The enforcement of bye-laws as to pigstyes—their cleansing and distance from dwellings.
- (7) The provision of an Isolation Hospital, Ambulance, and Disinfecting Apparatus.
- (8) Greater promptitude in the removal of manure, house refuse, and other nuisances.
- (9) Regulations under the Dairies, Cowsheds, and Milkshops Order, and bye-laws, under Sec. 23, Public Health Acts Amendment Act, as to proper flushing of w.c.'s, the paving of back yards, courts, &c.

MARGAM.

Medical Officer of Health—J. H. DAVIES, M.D.

Area in acres, 18,347.

		1891.		1896.
Population	...	6,247	...	7,500 (estimated).
Birth-rate, 36.0.	Death-rate, 13.6.	Zymotic death-rate, 1.8.	Infant mortality-rate, 157.	
	Phthisis death-rate, 0.04.	Respiratory diseases death-rate, 2.1		

These various rates are satisfactory, and, with the exception of the Infant mortality-rate, are considerably lower than those for England and Wales.

INFECTIOUS DISEASES.

The notified cases of infectious diseases numbered 150, as compared with 63 in 1895; the mortality in 1896 is however smaller than in 1895, being 14 and 24 respectively. These included *Diphtheria* (23 cases and 2 deaths), *Typhoid Fever* (6 cases and 2 deaths), *Membranous Croup* (8 cases and 3 deaths), *Scarlet Fever* (90 cases and none fatal), *Puerperal Fever* (6 cases and 2 deaths), and *Erysipelas* (17 cases). One death was caused by *Measles*, and 6 by *Diarrhœa*.

The first case of *Diphtheria* happened in High Street, Taibach, the second at Morfa. "There is no doubt that all these cases originated within the district." Seven cases were removed to the Sanatorium, and all recovered. Injections of antitoxin were administered in all the cases, and the good result obtained may be attributed to this.

The first case of *Typhoid Fever* happened at No. 1, Pera Row; the next three at Pentwydd Waelod. The former is attributed to local sanitary defects, and the latter to a continuation of the outbreak in December, 1895.

The chief causes of the increased mortality from *Diarrhœa*, which occurred in the summer months and early autumn, were tainted milk and injudicious feeding.

The midwives in attendance on the *Puerperal Fever* cases were forbidden from practice for three months.

There was a great number of *Measles* scattered over the district, fortunately of a very mild type, and not accompanied by serious complications.

The first case of *Scarlet Fever* occurred at No. 14, Curwen Terrace, Port Talbot, the next at Ynys-y-gwas; it then spread from these centres all over the district and remained throughout the year. It was of a mild type and caused no death.

A detailed account of the precautions taken against the spread of infectious diseases is given.

The New Infectious Diseases Hospital was completed and ready for the reception of patients in October, and the following description of it is given in the Report :—

“ The Isolation Hospital which was in course of construction at the date of my last Report, has been completed, and was ready for the reception of patients in October last. It consists of Wards for the isolation of Typhoid, Diphtheria, and Scarlatina cases, and of separate Pavilion for Small Pox, and is situated 200 yards from the main block. It would have been erected at least 400 yards away, had a suitable site been available. It is provided with the necessary baths, and with a mortuary, where deceased patients may be seen by their friends without any danger from contact. The administrative part consists of a house at a short distance from the Hospital, it affords accommodation for Matron, Nursing Staff, and the Porter. It is suitably furnished, is replete with every necessary, and it is certainly a well-appointed institution. It is well supplied with pure drinking water, and ample provision has been made against an outbreak of fire. The Wards are heated by means of a low pressure hot-water apparatus. A Washington-Lyon's disinfecting apparatus has been erected for the disinfection of clothing, bedding, &c.

Telephonic communication has been established between the Hospital and the Medical Officer of Health's Surgery, which has been found to be of great service. It is also provided with an Ambulance Carriage for the removal of patients to-and-fro.”

GENERAL CONDITIONS.

The whole district (except one or two of the outlying localities) is well supplied with drinking water. That from Cwmgwyne Service Reservoir fell short during the hot months through deficiency of storage. There are millions of gallons running to waste daily, sufficient to fill a storage reservoir large enough to supply the district for several months.

All the *Slaughter Houses* are described as “ well kept, thoroughly clean, plentifully supplied with water, and properly paved and drained.”

IMPROVEMENTS.

Many improvements have been made, the most important of which are :—

- (1) The laying of a 9-inch stoneware pipe conduit from reservoir to springs at Bryn.
- (2) Laying of a stoneware pipe conduit, about 650 yards long, to prevent the pollution of water at Cwmgwyne.
- (3) Extension of mains from Taibach to Groeswen.
- (4) Laying of 350 yards cast-iron main for the supply of Ffrwdwyllt Street.

- (5) Laying of three cast-iron mains for the supply of about 100 houses at Margam Terrace.
(The parts of the district now without supplies are: Penbryn, Caerhendy, and Mynyddbychan.)
- (6) The relaying of defective sewer at Maes-y-Cwrt, Taibach.
- (7) New surface water drain at Cotton Row, Taibach.
- (8) A host of other improvements (vide Reports) too numerous to be enumerated here, including the new Fever Hospital, erected at a cost of £3,000.

REQUIREMENTS.

- (1) Refuse Destructor.
- (2) The printing of handbills giving rules for the feeding of infants.
- (3) The addition of Measles and Whooping Cough to the notifiable diseases.
- (4) The framing of bye-laws to enforce periodical cleansing of cesspools, earth and pail closets, under Sec. 44 Public Health Act, 1875.
- (5) The framing of bye-laws as to paving of yards, Sec. 23, Public Health Acts (Amendment) Act, 1890.
- (6) That the Council take into consideration the desirability of enforcing the laying of a separate water supply to each house in the district, where practicable.
- (8) Increased water storage.
- (9) Systematic house-to-house inspections to be made every three months by the Sanitary Inspector.

REMARKS.

Appended is an exhaustive Report from the Sanitary Inspector.

MERTHYR TYDFIL.

Medical Officer of Health—THOMAS J. DYKE, F.R.C.S.

Area in acres, 17,714.

			1891.				1896.
Population	...	...	58,080	...	...	...	68,437 (estimated).
Birth-rate, 34·1.	Death-rate, 20·0.		Zymotic death-rate, 3·7.				Infant mortality-rate, 217.
	Phthisis death-rate, 1·4.		Respiratory diseases death-rate, 3·8				

The general death-rate is the lowest but one, viz., 19 in 1894, that Dr. Dyke has reported during 32 years. The zymotic and infant mortality-rates are excessively high, and compare unfavourably with those of the County, and England and Wales.

INFECTIOUS DISEASES.

599 cases were notified as compared with 537 in 1895. Of these 132 happened in the first quarter, 110 in the second, 150 in the third, and 201 in the fourth. These included *Small Pox*, 10; *Scarlet Fever*, 206; *Diphtheria*, 87; *Typhoid Fever*, 187; *Puerperal Fever*, 19; and *Erysipelas*, 92. The deaths due to these were—to *Small Pox*, 1; *Scarlet Fever*, 4; *Diphtheria*, 51; *Typhoid Fever*, 21; *Puerperal Fever*, 3; and *Erysipelas*, 4. 16 succumbed to *Measles*, 13 to *Whooping Cough*, and 117 to *Diarrhœa*.

All the *Small Pox* cases were effectually isolated at the Dowlais Fever Hospital.

Scarlet Fever prevailed in different parts of Dowlais throughout the year.

Those affected were, for the most part, of the school-going ages.

In dealing with Diphtheria and Typhoid Fever, Dr. Dyke writes :—

“ Diphtheria :—Of this malady 46 cases under 5 years of age were notified, and 41 above 5=87. The rate of mortality of the cases was 58 per cent.

Typhoid Fever cases reported numbered 16 under 5 years, and 171 above 5=187. The rate of mortality was 11·2 per cent.

As to these two last-named maladies my observations during sixty years of work amongst the population of Merthyr are, that they have always been associated with the presence of *filth nuisances*. Before the supply of water from the mountain reservoirs in 1865-66, and the formation of drains and sewers in 1866-70, these sicknesses were connected with the water used being fouled by drainage from cesspools. When *pure water* was supplied in 1865-66, these two maladies became for a time less frequent, and while the drains and sanitary appliances continued in good order, this immunity from both maladies was observed. Recently a continuous recrudescence has been noticed and reported to you in the quarterly and annual reports. The *occasions* of the increase have also been reported, namely, the escape of sewer gases into the closets and into houses from broken closet arrangements, and from broken and not fitted drainage pipes. As you are well aware, your Sanitary Inspector has reported to you many hundreds of cases in which these escapes of sewer gases have been found, and the nuisance abated; the sequence of the abatement being the cessation of the spread of the maladies.

Any hope that can arise in the minds of the public for the cessation of these maladies is, I fear, a vain one, for the materials used for sanitary ware are so fragile, laid in haste, on unstable foundations, fitting imperfectly, allowing the earth adjoining a junction to be constantly wetted with sewage, the syphon trap imperfect, the pan frequently broken by blows; all these co-existing in houses placed in a terrace or row, no provision for the inlet and outlet of atmospheric air (the beneficent destroyer of the bacteria of Diphtheria and of Typhoid). These original imperfections of the scheme of water carriage of sewage, namely, *without the supply of water to each place of convenience*, must, I fear, still continue, until the Sanitary Authority will face the necessary cost of supplying each such place with water to flush on each occasion of its use.

As long as it is *not* imperative to use materials and appliances really proper for these necessities to a water carriage of sewage, so long will the plagues of Typhoid Fever and of Diphtheria remain to produce disease and cause death.”

Further isolation accommodation is necessary. 77 cases were treated in the Isolation Hospitals of Merthyr and Dowlais.

GENERAL CONDITIONS.

Dowlais Division.—Scarlet fever was prevalent here through the year, also 46 cases of Diphtheria were reported. This district was recently sewered, and the dead ends of the sewers were ventilated in the Spring, and subsequently the cases were fewer. Of the 52 cases of Enteric Fever that occurred in this district, very many were at Cwmrhydybedd, and are attributed to sewer gases.

It was also prevalent at Gas Row, where house refuse is tipped, and where the sewer gratings were not securely trapped and not ventilated.

A marked improvement is reported in the appearance of Morlais brook.

Penydarren Division.—A marked absence of contagious disease.

Tydfil's Well Division.—A large number of new houses. In the older parts Typhoid Fever prevailed, and at the new houses Diphtheria occasioned many illnesses and deaths. Leaky sewers and drains are common.

Merthyr Town Division.—Imperfect sanitary arrangements are common here. These, after notice sent, were abated, and freedom from Diphtheria and Typhoid Fever resulted.

Gellideg Division.—Free from epidemic disease.

Troedyrhiw Division.—The sewerage of Plantation Place, Ash Road, Newtown Street, Abercanaid, and Old Abercanaid, completed.

The smoke test has served to indicate the position of many imperfections in the drains and sewers on all sides, and has been specially useful in testing those laid down in connection with new buildings.

During the dry months the *water* had to be "turned off" during the night and for hours each day, and in all occupations where the use of water was needed, stoppage of works took place, and much poverty was experienced.

Good progress has been made in the construction of the new reservoir.

The rainfall at Pentwyn Reservoir, Neuadd Reservoir, and Brynteg, Merthyr, is recorded in Part I.

IMPROVEMENTS.

The sewerage of Penheolgerrig, Merthyr, Ash Road, Troedyrhiw, Upper Abercanaid, and Aberfan.

Twenty houses closed as unfit for habitation.

No others are specified.

REQUIREMENTS.

Improvements to sewers and drains in many localities.

Extended isolation accommodation.

No others are specified.

MOUNTAIN ASH.

Medical Officer of Health—E. P. EVANS, M.R.C.S., L.R.C.P.

Area in acres, 10,554.

	1891.	1896.
Population	17,494	26,650 (estimated).
Birth-rate, 40·2.	Death-rate, 18·2.	Zymotic death-rate, 1·9.
		Infant mortality-rate, 220.
	Phthisis death-rate, 1·5.	Respiratory diseases death-rate, 3·2.

The general death-rate is high, and the Infant mortality-rate, excessively high.

INFECTIOUS DISEASES.

188 cases were notified as against 437 in 1895. These included *Scarlet Fever* (124 cases and 4 deaths), *Diphtheria* (6 cases and 4 deaths), *Membranous Croup* (9 cases and 10 deaths), *Typhoid Fever* (21 cases and 3 deaths), *Puerperal Fever* (2 cases), and *Erysipelas* (26 cases). 1 death was registered as due to *Measles*, 6 to *Whooping Cough*, and 22 to *Diarrhæa*.

2 cases of *Scarlet Fever*, 2 of *Typhoid Fever*, and 1 of *Erysipelas* were treated in the Infectious Diseases Hospital and all discharged convalescent.

Scarlet Fever was prevalent throughout the year, especially during the first quarter, when 63 cases were notified. 25 cases were notified in second quarter, 18 in third quarter, and 15 in the fourth quarter.

4 cases of *Diphtheria* at Aberdare Junction were attributed to an overflowing cesspool and an obstructed and defective drain. Disinfectants were liberally supplied.

GENERAL CONDITIONS.

The Medical Officer of Health writes :—" Most of the Urban District at the end of the year was in a satisfactory sanitary state, except that new portion at Aberdare Junction where there is still some difficulty experienced in disposing of its sewage. The water supply is abundant and of good quality. All the Slaughter houses and Bakehouses were examined at the end of the year, and all were found kept clean."

IMPROVEMENTS.

A new Disinfecting Apparatus.

Extension of sewer at Penrhiwceiber Road.

No others are specified.

REQUIREMENTS.

None are specified, but from personal knowledge of the district, I know that they are many.

NEATH BOROUGH.

Medical Officer of Health—JAMES ELIAS, M.R.C.S., D.P.H.

Areas in acres, 1,439.

	1891.	1896.
Population	11,059	12,000 (estimated).
Birth-rate, 36·3.	Death-rate, 18·5.	Zymotic death-rate, 1·5.
	Phthisis death-rate, 1·9.	Infant mortality-rate, 145.
		Respiratory diseases death-rate, 2·9.

These various rates are fairly satisfactory. The general death-rate is somewhat higher than that for England and Wales.

Twelve of the deaths occurred amongst persons not belonging to the district, so that the corrected death-rate would be 17·5.

INFECTIOUS DISEASES.

439 cases were notified during the year, and of these 327 were due to an epidemic of *Measles* which was prevalent during the early part of the year. There was also a mild epidemic of *Scarlet Fever*, 55 cases being notified. 4 deaths were caused by *Measles*, 7 by *Whooping Cough*, and 4 by *Diarrhæa*. The other cases notified consisted of *Small Pox* (3 cases), *Diphtheria* (7 cases and 1 death), *Membranous Croup* (2 cases and 1 death), *Typhoid Fever* (23 cases and 1 death), and *Erysipelas* (22 cases).

5 of the *Typhoid Fever* cases occurred on the green in Allen's Court, which was generally dirty and the closets in a filthy state.

The 3 *Small Pox* cases were isolated in the Borough Fever Hospital, and all the possible precautionary measures against its spread were rigidly and successfully observed. A house-to-house inspection along the south boundary of the town was made, where *Small Pox* was most likely to be carried in and several people were induced to be re-vaccinated. The Common Lodging Houses were visited every morning.

GENERAL CONDITIONS.

The quality of the *water* supplied to the town has been uniformly good. It was scarce, however, during the summer months, and had to be supplemented by pumping from local springs. To the end of April it is said to have been constant. During May there was an average daily supply for 4 hours. This was reduced to 2 hours during June, July and August. During September it gradually increased, and in the beginning of October it became constant, and remained so till the end of the year.

The new Reservoir is being constructed. This when completed will increase the storage supply from 70 to 130 days.

A thorough *inspection* of the district has been made.

The *Common Lodging Houses* are satisfactory except two. That in Castle Street is totally unfit for the purpose.

The condition of the 22 *Cowsheds* is, on the whole, satisfactory. A tendency to overcrowding was observed in some.

The condition of the *Bakehouses* is described as excellent.

The public *Abattoir* has been remodelled.

The *Scavenging* is well done.

IMPROVEMENTS.

On street paving works £2,000 have been expended.

The sewerage of Gnoll Park and Colliery roads.

The public slaughter-house remodelled.

The construction of the new Reservoir has been commenced.

11 houses at Bankside sewered and connected.

The Merra dwellings have been purchased by the Corporation and are to be pulled down.

38 dwellings at Pendre have been condemned.

The improvement of Allen's and Savour's Courts.

REQUIREMENTS.

- (1) The adoption of the Infectious Disease Prevention Act, 1890.
- (2) The making of bye-laws under the Public Health Acts (Amendment) Act, 1890.
- (3) Stricter supervision over the sanitary condition of the Elementary Schools.
- (4) Paving and surface drainage of the Courts and improvements in the w.c. accommodation of certain parts of the town.
- (5) The use of tuberculin in connection with the milk supply.

REMARKS.

The Report is in manuscript.

OYSTERMOUTH.

Medical Officer of Health—J. BEVAN, M.B., C.M.

Area in acres, 2,615.

			1891.				1896.
Population	...	...	3,598	...	...	...	4,167 (estimated).
Birth-rate, 26.	Death-rate, 9.9.	Zymotic death-rate, 0.7.	Infant mortality-rate, 45.				
	Phthisis death-rate, 0.9.	Respiratory diseases death-rate, 1.9.					

These various death-rates are highly satisfactory.

INFECTIOUS DISEASES.

31 cases were notified, viz., *Diphtheria* (10 cases and 1 death), *Scarlet Fever* (8 cases), *Small Pox* (6 cases), *Typhoid Fever* (3 cases and 1 death), and *Erysipelas*. One case of *Diarrhœa* also proved fatal.

6 cases of *Small Pox* were notified. The first case was imported from Gloucester. All the patients were removed to the Swansea Fever Hospital. They were all modified cases, and all recovered. Public vaccination was at once started, and 60 persons availed themselves of it. The stringent precautionary measures taken proved highly successful in preventing the spread of the disease.

GENERAL CONDITIONS.

Water Supply.—Since the utilization of the second stream at Caswell Bay, the supply from the Company's works has been better. It is still, however, limited to certain hours daily, and consequently intermittent. The mains have been extended to Chapel Street, and to the newly-developed building area around Langland.

More than a third of the houses are supplied with w.c.'s, most of these have cisterns. The remainder have pails, privy middens, or are drained into cesspools.

The *Scavenging* is very satisfactorily performed by the Council.

The houses in the whole district, excepting those at Village Lane and Pond Steps (many of which are uninhabited) are in a good condition. Two at Newtown have been condemned.

The main sewer has been extended to below low-water mark.

The condition of the *streets* falls far short of what could be desired ; kerbing and channelling would be a great improvement.

Only one of the three *Slaughter Houses* meet the requirements of the Public Health Acts. All, however, are well kept and frequently limed.

IMPROVEMENTS.

Kerbing and channelling Castleton.

The extension of sewer outfall completed.

The extension of the water mains to New Chapel Street, and to the newly-developed district at Langland.

Five houses condemned and closed.

Two new oil engines provided for pumping purposes by the Waterworks Company.

The Public Health Acts (Amendment) Act adopted.

REQUIREMENTS.

- (1) A constant water supply.
- (2) Extension of the drainage system, especially to Newton.
- (3) The Dairies, Cowsheds, and Milkshops Order put into force.
- (4) Provision for the isolation, &c., of infectious cases.

REMARKS.

Particulars of the rainfall are appended, showing that 38·02 inches of rain fell in 185 days at Newton, which is situated 281 feet above sea level.

No Report has been received from the Sanitary Inspector.

PENARTH.

Medical Officer of Health—R. F. NELL, M.R.C.S., L.S.A.

Area in acres, 2,798.

1891.				1896.			
Population	...	...	12,200	...	...	...	13,500 (estimated).
Birth-rate, 33·5.	Death-rate, 10·8.	Zymotic death-rate, 1·7.		Infant mortality-rate, 100.			
Phthisis death-rate, 0·9.		Respiratory diseases death-rate, 1·4.					

These various rates are exceedingly satisfactory.

INFECTIOUS DISEASES.

85 cases were notified, including *Scarlet Fever* (73 cases and 1 death), *Typhoid or Enteric Fever* (3 cases), *Diphtheria* (2 cases), and *Erysipelas* (7 cases).

The largest number of cases of Scarlet Fever was reported during March, and cases occurred all over the district, but more in the more densely populated localities than elsewhere. There was only one death attributable to this disease.

The 2 cases of *Diphtheria* were imported.

Diarrhæa was very prevalent during the summer months and caused 10 deaths, chiefly among young children.

GENERAL CONDITIONS.

The restrictions put upon the supply of water, whereby it became impossible to water the streets, produced a very disagreeable state of things.

The cleansing of streets, lanes, &c., has been better performed of late.

It is stated that the disposal of house refuse, &c., is conducted in such a way as to be a risk to the public health, and it is recommended to have it carted to a distance, or burnt in a Refuse Destructor.

IMPROVEMENTS.

The Medical Officer of Health regrets that he can report but few improvements.

Plans for an Isolation Hospital have been prepared, but matters have not progressed beyond the paper stage.

Attempts to ventilate some portions of the main sewer by shafts have been carried out with a fair amount of success.

REQUIREMENTS.

- (1) Infectious Diseases Hospital, with the necessary appurtenances.
- (2) The carting of refuse to a distance, or its treatment in a Destructor.

PONTYPRIDD.

Medical Officer of Health—HOWARD DAVIES, M.R.C.S., L.S.A.

Area in acres, 8,000.

			1891.			1896.
Population	...	...	19,971*	...	...	37,000 (estimated).
Birth-rate, 34·1.	Death-rate, 14·7.	Zymotic death-rate, 2·1.	Infant mortality-rate, 198.			
Phthisis death-rate, 0·8.		Respiratory diseases death-rate, 2·8.				

These rates, except the infant mortality-rate, are satisfactory.

* In 1893 the area was very considerably increased.

The above is the lowest general death-rate yet recorded, and is attributed to improved sanitation generally, especially the good system of sewerage. It should be noted that 40 out of the 61 deaths that occurred at the Union Workhouse, were those of persons not originally resident in the district, and are consequently not included in the total deaths (see table.) In treating with the infant mortality, the Medical Officer of Health writes:—"This death roll is still very excessive, but shews a slight improvement on the numbers for previous years. . . . There is no doubt that negligence still prevails, and will continue to prevail until the matter can be brought home to careless unthinking parents. The numerous cases of convictions recorded during the year in our police courts, and brought to the attention of our magistrates, through the instrumentality of the National Society for the Prevention of Cruelty to Children, proves conclusively that this matter requires to be taken into consideration in a more serious manner."

INFECTIOUS DISEASES.

406 cases of infectious disease were notified, consisting of *Scarlet Fever* (326 cases and 1 death), *Diphtheria* (14 cases and 4 deaths), *Membranous Croup* (6 cases and 2 deaths), *Erysipelas* (29 cases and 3 deaths), *Puerperal Fever* (6 cases and 5 deaths), *Typhoid Fever* (20 cases), and *Small Pox* (5 cases and 1 death). 41 deaths were caused by *Whooping Cough* and 18 by *Diarrhæa*.

The above figures show an increase in the number reported by 169 over those for the previous year. Scarlet Fever was responsible for 326 out of the total of 406.

Scarlet Fever was prevalent in a mild form throughout the year in every ward in the district, and especially was this the case in the earlier months.

In connection with *Typhoid Fever*, the Medical Officer of Health writes:—"It is a very satisfactory feature in the death returns for the year that there was not a single fatality among the 20 victims to *Typhoid Fever*. . . . This fact clearly indicates that the efforts of your Council and those of your predecessors are being rewarded from year to year."

Four cases that occurred at Coedpenmaen Road are attributed to the "want of proper drainage." It is also stated that "probably many of the cases arose from the inadequate supply of water for flushing the drains consequent upon the drought."

Whooping Cough was prevalent all the year round in every neighbourhood, and all the cases that proved fatal occurred among children under five years of age, 26 (out of the 41) being under one year.

With respect to *Diarrhæa*, of the 18 deaths 17 were among children under five years of age, and of these 13 were under one year.

Of the *Small Pox* cases it is stated that "Though each case was a distinct and separate outbreak and imported from without, in neither instance did it spread to any other member of the community. The outbreak would have been most serious but for the Hospital in Treforest."

Vaccination and re-vaccination were promptly resorted to, the beds and bed-clothing, &c., burnt, walls lime-washed, premises thoroughly disinfected, &c.

GENERAL CONDITIONS.

The improvement in the *scavenging* of the district observable in previous years has been continued.

Great progress is reported in the works of sewerage, some 500 connections having been made. Out of a total of 5,712 houses in the district, 5,100 have already been connected. The main sewer has been extended to the limit of the district in the Taff Valley ready to receive the sewage from the districts above.

The Medical Officer of Health strongly advises his Council to cause a house-to-house inspection of the whole district to be made forthwith, so that all defects, such as want of drainage, defects in closet accommodation, &c., be reported, and a complete record could thus be kept that would be of service on future occasions.

Inspector John in his report gives a good account of the proceedings taken at his instigation *re* the "lip trap" nuisance. (See Part I.)

So far, no site for the erection of the *Infectious Diseases Hospital* has been fixed upon. A few have been offered, but the price has been unreasonable; also the prejudice on the part of landowners is a great obstacle in the way.

The district has again suffered most seriously in consequence of the inadequate quantity of *water* supplied by the Pontypridd Waterworks Company.

A decided improvement in the sanitary arrangements and surroundings of all the *private slaughter houses* is reported.

The *Infectious Disease Prevention Act* was adopted.

One well was condemned, viz., that at the Slaughter house in Fothergill Street, which is also closed.

IMPROVEMENTS.

Great progress has been made in new works of sewerage, some 500 connections having been made. The main sewer has been extended to the limit of the district in the Taff Valley. No others are specified, but from personal knowledge of the district I know that they are many.

REQUIREMENTS.

- (1) A more plentiful supply of water is urgently needed.
- (2) A Public Mortuary.
- (3) Infectious Diseases Hospital, Disinfecting Apparatus, &c.
- (4) A Refuse Destructor.
- (5) The widening of old streets and bridges.
- (6) A systematic house-to-house inspection of the whole district at frequent intervals should be made.

REMARKS.

Reports from both the Sanitary Inspectors are appended.

PORTHCAWL.

Medical Officer of Health—R. T. WILLIAMS, L.R.C.P., L.R.C.S.

Area in acres, 3,365.

				1891.			1896.
Population	...	...	...	1,673	...	...	1,800 (estimated).
Birth-rate, 24.4.	Death-rate, 13.3.	Zymotic death-rate, 0.5.	Infant mortality-rate, 68.				
	Phthisis death-rate, 0.5.	Respiratory diseases death-rate, 1.1.					

All these rates are most satisfactory.

4 deaths occurred among non-residents, so that the corrected general death-rate is 11 per 1,000.

INFECTIOUS DISEASES.

Only 21 cases were notified during the year. These included *Scarlet Fever* (17 cases), *Typhoid Fever* (2 cases and 1 fatal), and *Erysipelas* (2 cases).

All the *Scarlet Fever* cases, with a few exceptions, were of a very mild type; although in every instance orders were given to isolate the patients as far as possible, and children from infected houses were forbidden to attend School, the disease was spread by house-to-house visitation, and the attendance of nurses and parents at social and religious gatherings.

In October an outbreak of Measles occurred at Newton. The first case was imported from the Rhondda Valley. The School was closed for about five weeks, and the outbreak subsided rapidly. All the cases were of a very mild character.

It was found impossible to trace the origin of the two *Typhoid Fever* cases.

GENERAL CONDITIONS.

The total rainfall at the Rest was 27.12 inches as compared with 31.07 in 1895, and 42 in 1894. The driest month was May, while September had the heaviest fall of rain.

The Medical Officer of Health congratulates his Council on their decision to provide a complete system of sewerage for the whole district. The work is in hand, and it is expected will be completed before the end of the current year, and that the cesspool nuisance will then be at an end.

The inadequate arrangements for carrying off the surface water at South Road remain as heretofore.

The dirty condition of roads and farm yards at Nottage also remains unremedied.

The *Scavenging* is now undertaken by the Council's men.

The *Water Supply* is inadequate, but efforts are being made to find an abundant supply of pure water, and it is hoped that the Council will soon be in a position to supply the whole district.

The framing of a code of bye-laws has not been completed.

REQUIREMENTS.

- (1) A system of sewerage for the whole district.
- (2) A general Water Supply.
- (3) The Code of Bye-laws.
- (4) Better lighting of the different roads and streets.

REMARKS.

This Report is *not* printed, and there is no statement of the work done by the Sanitary Inspector.

YSTRADYFODWG.

Medical Officer of Health—W. W. DAVID, M.R.C.S., L.S.A.

Area in acres, 23,543.

				1891.				1896.
Population	...	...	...	88,350	...	...	...	119,041 (estimated).
Birth-rate	36.5.	Death-rate	18.0.	Zymotic death-rate	3.3.	Infant mortality-rate	199.	
		Phthisis death-rate	0.8.	Respiratory diseases death-rate	3.3.			

Although the above death-rates in most particulars are lower than those for 1895, yet they are far from being satisfactory, especially the Zymotic and Infant mortality-rates. The deaths of infants under 1 year of age accounted for considerably over 50 per cent. of the total deaths.

The general death-rate for the different localities was as follows :—

Hafod	...	...	...	12.5	Porth	...	...	...	17.3
Pandy	...	...	...	14.9	Treorky	...	...	...	17.9
Treherbert	...	...	...	16.4	Ferndale	...	...	...	21.07
Ystrad	...	...	...	16.9	Mardy	...	...	...	21.4
Llwynpia	...	...	...	16.9	Tylorstown	...	...	...	22.5

INFECTIOUS DISEASES.

1,299 cases were notified as compared with 980 in 1895. These included *Small Pox* (1 case), *Scarlet Fever* (973 cases and 43 deaths), *Diphtheria* (42 cases and 17 deaths), *Membranous Croup* (38 cases and 37 deaths), *Typhoid Fever* (153 cases and 28 deaths), *Continued Fever* (24 cases and 3 deaths), *Puerperal Fever* (21 cases and all fatal), and *Erysipelas* (47 cases and 2 deaths).

38 deaths were caused by *Measles*, 63 by *Whooping Cough*, and 144 by *Diarrhæa*.

24 cases were treated in the Infectious Diseases Hospital.

On account of the lamented death of Dr. James, the late Medical Officer of Health, this Report does not deal with the *general Sanitary condition of the District, the improvements executed, or with its further requirements*. Appended to it, however, is a statement of the work done in each of the five divisions by the various Sanitary Inspectors, and from which it appears that the improvements executed were :—

IMPROVEMENTS.

No. 1 District:—

Subsidiary sewers for Treorky and Treherbert.
New cabstands for Tynewydd and Treherbert.

No. 2 District:—

The metalling of Crawshay, Augustus, Dorothy, and Ynysgan Streets on the Bailey Estate.

No. 3 District:—

Improvements of Gilfach pond.
Subsidiary sewers at Clydach Vale.
Surface water drains at Clydach Vale.
Street improvements at Clydach Vale.
Street improvements at Williamstown.
Subsidiary sewers at Tonypandy (near completion).
Subsidiary sewers at Penygraig (near completion).
Improvements Dinas Road, Penygraig (commenced).
Cabstands at Llwynpia and Tonypandy.

No 4 District:—

Street improvements from Hafod to Porth.
The pitching of the Tramway from Hafod to Porth.

No. 5 District:—

910 houses connected to the public sewer.

RURAL DISTRICTS.

COWBRIDGE.

Medical Officer of Health—C. BOOTH MELLER, M.R.C.S., L.R.C.P.

Area in acres, 37,985.

			1891.				1896.
Population	...	...	4,607.	...	...	...	5,368 (estimated).
Birth-rate, 34·2.	Death-rate, 15·0.	Zymotic death-rate, 1·9.	Infant mortality-rate, 94.				
	Phthisis death-rate, 0·9.	Respiratory diseases death-rate, 2·4.					

The Zymotic and infantile death-rates are considerable below the general average for England and Wales. The above statistics, as compared with the past 10 years, show a most marked and satisfactory improvement, and the Medical Officer of Health observes that "This favourable progress can only be attributed to the work of sanitation which has accompanied it. . . . On the whole strictly preventable deaths were comparatively few in number, shewing, as nothing could do, the progress in sanitation which we are making."

INFECTIOUS DISEASES.

34 notifications were received as compared with 77 in 1895. These consisted of *Diphtheria* (10 cases and 5 deaths), *Scarlet Fever* (11 cases), *Typhoid Fever* (1 case), *Membranous Croup* (3 cases), *Puerperal Fever* (2 cases and 1 death), and *Erysipelas* (18 cases).

1 death was occasioned by *Measles*, and 5 by *Diarrhœa*.

Influenza appears to be gradually losing its former virulence, and seriously complicated cases are now quite the exception.

Of the *Diphtheria* cases 1 is attributed to "damp, insanitary condition of a dilapidated old house;" 3 probably to the use of contaminated drinking water. 1 case occurred at Llanbedr Huts, the condition of which is described as "dangerous and disgraceful."

1 case of *Scarlet Fever* was imported, in none of the other cases could the cause be discovered.

The *Typhoid Fever* case was caused "by drinking the river water containing the sewage of the town of Cowbridge."

An Isolation Hospital has been decided upon for the use of this and some neighbouring Authorities, and it is hoped that a portable Disinfecting Apparatus will also be provided.

GENERAL CONDITIONS.

There is now every prospect that the *Slaughter Houses* will be seriously taken in hand by the Council: up to the present, it is said that the majority of them have proved a serious nuisance in their respective localities. All were inspected many times over. Those in use at present at Llanblethian, Cowbridge Town Mill, Llantwit Major—3 in number—situated at Colhugh Street, West Street, and Llanmaes Road, respectively. Those at Colwinstone and Llanharan are unlicensed. In common with others in the district, they are also unregistered.

The greater part of the district has suffered very severely during the past summer from a short *supply of water*.

The Council have taken up the question of improving the water supply in a most vigorous manner, and have devoted a large amount of time and thought thereon. Schemes have been designed for the parishes of Llanharan and Peterston-super-Montem, at an estimated cost of £1,300, and for Llantwit Major at a cost of £2,000. 12 wells have been rebuilt, 5 more are to be repaired, 17 cleaned out and 2 pumps affixed. 15 wells needing repairs are under consideration. St. Hilary, Llanharry, The Leys, Penylan Newton, Llansannor, Llanblethian, Colston, Ystradowen, and Llantwit, need attention in regard to the condition of their public wells. St. Mary Hill, Rhythyn, Llanharry Commons, and Eglwysbrewis are practically without any public water supply.

The district contains many *dilapidated cottages* and *farm houses*, and defective drains and closet accommodation is common, though of late much improved. 7 houses have been closed.

Next to the water supply the greatest need of the district is in relation to improved *Drainage*. The two chief localities needing it are Llanharan and Llantwit Major. As regards the former, plans have been completed. Llanblethian, St. Athan, and Gilestone also require a better system of drainage, and in the two last-named it will be carried out individually by the owners. Drains are no longer allowed to discharge upon the roads, or to remain choked for years together, or to form nuisances in other ways.

The Rivers Pollution Prevention Act has been strictly enforced throughout the entire district, only some 20 cases of pollution being now known to exist.

Systematic inspection of the whole district has been made by the Medical Officer of Health and the Inspector.

All the improvements executed, and the sanitary defects which still exist in the various villages, are given in detail.

IMPROVEMENTS.

Application has been made to the Local Government Board for urban powers for the entire district as regards the construction of new buildings and the removal of nuisances.

Application has also been made to the same Authority to fix a general scale of charges (£13) for the district, under Sec. 8, Public Health (Water) Act.

The Rivers Pollution Prevention Acts have been enforced.

The Towns Improvement Clauses Act, as far as illegal use of premises for slaughtering is concerned, has been rigidly enforced.

Important schemes of sewerage and water supply have been drawn up and approved for Llanharan district, and a water scheme also for Llantwit Major, at an aggregate estimated cost of £3,600.

Improvements have been effected in the sewers at the Dolau and River Row.

13 wells have been cleansed, repaired or rebuilt.

A large number of nuisances abated.

REQUIREMENTS.

Improved Water Supply for Llantwit Major, Llanharan, Brynna, Pontyclun, Llanharry, St. Hilary, Pentremeyrick, Penllyn, Llanblethian, Eglwysbrewis, Llansannor, and The Leys.

Repairs, &c., in connection with the following Wells:—Penylan Newton, Llansannor, Ystradowen, Llanharry, Llangan, Colwinstone, Llandow, Llantwit Major, Trerhyngwyllt, and Llanblethian—Bowman's and Kingscomb.

Improved Sewerage for Llanharan and Llantwit Major.

Proper Slop Water Drainage for Llanblethian, St. Athan, and Gilestone.

The immediate abolition of all cases of River Pollution by our own Council and the Cowbridge Corporation, as well as by private individuals and manufacturers.

Strict enforcement of the law as to the Licensing and Registration of Slaughter houses. Dairies and Milkshops should also be Registered and regularly inspected.

The adoption for the whole district of bye-laws relating to new buildings, the cleansing of cesspools, privies, closets, and ashpits, and the abatement of nuisances.

Regulations made in connection with the Dairies, Cowsheds, and Milkshops Order, 1885, as to water supply, proper ventilation, cleansing and drainage, and the precautions necessary to be taken in relation to infectious diseases.

The adoption of the Infectious Diseases Prevention Act, 1890.

Public Scavenging of certain localities, under Section 42, Public Health Act.

The addition of Measles and Whooping Cough to the list of notifiable diseases.

The distribution of pamphlets relative to the prevention of, and the precautions to be taken during the occurrence of dangerous infectious disease.

The proper protection of every Public Well requiring such, throughout the entire district, upon a uniform and effective plan.

House to house visitation of all such portions of the district which have not yet been undertaken by the Inspector.

All Public Sewers to be thoroughly inspected, and properly disconnected and ventilated, and when required and found practicable, to be flushed.

The abolition of large unventilated cesspools in connection with privies, and of all hand-flushed closets.

The regular cleansing of School closets.

Systematic Inspection of every new building in course of construction, and the strict enforcement of the bye-laws relative thereto, where such are in force. Copies of these bye-laws to be returned with every plan sent in and approved of.

The provision of a portable Disinfecting Apparatus.

The work of the Sanitary Inspector to be placed more under the direct supervision and control of the Medical Officer of Health.

An adequate supply of copies of bye-laws and regulations to be immediately procured.

Urinals and proper closet accommodation should be strictly enforced in the cases of Hotels and Inns.

GELLIGAER AND RHIGOS.

Medical Officer of Health—THOMAS J. DYKE, F.R.C.S.

Area in acres, 22,985.

				1891.				1896.
Population	...	..	...	13,715	...	...	...	16,480 (estimated).
Birth-rate, 35·6.	Death-rate, 18·0.	Zymotic death-rate, 1·2.	Infant mortality-rate, 153.					
	Phthisis death-rate, 2·0.	Respiratory diseases death-rate, 4·0.						

INFECTIOUS DISEASES.

107 cases of Infectious Disease were notified, including *Scarlet Fever* (78 cases and 3 deaths), *Diphtheria* (17 cases and 10 deaths), *Typhoid Fever* (3 cases and 1 death), and *Erysipelas* (9 cases). There were also registered 2 deaths from *Measles*, 6 from *Whooping Cough*, and 19 from *Diarrhoea*, in very young children; the malady was prevalent during the long continued drought in the summer.]

GENERAL CONDITIONS.

The *Scavenging* of Pantywain, Newtown Bute, and Carno Bute, is better performed.

The houses at Bute Terrace, Pontlottyn, have not been relieved from the nuisance caused by the stoppage of the drain under the cinder tip. It is a grievous nuisance and dangerous to health.

The *Water Supply* of *Troedyrhiwfuwch* and *Sebastopol* has *not* been improved.

Tirphil was inadequately supplied during the long drought in the summer and autumn months, and the same want was experienced by the other villages on the eastern slope of the Cefn-y-Brithdir range of Mountains. *Brithdir* was equally subjected to a short supply.

Bargoed and Gilfach are said to be well regulated and healthy villages.

At Fochriw a new mode of sewage disposal has been arranged for.

At Trelewis the inhabitants suffered much from the inadequate supply of water.

IMPROVEMENTS.

Fochriw—Renewal of water mains.

Trelewis and Bedlinog—Care of supplies and repairs.

Fochriw and Pentwyn—Care of supplies and repairs.

Llancaiach Reservoir—Care and repairs.

Protection of Bedlinog water main.

New tank at Gelligaer Village.

Repairs of hydrants at Pontlottyn.

Brithdir, Bedlinog and Pontlottyn—Sewer extensions.

New Urinals at Pontlottyn.

New Drains at Trelewis.

Fire appliances at Pontlottyn.

Several other improvements of importance, such as the repairs of the Infectious Diseases Hospital at Penybank.

REQUIREMENTS.

- (1) The protection of the water supply of Newtown Bute and Pontlottyn. More plentiful supplies for Troedyrhiwfuwch, Tirphil, Brithdir, Pentwyn, Fochriw and Trelewis.
- (2) The sewerage of Fochriw and Troedyrhiwfuwch.
- (3) The under-draining and supervision of all irrigation areas by the Council.
- (4) House refuse should not be used for building purposes.
- (5) The repair or closure of dwellings at Bute Terrace, Pontlottyn, Troedyrhiwfuwch and Fochriw that are unfit for human habitation.
- (6) The better scavenging of Fochriw.
- (7) The prevention of the pollution of rivers where it occurs by excremental and slop sewage.

GOWER.

Medical Officer of Health—H. E. RAWLINGS, M.R.C.S., L.R.C.P.I.

Area in acres, 50,275.

			1891.				1896.
Population	...	...	7,428	...	...	...	7,607 (estimated).
Birth-rate, 24.5.	Death-rate, 11.5.	Zymotic death-rate, 0.3.	Infant mortality-rate, 106.9.				
Phthisis death-rate, 0.68.		Respiratory diseases death-rate, 2.3.					

The above statistics are very satisfactory. The death of one person not belonging to the district is included in the total deaths.

INFECTIOUS DISEASES.

The total number of cases notified was 49. These included 39 of *Scarlet Fever*, all of which recovered; 1 *Diphtheria* which proved fatal; and 8 of *Typhoid Fever*, one of which was fatal. There was also one death due to *Whooping Cough*.

This is the first year that the Notification Act has been in force. 24 of the *Scarlet Fever* cases occurred at Middleton, Pitton and Rhosilli (in the parish of Rhosilli). The Board School was closed. The disease was of a mild character and no death occurred.

Cases also occurred in Bishopston (5), Llanrhidian Higher (8), and 2 at the School-house, Knelston. Here the School was promptly closed and the disease did not spread.

The *Typhoid Fever* cases occurred in different localities and in no instance was there more than one case.

GENERAL CONDITIONS.

A *Well* at Rhosilli and a *Well* at Cheriton are open to pollution.

Nothing has been done to the *Water Supply* of Blackpill, although frequent attention has been called to the unsatisfactory condition of the stream which is here used for drinking purposes.

The *Water Supply* at Dunvant is quite inadequate, and that of Penclawdd calls for immediate attention. The supply of Horton Village is insufficient to meet the requirements of the summer season. There is no water at Scurlage Castle during the summer.

The Report states that the new Inspector has accomplished a considerable amount of work during the year.

The epidemic at Middleton has abundantly proved the necessity of an Isolation Hospital which the Council has, for some time, been urged to provide.

One of the roadmen has been appointed to superintend the regular emptying of privies and ash pits at Penclawdd.

The Council has applied to the Local Government Board for powers to make bye-laws relating to new buildings, slaughter houses, &c.

IMPROVEMENTS.

The following improvements in the water supply have been made at a cost of £46:—

Mill Well, Penclawdd, repaired, cleaned, deepened, and a Kennedy's tap fixed.

Hall Well, Penclawdd, opened, cleaned, and a new pump fixed.

Pyle Well, Llanmadoc, deepened, covered, and a pump fixed.

Barland Well, Bishopston, covered and a pump fixed.

Leason Well, Llanrhidian, fenced.

Two Wells on Cefn-Bryn, covered and piped.

Nuisances abated:—

Ashpits and Privies	...	...	...	...	...	33
Deposits of Refuse and Manure	...	...	...	...	...	17
Pigstyes	...	...	...	...	...	11
Smoke Nuisance	...	...	...	...	...	1
Other Nuisances	...	..	...	...	...	29

REQUIREMENTS.

- (1) A Well at Rhosilli, and a Well at Cheriton should be covered, piped and pumps fixed.
- (2) Improved supplies for Dunvant, Blackpill, Penclawdd, Scurlage Castle and Horton.
- (3) Isolation Hospital with the necessary appurtenances.
- (4) A code of bye-laws relating to new buildings, slaughter houses, &c.

LLANDAFF AND DINAS POWIS.

Medical Officer of Health—RICHARD PRICHARD, M.D.

Area in acres, 65,469.

		1891.	1896.
Population	...	18,271	19,773 (estimated).
Birth-rate, 30·24.	Death-rate, 14·61.	Zymotic death-rate, 2·6.	Infant mortality-rate, 129.
	Phthisis death-rate, 1·0.	Respiratory diseases death-rate, 2·6.	

The above, except the zymotic death-rate, are satisfactory and lower than the mean for the County Districts of England and Wales.

The mean or average age at death was 28·7 years.

INFECTIOUS DISEASES.

420 cases were notified as compared with 222 in 1895. These included 98 *Scarlet Fever* (2 deaths), 25 *Diphtheria* (2 deaths), 3 *Membranous Croup* (2 deaths), 15 *Enteric Fever* (5 deaths), 1 *Puerperal Fever* (fatal), 6 *Erysipelas*, and 274 *Whooping Cough* (16 deaths). In addition to these, 3 deaths were occasioned by *Measles* and 18 by *Diarrhæa*, which should be included among the deaths from the 7 principal zymotic diseases.

Scarlet Fever did not assume epidemic proportions in any one locality, but there were isolated outbreaks at different times in 12 parishes. 10 cases were removed to the Cardiff Sanatorium during the year. There were other pressing cases, but the hospital was full at the time.

Of the 25 cases of *Diphtheria*, 12 occurred in the Parish of Llandaff.

The notifications of *Whooping Cough* were 65·2 per cent. of the total received, and the mortality occasioned 47 per cent. of the deaths from infectious diseases. The epidemic of this disease commenced in 1893, and has prevailed ever since ; it has now, however, invaded the whole district.

The question of isolation accommodation is still *sub judice*.

GENERAL CONDITIONS.

A detailed account of the *water supply, drainage, &c.*, of most of the populous centres and villages is given, but are too numerous to be included in this Report.

Plans were approved for the erection of 240 houses during the year, and certificates under Sec. 6 of the Public Health (Water) Act, 1878, have been granted for 207 houses.

All the slaughter houses were duly inspected, and any nuisances found were abated.

2,314 nuisances, exclusive of many others rectified by verbal requisition, were abated.

IMPROVEMENTS.

Caerau.—Knacker's-yard paved and fumes made to pass through furnace. Some 30 houses drained, and back-yards paved. Cardiff water extended to village.

Llandaff.—Dust bins provided for Ely. Plans and estimates prepared for the drainage of new houses at Gabalfa.

Llanishen.—A system of sewerage is in course of construction.

Pentyrch.—The scavenging was undertaken, and steps are being taken to provide a proper water supply for the whole parish.

Radyr.—Extension of water supply. Proper scavenging contract established. A Local Government Board Inquiry was held with respect to the sewerage scheme which is estimated to cost £2,000.

St. Andrews.—The old water works at Dinas Powis transferred to the Barry Council. Plans and sections for the sewerage of Dinas Powis and Eastbrook have been prepared.

Whitchurch.—Plans, sections and agreements prepared for the extension of the sewers at Primrose Hill and Iron Bridge houses. Corporation water extended to some 60 houses at Melingriffith.

Powers have been obtained to scavenge the whole district.

REQUIREMENTS.

- (1) The drainage of Pontcanna, Fairwater Grove, North and Crwys Roads.
- (2) Water supplies for Pentyrch, Rudry, and other parishes.
- (3) The sewerage of Dinas Powis and Eastbrook.
- (4) A better system of supervision over the scavenging in the various localities. Also the inspection of Cowsheds, Dairies and Slaughter houses, Bakehouses and Workshops.
- (5) Isolation accommodation.

LLANGYFELACH (LLANGYFELACH DIVISION.)

Medical Officer of Health—E. RICE MORGAN, M.R.C.S., L.S.A.

Area in acres, 10,001.

			1891.				1896.
Population	...	...	10,528	...	...	...	10,731 (estimated).
Birth-rate, 33.1.	Death-rate, 13.1.		Zymotic death-rate, 0.7.				Infant mortality-rate, 129.
	Phthisis death-rate, 1.8.		Respiratory Diseases death-rate, 1.9.				

The above rates are satisfactory. The general death-rate compares very favourably with the average for the past 10 years, which is 16.7. The average age attained was 29.5 years.

INFECTIOUS DISEASES.

95 cases were notified as compared with 24 in 1895. These included *Small Pox* (1 case), *Scarlet Fever* (80 cases), *Diphtheria* (2 cases and 2 deaths), *Typhoid Fever* (9 cases), and *Erysipelas* (3 cases); 6 deaths were also registered as due to *Whooping Cough*.

The *Scarlet Fever* cases were of a mild type, and fortunately not a single death was caused.

On examination of the house where the *Diphtheria* cases occurred at Birchgrove, no special sanitary defects could be detected.

The history of *Typhoid Fever* is confined to 9 cases, all of which recovered.

GENERAL CONDITIONS.

The drainage of Midland Row has been completed.

Caersalem and Cwmrhydyccwrw are still inadequately supplied with water, and in anticipation of a dry summer, the storage supply of Llansamlet should certainly be increased.

The Medical Officer is of opinion that the Swansea Borough Fever Hospital is sufficient to meet all the requirements of his division of the district, and that a hospital for Llangyfelach alone is not needed.

10 cottages in Llansamlet district have been condemned and closed.

Details of the rainfall for the year is appended. 41.29 inches of rain fell at Morriston, 53.2 feet above sea level, the average for the last 5 years being 43.562.

IMPROVEMENTS.

Wash out into Cwmrhydyccwrw stream.

1½ inch pipes laid to spring at Birchgrove.

Extension of mains at Birchgrove and Station Road.

New public fountain fixed at Waunforgan (this was chronicled last year).

Three new public fountains at Llansamlet Lower.

The drainage of Midland Row completed.

REQUIREMENTS.

Adequate supplies of water for Caersalem and Cwmrhydyccwrw.

The enlargement of the Llansamlet Storage Reservoir.

LLANGYFELACH (LLANDILO-TALYBONT DIVISION).

Medical Officer of Health—TRAFFORD MITCHELL, M.D., D.P.H.

Area in acres, 20,893.

	1891.	1896.
Population	13,449	20,106 (estimated).
Birth-rate, 32·8.	Death-rate, 13·3.	Zymotic death-rate, 0·6.
		Infant mortality-rate, 127.
	Phthisis death-rate, 1·29.	Respiratory diseases death-rate, 2·8.

The above statistics are highly satisfactory, and compare most favourably with those for the country districts of England and Wales. Of the total deaths, 84 or 31 per cent. occurred amongst children under one year of age, and 116 or 43 per cent. amongst children under five.

INFECTIOUS DISEASES.

89 cases were notified, as compared with 91 in 1895. These included 38 *Scarlet Fever*, 2 *Membranous Croup*, 47 *Typhoid Fever* (5 deaths), 1 *Continued Fever*, and 1 *Erysipelas*. One death was registered as due to *Measles*, 4 to *Whooping Cough*, and 2 to *Diarrhœa*.

A case of Small Pox in a tailoring tramp occurred at an unregistered common lodging-house at Pontardulais. On the day following the eruption he was turned out, and, after visiting a house at Gorseinon, he, after much struggle, reached Swansea, where on the following day he was taken to the Fever Hospital. The common lodging-house, as well as house visited by him at Gorseinon, were thoroughly disinfected, and at the former also all the clothing and bedding were removed to the Swansea Fever Hospital and disinfected.

The Council refused to adopt the recommendations of Dr. Mitchell to institute legal proceedings against the occupier of the unregistered house at Pontardulais.

With respect to Scarlet Fever, it is stated that the number notified this year is the smallest in any year since the introduction of compulsory notification, except in 1891. We are further told that the infection was plainly due to visits recklessly paid to infected houses, not more than one or two are ascribed to School influence.

Of the very large number of cases (47) of Typhoid fever that occurred in this district only two happened in the first half of the year. The remaining 45 occurred at

Pentrelan	5 cases.
Waunarlwydd and Mynydd-bach-y-glo	22 cases in 13 houses.
Ystrad Road	1 case.
Fforest Fach	10 cases.
Cwmbwrla	1 case.
Trawle	6 cases.

In dealing with the Waunarlwydd and Mynydd-bach-y-glo outbreaks, Dr. Mitchell observes "The coincidence of the present sudden outbreak with the loss of the usual water supply on the higher levels, and the immunity enjoyed by houses on the lower levels, which still possessed the ordinary water supply, is too marked to permit of any doubt that the Typhoid fever had been chiefly spread by the agency of water."

Dr. Mitchell presented a special report on the prevalence of Enteric fever to his Council, the County Council and the Local Government Board.

The Council have not provided their district with an *Isolation Hospital* or *Disinfecting Apparatus*.

GENERAL CONDITIONS.

The *Water Supply* of Waunarlwydd, Mynydd-bach-y-glo, Ystrad Road, and Fforest Fach is inadequate.

The yield of Cefngoleu springs supplying Gowerton was inadequate, it was even inadequate when supplemented by the Cefngoleu stream, to which cattle, pigs, and ducks are allowed free access a few feet from the intake, and the inhabitants had to resort to open wells liable to pollution.

The water supply of Gorseinon and Pontardulais are still most inadequate.

Gowerton is the only village possessing a system of sewerage, and this is far from being perfect.

The *Scavenging* is done in a fair manner as far as the emptying of pail closets is considered. The removal of house refuse is irregular and unsatisfactory. The scavenging of Loughor Borough and Treboeth ought also to be undertaken by the Council.

The 109 workshops of the district have been well under observation, and their condition has greatly improved as regards cleanliness, lime-washing and ventilation.

20 houses were condemned on account of structural defects. Of that number, 2 have been demolished, 5 closed, 5 rendered habitable, 2 are being repaired, 2 are about to be demolished and rebuilt.

Although all plans of new buildings are submitted to the Council for approval, it is to be regretted that no adequate supervision is exercised over the builders, and it is reported that the most important of the bye-laws are almost "totally ignored."

Section 6 of the Public Health (Water) Act of 1878 does not seem to have ever been enforced by the Council.

The Council do not possess a code of bye-laws for the regulation of Slaughter Houses, Common Lodging Houses, Offensive Trades, Nuisances, &c.

Most of the rivers and streams are polluted by sewage or by manufacturing or mining effluents and until proper systems of sewerage are provided it will be useless to attempt to prevent it.

A detailed inspection of all the schools has been made by the Medical Officer of Health and Inspector.

IMPROVEMENTS.

New well sunk near Spring Gardens, Gorseinon.

New well sunk near West Street, Gorseinon.

New pump, pipes, etc., at High Street Well, Gorseinon.

Tube well driven at Garnlas, Sketty.

One new public fountain provided at Sketty, another at Weig, and a third at King's Head Road, Gendros.

REQUIREMENTS.

- (1) The provision of adequate supplies of water for Pontardulais and Gorseinon.
- (2) Improved supplies for Waunarlwydd, Gowerton, Mynydd-bach-y-glo and Fforest Fach.
- (3) The sewerage of Pontardulais, Gorseinon and Sketty.
- (4) A code of bye-laws as described, and the enforcement of the Council's building bye-laws.
- (5) Isolation Hospital, Disinfecting Apparatus, &c.
- (6) The better scavenging of Loughor Borough and Treboeth.

LLANTRISANT AND LLANTWIT FARDRE.

Medical Officer of Health—W. N. DAVIES, M.D.

Area in acres, 18,232.

	1891.	1896.
Population	8,509	11,070 (estimated).
Birth-rate, 38·2.	Death-rate, 17·1.	Zymotic death-rate, 0·36.
	Phthisis death-rate, 0·9.	Respiratory diseases death-rate, 1·9.
		Infant mortality-rate, 165.

INFECTIOUS DISEASES.

126 cases were notified during the nine months ending 31st December. These included *Scarlet Fever*, 87; *Diphtheria*, 10; *Typhoid Fever*, 25; *Puerperal Fever*, 1; and *Erysipelas*, 3. Those notified during the first quarter are not given. The deaths registered as due to the zymotic diseases included 3 from *Scarlet Fever*, 1 from *Measles*, 6 from *Whooping Cough*, and 3 from *Diarrhœa*.

Scarlet Fever of a mild type was epidemic at Llantrisant, Gilfach, and Tonyrefail, and the fatal cases occurred in infants only a few months old. The Gilfach Schools were closed for some weeks, with advantage, and the Miskin School was advised to be closed. It was found impossible to prevent the spread of the disease, because there was no accommodation in readiness to isolate the first cases.

All the *Diphtheria* cases were of a mild character, and none terminated fatally.

In connection with each infected house at Llantrisant, some insanitary condition such as foul choked drains, defective w.c.'s was found and remedied, a blocked drain and a defective ventilating pipe accounted for the case at Gilfach.

Nearly all the *Typhoid Fever* cases are attributed to such conditions as "foul drains, impure water, insufficient ventilation, &c." 3 cases were imported.

In connection with the *Puerperal Fever* case, the nurse was disinfected and suspended for two months from attending any labour cases, the patient's house was thoroughly disinfected and bedding, &c., burnt.

The much needed Isolation Hospital has not yet been erected, and the Medical Officer of Health says that without such an institution it is almost a "forlorn hope" attempting to prevent an epidemic such as the scarlet fever outbreak reported.

GENERAL CONDITIONS.

The attention of the Council is once more called to the danger that might result to the public health from the Llantrisant street gratings. These, it is said, are in direct communication with the sewers of the town, and in dry weather and in the absence of adequate flushing, they act simply as sewer ventilators.

Attention is also called to the unventilated condition of the sewers generally, and the probability of the foul air forcing the various water traps of w.c.'s and street gratings, and causing a serious danger to the health of inhabitants.

The *scavenging* is described as fairly well done at Llantrisant, except in some back lanes.

The *bakehouses* should be more regularly inspected.

Of the Common Lodging-House on the Allt, the Medical Officer of Health writes :—"The house used as a *Common Lodging-House* on the Allt, Llantrisant, is quite unfit for the purpose—the rooms being too small, ill-ventilated, and without sufficient light, and the building old and rotten."

Nearly all the *slaughter houses* are described as badly paved and drained, without sufficient water at hand for flushing purposes, and often too near to dwelling-houses. The best of them is at Gilfach.

The water supply of the inhabitants at the Bute Mines and Mwyndy requires immediate attention, for it is said to be polluted.

IMPROVEMENTS.

New sewers at Pontyclun and Loftus Terrace.

A short length of sewer re-laid at Llantrisant.

A new sewer at Trebanog, and new sewers at Tonyrefail.

29 w.c.'s built and connected to the public sewer at Gilfach.

163 old pail and privy closets converted into w.c.'s and connected to the public sewers, and 135 new slop drains made and connected (all at Gilfach).

45 back yard pavements repaired.

The drainage of Gilfach School re-modelled.

12 pail closets converted into w.c.'s at Tonyrefail.

9 privies converted into w.c.'s and connected at Llantrisant.

Miskin School fitted out with the trough system of water closets.

And other important improvements.

REQUIREMENTS.

- (1) Infectious Diseases Hospital—Disinfecting Apparatus, &c.
- (2) The sewerage of Edmundstown, Tonyrefail, and Llantwit Villages.
- (3) The framing of a code of bye-laws.
- (4) Water supply for Llantwit Villages, and improved supply for Bute Mines and Mwyndy.
- (5) Public Abattoirs.
- (6) The ventilation and other improvements of the Llantrisant sewers and drains.

This Report is manuscript, and no statement of the work done by the Sanitary Inspector is appended.

NEATH.

Medical Officer of Health—T. P. WHITTINGTON, L.R.C.P., L.R.C.S.

Area in acres, 33,509.

	1891.	1896.
Population	23,953	23,359 (estimated).
Birth-rate, 33·0.	Death-rate, 16·4.	Zymotic death-rate, 2·6.
	Phthisis death-rate, 1·1.	Infant mortality-rate, 147.
		Respiratory Diseases death-rate, 2·6.

INFECTIOUS DISEASES.

491 cases were notified, as compared with 367 in 1895. These included *Small Pox* (7 cases and 4 deaths), *Scarlet Fever* (381 cases and 6 deaths), *Diphtheria* (27 cases and 7 deaths), *Membranous Croup* (9 cases and 8 deaths), *Typhoid Fever* (35 cases and 6 deaths), *Puerperal Fever* (2 cases, fatal), and *Erysipelas* (30 cases and 2 deaths). 7 deaths are attributed to *Measles*, 5 to *Whooping Cough*, and 8 to *Diarrhæa*.

The 7 *Small Pox* cases, all of which occurred in one family, were treated in the Isolation Hospital.

One case of *Typhoid Fever* was also treated in this hospital.

A fatal case of *Diphtheria* at Skewen is attributed to *sewer gases*.

An outbreak of *Scarlet Fever* at Cadoxton necessitated the closure of the schools in this village. The Board School at Glyn-Neath was also closed on account of *Whooping Cough*, and at Resolven on account of *Measles*.

A case of *Typhoid Fever* at Lonlas, near Dynevor, is said to have been caused by impure water.

GENERAL CONDITIONS.

The water supplies of Cadoxton, Cimla, Crynant and Aberdulais are still *inadequate*, and it is *scarce* at Glyn Neath, where a new pump was erected.

The School Board closets which were reported upon in June by the Medical Officer of Health, and described as "in a very filthy state," have since been thoroughly cleansed.

The summer was a very dry one, and both Cadoxton and Glyn Neath suffered from want of water.

IMPROVEMENTS.

Skewen has been well supplied with water.

A large number of privies have been erected, repaired and cleansed in the various localities. Also many drains have been provided, repaired and cleansed.

Water supplies to different parts of the district (not mentioned).

The sewerage of Skewen completed.

Extension of sewerage system at Melincrythan.

REQUIREMENTS.

These are not specified, but it may be gathered from the Report that they are as follows:—

A better supply of water for Cadoxton, Cimla, Aberdulais, Crynant, and Glyn-Neath.

PENYBONT.

Medical Officer of Health—WYNDHAM RANDALL, M.R.C.S., L.R.C.P.

Area in acres, 41,443.

	1891.	1896.
Population	13,194	13,585 (estimated).
Birth-rate, 34.	Death-rate, 16.0.	Zymotic death-rate, 1.1.
	Phthisis death-rate, 0.8.	Respiratory diseases death-rate, 5.0.
		Infant mortality-rate, 131.

At the Asylum there were 7 births, equal to a birth-rate of 4.34. The 108 deaths at the Asylum among a population of 1,610 are not included in the total deaths on which the mortality-rates are based.

With the exception of the respiratory diseases death-rate, the above statistics are highly satisfactory.

INFECTIOUS DISEASES.

204 cases were reported under the Notification Act, as compared with 87 in 1895. These included *Small Pox* (1 case), *Scarlet Fever* (155 cases and 2 deaths), *Diphtheria* (14 cases and 2 deaths), *Enteric or Typhoid Fever* (12 cases and 2 deaths), *Continued Fever* (3 cases), and *Erysipelas* (22 cases). There were also registered 6 deaths from *Whooping Cough*, and 3 from *Diarrhæa*.

The *Small Pox* case occurred at the Asylum. It was immediately removed to the Small Pox Hospital at Bridgend, and a probable serious outbreak was averted by prompt notification and removal.

Scarlet Fever was present throughout the year, and cases were reported every month. "On an outbreak being notified, the masters of schools in the locality are communicated with, and directed not to admit any members of the infected households for a period of two months. The parents were advised as to strict isolation for two months, and as to disinfection of persons and clothing, but such precautions were comparatively useless. This, I trust, will be remedied when removal to an Isolation Hospital can be carried out."

Of the 14 cases of *Diphtheria*, four were a part of the outbreak at Pencoed, described in former Reports. The other 10 were isolated cases associated with local sanitary defects rather than with school life.

The three cases of *Typhoid Fever* at South Cornelly were traced, undoubtedly, to drinking polluted well-water. The other cases, generally, may be said to have been associated with local sanitary defects, such as open untrapped drains, &c.

The National School, Ewenny, was closed for a month on account of *Scarlet Fever*, and the National School, Lalestone, from 9th November to 11th January, 1897.

GENERAL CONDITIONS.

The first sentence under this heading is—

"Some improvement has taken place in the general condition of the district during the year; it is still far from being in a satisfactory state."

The villages of Aberkenfig and Tondü are described as "filthy, undrained, and with defective house accommodation." The scheme for augmenting their water supply remains in abeyance. The slaughter houses are ill-placed, ill-constructed, and badly kept. Daily scavenging is necessary.

Several dilapidated dwellings at Bryncoch and Bryncethin should be closed. Morse's Row is described as "filthy, wet back yard, unpaved, no surface drainage, slops and refuse thrown on surface." This row was reported unfit for occupation in 1886 also by the late Mr. Spear, Local Government Board Inspector, in 1887, and nothing effective has been carried out since. Water supply at Bryncoch is still deficient, but an agreement with a Water Company has practically been arrived at.

At River Row, Brynmenyn, only 2 out of 8 houses have water laid on, and the cesspits are dirty and dilapidated.

Application has been made to the Local Government Board for leave to borrow £1,000 for Coity and Hendre water supply.

The water supply of Ewenny is still deficient.

The condition of Pencoed is still unsatisfactory as regards both drainage and water supply.

At Southerndown and St. Brides Major there is great scarcity of water in dry weather, when it has to be carried for miles.

At Wick there is no drainage. Farm yards, stables, and pigstyes all drain into the main road. Objectionable dirty privies. Pigstyes too near dwellings and road.

IMPROVEMENTS.

These are few :—

- (1) 30 new houses built, 20 in course of erection.
- (2) 8 houses closed as unfit for occupation; 12 satisfactorily repaired.
- (3) 5 public wells and 2 private wells protected.
- (4) Drainage and closets reconstructed at Pencoed Board School. Flushing still deficient.
- (5) Coychurch water supply has been protected and a pump affixed at a cost of £15.
- (6) 300 house-to-house inspections made.
- (7) 400 notices to abate nuisances served and nearly all complied with.

REQUIREMENTS.

These are many and all urgent :—

- (1) The sewerage of Aberkenfig, Tondy, Pencoed, and the drainage of Wick and Coychurch.
- (2) Improved water supplies for Brynmenyn, Pwllandros, Tondy and Aberkenfig, Penyfai, Kenfig Hill, Pyle, North Cornelly, South Cornelly, Cefn Cribbwr, Coity and Hendre, Pencoed, Penprisc, Ewenny, St. Brides Major, Southerndown, and Bryncoch.
- (3) The provision of isolation accommodation and disinfection.
- (4) The desirability of employing competent persons to carry out the disinfection of dwellings, bedding and clothing, drains and privies.
- (5) The alteration or re-construction of all privies in the district not fulfilling the requirements of the bye-laws.
- (6) A Public Abattoir and daily scavenging at Tondy and Aberkenfig.
- (7) The repair or closure of dilapidated dwellings.

PONTARDAWE (EASTERN DIVISION).

Medical Officer of Health—DAVID THOMAS, M.D.

Area in acres, 10,352.

		1891.	1896.
Population	...	7,201	8,740 (estimated).
Birth-rate, 34.0.	Death-rate, 12.9.	Zymotic death-rate, 0.5.	Infant mortality-rate, 134.
	Phthisis death-rate, 0.57.	Respiratory Diseases death-rate, 2.8.	

All these rates are highly satisfactory and considerably lower in all respects than the corresponding rates for England and Wales. The general death-rate is the lowest ever recorded for the district.

INFECTIOUS DISEASES.

23 cases of infectious disease were notified. These were *Scarlet Fever* (21 cases and 1 death), and *Membranous Croup* (2 cases and both fatal). 1 death was attributed to *Whooping Cough* and 1 to *Diarrhæa*.

Scarlet Fever of a mild type prevailed more or less throughout the district in the summer months,—Cwmgorse and Gwauncaegurwen suffering the most.

As regards sickness, the event of the year was the occurrence of *Small Pox*. The first case was imported by a navy from Swansea. The case did not come under observation until it had, unfortunately, infected two others. The cases were strictly isolated, and vaccination and re-vaccination insisted on throughout the district. Dr. Thomas observes that the fact of the disease being so soon stamped out may be attributed mainly, if not entirely, to the effective state of vaccination in the district.

GENERAL CONDITIONS.

Considerable attention has been paid to defective *water supplies*, and many improvements effected.

All the populous portions of the district may now be considered adequately supplied with excellent water.

Attention is called to the dilapidated condition of several houses at Gwauncaegurwen and Ystalyfera, and the same will have to be condemned unless rendered habitable.

Refuse Disposal.—Many of the nuisances referred to in previous quarterly reports of the Medical Officer of Health have been abated, still, it is stated, "that there is considerable room for improvement, particularly in Ystalyfera, as regards the insanitary condition of some of the privies, ash-heaps, and refuse tips."

57 inches of rain fell on 180 days at the Wern Schools, 240 feet above sea level.

IMPROVEMENTS.

The following improvements in water supplies have been effected:—

						£
1. —(a)	The Cwmtwrch Waterworks	...	...	...	...	1,075
(b)	Penybryn, Cwmllynfell	...	...	...	...	75
(c)	Godrergraig, Ystalyfera	...	...	...	...	120
(d)	Gwauncaegurwen (extension)	...	...	...	...	45
(e)	Craig-y-merched (extension)	...	...	...	...	25
(f)	Tirbach (extension)	...	...	...	...	8

Total of £1,348

2.—Two large iron gullies on the main road to Ystalyfera.

REQUIREMENTS.

1.—A system of sewerage and drainage.

2.—Bye-laws with respect to new buildings, nuisances, slaughter houses, &c., should be framed.

PONTARDAWE (WESTERN DIVISION).

Medical Officer of Health—GRIFFITH GRIFFITHS, M.R.C.S., L.R.C.P.

Area in acres, 17,971.

1891.

1896.

Population 10,174 10,945 (estimated).

Birth-rate, 33·89. Death-rate, 14·5. Zymotic death-rate, 0·27. Infant mortality-rate, 134.

Phthisis death-rate, 1·9. Respiratory diseases death-rate, 3·8.

All these rates are highly satisfactory.

INFECTIOUS DISEASES.

The notification of infectious disease became compulsory on the 11th May. During the year 29 cases of infectious disease came to the knowledge of the Medical Officer of Health, consisting of *Small Pox* (3 cases), *Diphtheria* (1 case), *Scarlet Fever* (19 cases), *Typhoid or Enteric Fever* (4 cases and 1 death). 1 death, also, was attributed to *Measles*.

All 3 cases of *Small Pox* were isolated at the *Infectious Ward of the Union Workhouse*.

The first case admitted to the Infectious Ward was a navvy who developed the disease in the Eastern Division of the district.

All the possible precautionary measures were adopted. "After the patients were discharged, the wards were thoroughly disinfected, and the clothing that had been in contact with the patients burnt. The walls, ceilings, and floors were washed with strong solutions of perchloride of mercury, and within a month's time the walls and ceilings were white-washed with fresh slacked lime, and all the wood-work well scrubbed with carbolic soap."

The cases of *Scarlet Fever*, 19 in number, that occurred, were of a sporadic character, and shewed no tendency to spread.

A mild form of *Whooping Cough* was prevalent here and there during the year.

GENERAL CONDITIONS.

The *scavenging of Pontardawe, Alltwn and Clydach* is done daily, and is a step in the right direction.

Extensions of the *water mains, &c.*, took place at Pontardawe, Marchowel Springs and Alltwn. Glais, Pheasant Bank and Swansea Road, are still inadequately supplied.

Schemes of sewerage for Pontardawe and Clydach are under consideration.

IMPROVEMENTS.

(1) Extensions of mains and construction of service reservoir at Pontardawe. The Marchowel Springs greatly improved and increased. Mains extended to Derwen Road, across to Duffryn Road, Alltwn.

(2) The scavenging of the populous portions is now undertaken by the Council.

REQUIREMENTS.

(1) A system of sewerage, &c., for Pontardawe and Clydach.

(2) The framing of bye-laws with respect to new buildings, nuisances and slaughter houses.

(3) Water for those localities (named above) where it is inadequate.

PORT SANITARY DISTRICTS.

BARRY.

Medical Officer of Health—GEORGE NEALE, L.R.C.P., &c.

The floating population of the area is roughly estimated at 800. 2,646 vessels entered the Docks during the year, as compared with 2,278 in 1895.

INFECTIOUS DISEASES.

All possible precautionary measures against the importation of Cholera and other infectious diseases were rigidly observed.

7 vessels were boarded by the Medical Officer of Health and Inspector on account of disease on board during the voyage, or at time of arrival in Port. 2 were cases of Typhoid Fever, 2 of Pneumonia, 1 Peritonitis, and 1 Catarrh.

INSPECTIONS.

1,045 vessels were inspected. 876 were in a fair or good condition, and 169 in a more or less defective or insanitary state. 120 written notices were served, and 49 verbal orders were given to the masters or those in charge, and all were attended to, and no difficulty was experienced.

HOSPITALS.

The existing Small Pox Hospital is too small, and Dr. Neale urges his Council to make provision for at least 20 cases as expeditiously as possible.

The Joint Hospital on the Flat Holms is ready for the reception of patients suffering from Cholera or Bubonic Plague, should any be imported.

NEATH, PORT TALBOT AND PORTHCAWL.

These Ports are under the jurisdiction of the Swansea Port Sanitary Authority Joint Board.

The following Table shews the number of vessels that entered the various harbours, with the nuisances dealt with :—

DISTRICT.	Number of Vessels.		Number of Crews.	Nuisances dealt with.
	Foreign.	Coastwise.		
Neath	192	787	5,908	10
Port Talbot	48	181	1,692	25
Porthcawl	118	408	3,188	116
Total	358	1,376	10,788	151

From the whole area (including Swansea) :—

4 vessels were disinfected.

5 sick seamen were removed to Borough Hospital.

452 articles of clothing and bedding were disinfected.

6 do. do. do. destroyed.

Many special inspections were carried out.

TABLE I.

Area, Population, Births, Deaths.

SANITARY DISTRICTS.	MEDICAL OFFICERS OF HEALTH.	Area in Acres.	Population, 1891.	Estimated Population, 1893.	BIRTHS.			DEATHS.			ANNUAL RATES PER 1,000 OF ESTIMATED POPULATION.						REMARKS.
					Males.	Females.	Total.	Males.	Females.	Total.	Birth Rate.	Death Rate.	Zymotic Death Rate.	Phthisis Death Rate.	Respira- tory Death Rate.	INFANT MORTALITY (Deaths in Children under 1 year per 1,000 Births).	
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18
URBAN																	
Aberavon Borough	J. Arnall Jones, M.R.C.S., L.R.C.P.	2,060	6,281	7,600	143	130	273	...	...	128	35.9	16.84	4.21	1.19	2.9	175	
Aberdare	D. Davies, F.R.C.S.	15,127	40,917	44,000	...	...	1,428	...	...	889	32.16	20.36	2.9	1.20	3.1	219	
Barry	George Neale, L.R.C.P.	4,104	12,663	23,228	516	493	1,009	203	158	361	44.7	15.5	1.2	0.3	2.5	158	
Bridgend	Wyndham Randall, M.R.C.S., L.R.C.P.	629	4,896	6,458	107	79	186	61	47	108	28.8	10.7	1.0	1.5	2.3	166	The 4 births in Workhouse are included.
Briton Ferry	E. Vernon Pegge, M.R.C.S., L.R.C.P.	1,381	5,779	8,000	...	...	238	64	59	123	20.7	15.3	0.6	0.8	3.5	155	
Caerphilly	T. W. Thomas, M.R.C.S., L.S.A.	17,000	14,000	14,000	187	204	401	98	103	201	28.06	14.3	1.8	0.7	2.9	154	The 15 deaths at Workhouse are included.
Cowbridge Borough	A. W. Shepherd, L.R.C.P.I., L.R.C.S.	84	1,360	1,377	18	13	31	6	14	20	22.5	13.7	0.0	1.4	2.9	32	
Garw and Ogmore	D. J. Thomas, M.R.C.S., L.R.C.P.I.	17,926	13,080	16,647	370	292	662	...	...	268	39.7	16.2	1.2	0.5	2.2	181	
Glyncorwg	C. W. Hemming, L.R.C.P., L.R.C.S.	10,220	3,800	5,500	110	124	234	108	99	89	47.54	16.18	3.6	0.18	3.6	186	
Maesteg	Wyndham Randall, M.R.C.S., L.R.C.P.	6,709	9,417	11,000	253	211	454	...	...	207	39.4	18.8	1.5	1.0	4.3	168	
Margam	J. H. Davies, M.D.	18,347	6,274	7,500	112	145	257	...	...	102	36.9	13.6	1.8	0.04	2.1	157	
Merthyr	Thomas J. Dyke, F.R.C.S.	17,714	58,080	68,437	1,189	1,145	2,334	753	623	1,376	34.1	20.0	3.7	1.4	3.8	217	
Mountain Ash	E. P. Evans, M.R.C.S., L.R.C.P.	10,554	17,494	26,650	533	540	1,073	...	...	486	40.2	18.2	1.9	1.5	1.9	220	
Neath Borough	James Elias, M.R.C.S., D.P.H.	1,439	11,137	12,000	...	...	435	...	...	221	36.3	18.5	1.5	1.9	2.9	145	
Oystermouth	J. Bevan, M.D., C.M.	2,615	3,598	4,167	56	53	109	20	22	42	26.0	9.9	0.7	0.9	1.9	45	
Penarth	R. F. Nell, M.R.C.S., L.S.A.	3,507	12,000	13,500	254	240	454	70	76	146	33.5	10.8	1.7	0.9	1.4	100	
Pontypridd	Howard Davies, M.R.C.S., L.S.A.	8,000	19,971	37,000	675	587	1,262	329	258	587	34.1	14.7	2.1	0.8	2.8	198	
Porthcawl	R. T. Williams, L.R.C.P., L.R.C.S.	3,365	1,673	1,800	25	19	44	11	13	24	24.4	13.3	0.5	0.5	1.1	68	
Ystradgynaf	W. W. David, M.R.C.S., L.S.A.	23,543	88,350	119,041	...	...	4,345	...	...	2,105	36.5	18.0	3.3	0.8	3.3	199	
RURAL																	
Cowbridge	C. Booth Meller, M.R.C.S., L.R.C.P.	39,785	6,000	5,368	68	113	233	58	44	102	34.2	15.0	1.9	0.9	2.4	94	
Gelligaer and Rhigos	Thomas J. Dyke, F.R.C.S.	22,985	13,715	16,480	109	258	367	164	129	293	32.6	18.0	1.2	2.0	4.0	153	
Gower	H. E. Rawlings, M.R.C.S., L.R.C.P.I.	56,475	7,428	7,607	87	100	187	56	32	88	44.5	11.5	0.3	0.68	0.3	106	
Llandaff and Dinas Powis	Richard Prichard, M.D.	69,469	18,271	19,773	387	311	598	156	133	289	34.24	14.61	2.6	1.00	2.6	129	
Llangyfelach—																	
Llangyfelach Division	E. Rice Morgan, M.R.C.S., L.S.A.	16,801	10,528	10,731	183	173	356	117	77	141	33.1	13.1	0.7	1.8	1.9	129	
Llandilo-Talybont Division	Trafford Mitchell, M.D., D.P.H.	26,951	13,449	20,106	420	339	659	144	126	268	32.8	13.3	0.6	1.29	2.8	127	
Llantrisant and Llantwit Fardre	W. N. Davies, M.D.	18,132	8,509	11,670	216	207	423	...	...	160	38.2	17.1	0.36	0.9	1.9	165	
Neath	T. P. Whittington, L.R.C.P., L.R.C.S.	5,184	23,953	23,359	...	...	771	...	...	384	33.0	16.4	2.60	1.1	2.6	147	
Penybont	Wyndham Randall, M.R.C.S., L.R.C.P.	4,023	14,664	13,585	65	198	463	112	106	218	34.0	16.0	1.1	0.8	5.0	131	
Pontardawe—																	
East Division	D. Thomas, M.D.	16,352	7,201	8,740	131	167	298	69	44	113	34.0	12.9	2.18	0.57	2.8	134	
West Division	G. Griffith, M.R.C.S., L.R.C.P.	17,971	10,174	10,945	190	180	370	77	82	159	33.89	14.5	0.27	1.9	3.8	134	The 7 births=birth rate 4.34 at Asylum not included. The 108 deaths at Asylum are not included. This equals a death rate of 65.2.

*Population 1893.

Deaths at certain Ages and from Specified Causes.

The 108 deaths at the Asylum are included.

TABLE III.

Notification, Isolation, Adoptive Acts.

SANITARY DISTRICTS.	Isolation Hospital (other than Workhouse) at the end of 1896.	ADOPTIVE ACTS.					Public Scavenging.	Ages under 5 or above 5.	CASES NOTIFIED OR OTHERWISE ASCERTAINED.													CASES REMOVED TO HOSPITAL.				REMARKS.
		INFECTIOUS DISEASES.		Public Health Acts (Amendment) Act.	Small Pox.	Scarlet Fever.			Diphtheria.	Membranous Group.	FEVERS.					Erysipelas.	Measles.	Whooping Cough.	Small Pox.	Scarlet Fever.	Diphtheria.	Enteric Fever.				
		Notification Act.	Prevention Act.								Typhus.	Enteric.	Con- tinued.	Puer- peral.												
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23				
URBAN.																										
Aberavon Borough	Yes.	January, 1891.	January, 1891.	February, 1891.	Yes.	Under 5 5 upwards	4	192	71	24	...	7	...	6	18	...	...	4	...	...	...	...
Aberdare...	Yes.	No.	No.	No.	Yes.	Under 5 5 upwards	1	100	36	24	...	22	...	8	6	...	...	...	...	...	...	...
Barry	Yes.	August, 1890.	January, 1891.	Nov., 1891. Part 5.	Yes.	Under 5 5 upwards	...	109	6	5	...	...	...	...	12	...	...	...	...	...	...	...
Bridgend	Small Pox Hospital.	May, 1891.	May, 1891.	Part 3. 1891.	Yes.	Under 5 5 upwards	4	85	11	...	...	22	...	2	71	...	...	4	1	...	4	...
Briton Ferry	Yes temporary.	No.	No.	No.	Yes.	Under 5 5 upwards	20	16	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Caerphilly	No.	September, 1893.	November, 1893.	March, 1894. Part 3.	Yes.	Under 5 5 upwards	...	40	3	3	...	3	...	3	8	...	...	...	...	...	...	...
Cowbridge	No.	June, 1894.	No.	No.	Yes.	Under 5 5 upwards	...	21	9	3	...	...	...	...	...	...	...	...	...	...	...	...
Garw and Ogmore	No.	April, 1891.	No.	No.	Part.	Under 5 5 upwards	...	47	17	2	...	3	...	3	5	...	...	...	...	...	...	...
Glyncorwg	No.	No.	No.	No.	Part.	Under 5 5 upwards	...	1	...	...	...	1	...	3	3	...	...	...	...	...	...	...
Maesteg	No.	April, 1893.	No.	No.	Part.	Under 5 5 upwards	...	57	...	3	...	...	...	...	...	...	...	...	...	...	...	...
Margam	New Hospitals completed.	June, 1891.	Yes.	Yes.	Yes.	Under 5 5 upwards	...	33	...	9	...	2	...	...	2	...	...	...	...	...	...	...
Merthyr	One at Dowlais, one at Merthyr.	January, 1891.	March, 1891.	March, 1891.	Yes.	Under 5 5 upwards	...	50	...	...	...	...	...	6	5	...	...	...	...	...	...	...
Mountain Ash	Yes.	1889.	No.	1891.	Yes.	Under 5 5 upwards	...	40	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Neath Borough	Yes.	1890.	Yes.	Yes.	Yes.	Under 5 5 upwards	...	53	...	...	...	2	...	...	...	...	...	...	...	...	...	...
Oystermouth	Swansea Borough Hospital.	November, 1892.	1892.	No.	Yes.	Under 5 5 upwards	...	47	6	3	...	6	...	...	...	...	...	...	...	...	...	...
Penarth	No.	May, 1890.	No.	No.	Yes.	Under 5 5 upwards	...	13	17	5	...	...	...	...	...	...	...	...	...	...	...	...
Pontypridd	Small Pox Hospital, 1896.	Yes.	1890.	Yes.	Yes.	Under 5 5 upwards	...	10	206	87	...	187	...	19	92	...	...	10	...	...	...	...
Porthcawl	No.	1895.	1895.	1895.	Yes.	Under 5 5 upwards	...	100	...	9	...	2	...	...	...	...	...	...	...	...	...	...
Ystradgynaf	Yes.	January, 1894.	January, 1894.	Jan., 1894. Part 3.	Yes.	Under 5 5 upwards	...	24	6	...	19	...	2	26	...	...	...	...	...	...	...	...
RURAL.																										
Cowbridge	No.	March, 1890.	No.	Part 3. 1893.	Part.	Under 5 5 upwards	...	3	55	7	2	...	23	...	22	379	...	...	3	...	...	...	
Gelligaer and Rhigos	Cottage.	November, 1890.	No.	No.	Yes.	Under 5 5 upwards	...	6	5	8	...	...	...	...	...	...	...	...	...	...	...	...
Gower	No.	No.	No.	No.	Part.	Under 5 5 upwards	...	73	2	...	...	3	...	...	4	...	...	...	...	...	...	...
Llandaff and Dinas Powis	Cardiff Borough Hospital.	December, 1889.	1891.	June, 1891.	Yes.	Under 5 5 upwards	...	73	2	...	...	3	...	...	...	...	...	...	...	...	...	...
Llangyfelach—Llangyfelach Division	Swansea Borough Hospital.	1889.	1895.	No.	Part.	Under 5 5 upwards	...	5	326	14	6	...	20	...	6	29	...	...	5	...	...	...	
" Llandilo-Talybont Division	Swansea Borough Hospital.	1889.	1895.	No.	Part.	Under 5 5 upwards	...	5	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Llantrisant and Llantwit Fardre	No.	1893.	No.	1895.	Part.	Under 5 5 upwards	...	12	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Neath	Yes.	November, 1890.	March, 1891.	March, 1891.	Part.	Under 5 5 upwards	...	6	5	8	...	...	...	...	...	...	...	...	...	...	...	...
Pengbont	No.	March, 1891.	No.	Part 3. Oct., 1894.	Part.	Under 5 5 upwards	...	73	2	...	...	3	...	...	...	...	...	...	...	...	...	...
Pontardawe—East Division	No.	No.	No.	No.	Part.	Under 5 5 upwards	...	5	...	...	...	...	...	...	...	...	...	...	...	...	...	...
" West Division	No.	No.	No.	No.	Part.	Under 5 5 upwards	...	12	...	...	...	...	...	...	...	...	...	...	...	...	...	...

Also 5 Puerperal and 7 Erysipelas.
Also 1 Erysipelas.

URBAN

RURAL