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GLAMORGAN COUNTY COUNCIL.

ANNUAL REPORT

OF THE

MEDICAL OFFICER OF HEALTH,

FOR THE YEAR 1908,

INCLUDING A

Summary of the Annual Reports of the District Medical
Officers of Health.

BY

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

CARDIFF:

WILLIAM LEWIS, PRINTER AND STATIONER, DUKE STREET.

1909.

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INDEX.

Part I.

STATISTICS :—	Page
Introduction	1
Area and Population	2
Births and Birth-rate	3
Deaths and Death-rates	5
Infantile Mortality	8
Zymotic Diseases	10
Small Pox	10
Measles	10
Scarlet Fever	12
Diphtheria and Membranous Croup	15
Whooping Cough	16
Fever	16
Typhus Fever	16
Typhoid or Enteric Fever	19
Puerperal Fever	19
Diarrhœa	20
Erysipelas	20
Phthisis	21
Other Tubercular Diseases	21
Tuberculosis	21
Cancer, Malignant Disease	22
Death-rates, classified according to Disease and Locality	23
Notification of Infectious Diseases	

ADMINISTRATION :—

Provision of Isolation Hospitals by Local Authorities	25
Isolation Hospitals	25
Disinfection	28
Preservatives and Colouring Matters in Food	29
Regulations for the Sale of Milk	33
Tests for Farmers' Milk	35
Sale of Food and Drugs Acts	36
Fertilizers and Feeding Stuffs Act	40
Water Supply	40
Examination of Water Supplies	43
Sewerage and Sewage Disposal Works	43
Chemical Examinations of Sewages and Sewage Effluents	45
Refuse Disposal	48
Pollution of Rivers and Streams	48
Factories and Workshops	57
Midwives Act, 1902	58
Dairies, Cowsheds, and Milkshops	59
Milk and Dairies Bill	60
Inspection of Meat and other Articles of Food	61
Veterinary Inspection of Dairy Cattle	61
Proposed Classes for Qualifying as Inspectors of Meat and Other Foods	61
Syllabus of Course of Instruction	63
Seizure and Condemnation of Tuberculous Meat	64
Public Health Laboratory	64
Housing of the Working Classes	67
Local Government Board Inquiries	71
Sanitary Legislation of 1908	72
Rainfall	72
Meteorological Observations	73

Part II.

URBAN DISTRICTS.

	Page
Aberavon Borough	86
Aberdare	88
Barry	91
Bridgend	94
Briton Ferry	95
Caerphilly	96
Cowbridge Borough	99
Glyncorwg	100
Maesteg	101
Margam	104
Mountain Ash	106
Neath Borough	108
Ogmore and Garw	110
Oystermouth	112
Penarth	114
Pontypridd	115
Porthcawl	118
Rhondda	119

RURAL DISTRICTS.

Cowbridge	123
Gelligaer and Rhigos	124
Gower	128
Llandaff and Dinas Powis	129
Llantrisant and Llantwit Fardre	131
Neath	132
Penybont	134
Pontardawe	137
Swansea—Llandilo-Talybont Division	139
„ Llangyfelach Division	141

PORT SANITARY DISTRICTS.

Cardiff	143
Penarth Dock	143
Barry	143
Swansea	144

APPENDIX.

- Table I.—Area, Population, Births, Deaths, etc.
 Table II.—Deaths at certain ages and from specified causes.
 Table III.—Infantile Mortality.
 Table IV.—Notification and Isolation.

10 Jan

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Glamorgan County Council.

To the Chairman and Members of the Sanitary Committee.

GENTLEMEN,

I have the honour to submit to you my Annual Report for the year 1908, on the health and sanitary condition of the Administrative County of Glamorgan, together with a summary of the Reports of the District Medical Officers of Health.

The arrangement of the subject matter is the same as that adopted in previous reports, so that the series may be uniform for the purpose of comparison.

In the new Memorandum on the Duties of Medical Officers of Health, issued by the Local Government Board in November, 1908, it is stated that they consider that every Medical Officer of Health ought not, in general, to have any difficulty in preparing his Report within *two months*, but if, from any special circumstances it cannot be completed within this period, it should be presented within at least *three months* from the end of the year.

Out of a total of 31 Reports received from District and Port Sanitary Authorities, only *five* reached me within *two months*, and only *sixteen* within *three months*, from the end of the year. *Two* came in as late as the 3rd June and 16th July respectively, and it is for this reason that this Report has again been somewhat delayed.

All the District Reports were presented in book or pamphlet form, but there is still a need of greater uniformity in regard to their size, etc. The Local Government Board Tables, which should be printed and included in such a way as to form part of every report, were in many cases received in manuscript, and simply fastened to the report. Under the circumstances, I again venture to appeal to the various District Medical Officers of Health, and would suggest that :—

- (1) The Reports should be printed in *demioctavo*, i.e., 8½ by 5½ inches.
- (2) The five statistical tables required by the Local Government Board be printed and appended.

Again, with regard to the Reports of the Medical Officers themselves, several new subjects are mentioned with regard to which information should be afforded, viz. :—

- (1) Any action taken under the Housing of the Working Classes Act.
- (2) Plumbo-solvency of water.
- (3) Amount of Hospital accommodation.
- (4) Tuberculous milk.
- (5) The control of Tuberculosis.
- (6) Local administration of the Midwives and Notification of Births Acts.

It is gratifying to find that the majority of the Reports under review dealt with the above-mentioned important questions.

The Special Reports received during the year were not so numerous as in the past, and it may serve some useful purpose to quote from the Order of the Local Government Board, which defines the duties of Medical Officers of Health, the following articles :—

“(15) He shall give immediate information to *Us* of any outbreak of dangerous epidemic disease, and shall transmit to *Us* a copy of each annual report, and of any special report. He shall make a special report to *Us* of the grounds of any advice which he may give to the Sanitary Authority, with a view of their requiring the closure of any School or Schools in pursuance of the Code of Regulations approved by the Education Department, and for the time being in force.”

“(16) At the same time that he gives information to *Us* of any outbreak of infectious disease, or transmits to *Us* a copy of his annual report, he shall give the like information or transmit a copy of such report to the County Council of the County.”

Favourable as the statistics for 1907 were, those for 1908 were more favourable, especially in regard to the birth-rate, which exceeds that for England and Wales by 9·4, and is an increase of 1·84, as compared with the figures for the County for 1907. The general death-rate was 15·84, as compared with 15·61 for 1907, and is 1·1 higher than the rate for England and Wales.

The work of providing Isolation Hospitals has continued to make satisfactory progress, and there are sure signs that within a year or two every District will possess means of isolation for their infected sick.

Considerable time has been devoted to the administration of the Midwives Act, 1902, and there is conclusive evidence that this Act is having the beneficial effects anticipated.

During the year much time and attention was given to the all-important subject of water supply, and as a consequence thereof the County Council promoted a Bill in Parliament (Session 1909). Under this Bill powers were sought “To constitute a Water Board for the County of Glamorgan, and to empower the Board to acquire the Undertakings, or part of the Undertakings, of certain Companies, and to supply Water; to confer powers on certain Local Authorities; and for other purposes.” The Preamble of this Bill, after a lengthy hearing—almost three weeks—by a Committee of the House of Commons, was approved, and the Bill has been read a third time, and passed by the Examiners to go before the House of Lords.

There are several matters that yet require attention by the Sanitary Committee, viz., the consideration of :—

- (1) The provision of sanatoria for the *poorer* consumptives.
- (2) The veterinary inspection of dairy cattle and cowsheds.
- (3) The inspection of meat and other articles of food.
- (4) The amendment of the Rivers Pollution Prevention Acts, or the promoting of a Bill with a view of obtaining a Special Act.
- (5) More satisfactory methods of refuse disposal.
- (6) The prevention of plumbism caused by water.

With regard to No. 3, there are indications that the Education Committee will, in the near future, provide, free of charge, the necessary facilities to enable Sanitary Inspectors to become qualified as Inspectors of Meat and other Foods.

Although the County Council has no direct control over some of the above matters, yet much can be achieved by urging and helping the Local Authorities to carry out their duties, and further legislation is needed as regards milk, meat, etc.

The weekly returns of infectious diseases were regularly received, and I take this opportunity of thanking the Medical Officers of Health for their cordial co-operation in this and other matters.

Colonel Henry Lewis, the Chairman of the Sanitary Committee, has rendered the greatest assistance, and is always anxious and willing to do all he can in the interests of the health of the public, both by his presence and advice.

I am pleased to say that the relationship existing between myself and staff and the District Medical Officers of Health and Medical Practitioners in the County is of a most cordial character.

I take this opportunity of expressing my great appreciation for the continued support and assistance I have received from the Chairman of the Council, and from the Chairman and Members of the Sanitary and other Committees.

I am,

Your obedient Servant,

W. WILLIAMS.

PUBLIC HEALTH DEPARTMENT,

9, THE PARADE, CARDIFF,

20th July, 1909.

PART I.

THE ADMINISTRATIVE COUNTY.

STATISTICS.

AREA AND POPULATION.

There has been a change in the area of the Administrative County during 1908, and the Sanitary Districts are one less in number than they were at the end of 1907, and are made up of 18 Urban and 9 Rural Districts. During the year the Merthyr Tydfil Urban District was constituted a County Borough.

The population of the Administrative County, according to the Census, 1891, was 467,954. At the time of the Census, 1901, it was 601,092, thus showing an increase for 10 years of 133,792, or 28·6 per cent.

The estimated population of the Administrative County, mid-year 1907, was 709,067, and at mid-year 1908, was 649,425, showing a decrease for one year of 59,642, or 8·41 per cent.

Different methods of estimating the population are made use of by the various District Medical Officers. Such estimates are difficult to make in a County like Glamorgan, where it is common to find large centres of population in places where a few years ago there was scarcely a house, *e.g.*, Senghenydd, Aber, Ystrad Mynach, Bargoed, Cyllau Valley, Thomas Town (Tonyrefail), &c., &c.

The following Table shows the growth of the population in the Administrative County from 1891 to 1901, the population in each succeeding year being calculated in geometrical progression. The figures for 1902-1908 represent the estimated population for these years respectively.

TABLE I.

Year.	Population.					Excess of Births over Deaths.
1891 (Census)	..	467,954	..	..	..	Not known.
1892	..	479,816	..	..	..	"
1893	..	491,984	..	..	..	10,012
1894	..	504,456	..	..	..	8,882
1895	..	517,246	..	..	..	8,995
1896	..	530,360	..	..	..	10,551
1897	..	543,805	..	..	..	10,128
1898	..	557,592	..	..	..	10,739
1899	..	571,730	..	..	..	8,385
1900	..	586,225	..	..	..	10,089
1901 (Census)	..	601,087	..	..	..	10,194
1902 (estimated)	..	614,726	..	..	..	12,527
1903	..	631,398	..	..	..	13,137
1904	..	649,797	..	..	..	12,781
1905	..	669,193	..	..	..	12,410
1906	..	689,278	..	..	..	13,090
1907	..	709,067	..	..	..	13,114
*1908	..	649,425	..	..	..	12,929

*The Merthyr Urban District, with a population of 77,219, was constituted a County Borough during the year.

Unfortunately the number of births and deaths in the County for the whole of this period is not known, for *all* the District Reports were not sent to me prior to 1894. The average annual excess of births over deaths during the 16 years (1893-1908) was 11,122. This number $11,122 \times 16 = 177,952$ represents approximately the increase in the population caused by the excess of births over deaths during this period.

BIRTHS.

There were 23,347 births registered in the Administrative County during 1908. This is equivalent to a birth-rate of 35.95. Of these, 16,560 occurred in Urban, and 6,787 in Rural Districts, giving a birth-rate for the former of 36.13, and for the latter of 35.50. The birth-rate shows an increase of 1.84 as compared with 1907.

The local rates are given in Table I. (Appendix), but the information as to sexes is incomplete in the Reports from Briton Ferry, Glyncorwg, Neath Borough, Ogmore and Garw, Oystermouth, Penarth, Rhondda, Gower, Llandaff and Dinas Powis, Llantrisant and Llantwit Fardre, and Penybont.

Among the individual Districts the birth-rates vary from 44.8 to 13.0. The highest being 44.8 in Neath Rural; 42.1 in Caerphilly; 41.0 in Rhondda; 40.3 in Gelligaer and Rhigos; 39.8 in Mountain Ash; 39.7 in Ogmore and Garw; 39.1 in Aberavon Borough; and 39.0 in Llantrisant and Llantwit Fardre.

As is usual, the birth-rates are highest in the industrial and mining Districts and lowest in agricultural and residential Districts.

The birth-rate in England and Wales was 26.5 per 1,000 of the population, which is 0.2 per 1,000 above the rate of 1907.

I would remark that, in addition to the salubrity and sanitation of a District, many conditions combine to influence the death-rate. Amongst others the birth-rate exerts an influence which is frequently overlooked. In the majority of Districts in this County extensive mining and other 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 five years of age is far higher than during any subsequent period (up to 65), and since the death-rate among persons between 15 and 50 or 55 is lower than the death-rate of all other age periods, 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 or advanced middle life.

In the following Table are given the mean figures for the County for seven years (1893-1899), and for England and Wales for the 10 years (1890-1899), together with the rates for 1900-1908.

TABLE II.

YEAR.	Birth rate per 1,000 Population.			
	Glamorgan.			England and Wales.
	General.	Urban.	Rural.	
1893-1899	37.55	39.11	33.55	30.0 (1890-1899)
1900	35.58	37.58	31.39	28.7
1901	36.8	38.04	33.7	28.5
1902	37.8	39.15	34.32	28.6
1903	36.9	37.6	34.90	28.4
1904	36.6	37.3	34.79	27.9
1905	35.9	36.48	34.63	27.2
1906	34.9	34.4	34.4	27.0
1907	34.11	34.24	33.71	26.3
1908	35.95	36.13	35.50	26.5

From this it will be seen that the County birth-rate is far in excess of the average for England and Wales, and that there is not a great difference between the birth-rate in the Urban and that in the majority of our so-called Rural Districts.

DEATHS.

GENERAL MORTALITY.—The total number of deaths registered was 10,418. Of these, 7,457 occurred in Urban, and 2,961 in Rural Districts; giving death-rates of 16.27 and 15.48 respectively. The equivalent general rate is 16.04, which is 1.34 higher than the average death-rate for England and Wales, and 1.14 higher than that of the 76 great towns.

The number of deaths registered of persons belonging to the County, as far as could be ascertained, was 10,390, which is equivalent to a nett death-rate of 15.84. The nett death-rates range from 8.0 to 20.2. Below are given comparative figures for the County for 1893-1899, and 1900-1908, and for England and Wales for the 10 years 1890-1899 and 1900-1908.

TABLE III.

	Annual Rate of Mortality per 1,000 Population.									
	Mean of 10 years. 1890-99.	1900.	1901.	1902.	1903.	1904.	1905.	1906.	1907.	1908.
England and Wales	18.3	18.2	16.9	16.3	15.4	16.2	15.2	15.4	15.0	14.7
Town Districts ..	19.1	18.9	17.8	17.4	15.45	17.2	15.7	15.9	15.4	15.8
Country Districts ..	16.7	16.6	15.7	15.3	14.8	15.3	14.9	15.1	14.5	13.8
Glamorgan ...	19.2	18.6	19.5	17.4	16.11	16.9	17.43	15.4	15.61	15.84
Urban Districts ..	20.3*	19.6	20.65	18.34	16.38	17.6	17.99	15.6	15.75	16.19
Rural Districts ..	16.6*	15.9	16.52	15.14	15.37	15.2	15.87	14.8	15.23	15.53

* The period covered by the Glamorgan rates is seven years—**1893-1899**—as no returns were available before.

In small Districts there are always considerable fluctuations of death rates from year to year, whereas in populations of 1,000 and upwards these fluctuations are not so marked. In residential and suburban districts low birth- and high death-rates prevail, owing to the excess of unmarried adults in these places. It is erroneous to suppose that certain Districts, because they happen to have low death-rates, are healthy.

Arranged in the order of the nett death-rate, the Districts stand thus:—

Aberdare	20.2	Cowbridge Rural	14.2
Aberavon Borough.. .. .	19.4	Llantrisant and Llantwit Fardre	13.9
Neath Rural	19.3	Ogmore and Garw	13.8
Rhondda	18.9	Caerphilly	13.6
Gelligaer and Rhigos	16.8	Oystermouth	13.59
Glyncorwg	16.6	Bridgend	13.52
Neath Borough	16.1	Llangyfelach	13.5
Pontypridd	15.8	Llandaff and Dinas Powis	11.83
Mountain Ash	15.7	Cowbridge Borough	11.6
Briton Ferry	15.5	Margam	11.6
Pontardawe	15.5	Barry	11.53
Penybont	15.36	Penarth	10.3
Llandilo-Talybont Division	15.2	Porthcawl	8.0
Gower	14.3		

Of the total deaths registered, 3,550 were those of children under one year, and 1,411 of children one year of age and under five years. This is equivalent to 34.07 and 13.54 per cent. respectively.

INFANTILE MORTALITY.

Of every 1,000 children whose births were registered, 152 died before completing the first year of life as compared with 136 in 1907. This calculation is based upon ascertained figures, *i.e.*, the number of births registered and the number of deaths under one year of age, and, therefore, it has not the uncertainty which attaches to the other rates of mortality, which are based upon estimates of population, and which can only be approximately proved.

The various Sanitary Districts are tabulated below in order of their Infantile Mortality rate:—

Margam	279	Neath Borough	131
Aberdare	212	Neath Rural	128
Rhondda	183	Swansea Rural (Llandilo-Talybont Division)	127
Pontypridd	181	Ogmore and Garw	120
Maesteg	179	Penybont	110
Aberavon	162	Penarth	105
Briton Ferry	160	Cowbridge Rural	105
Gelligaer and Rhigos	158	Bridgend	102
Glyncorwg	147	Gower	100
Mountain Ash	147	Llandaff and Dinas Powis	99
Pontardawe	141	Oystermouth	85
Caerphilly	138	Llantrisant and Llantwit Fardre	84
Barry	135	Porthcawl	65
Swansea Rural (Llangyfelach Division)	135	Cowbridge Borough	52

It will be noticed that these rates vary immensely. In individual Districts the highest Urban rates were—Margam (279); Aberdare (212); Rhondda (183); Pontypridd (181); Maesteg (179); Aberavon (162); Briton Ferry (160); Gelligaer and Rhigos (158); and Glyncorwg and Mountain Ash (147).

The causes of this high Infantile Mortality are discussed at some length in several of the reports, and, although this mortality is generally acknowledged to be largely preventable, yet it is dependent to a great extent on climatic and meteorological conditions.

Among the important causes are mentioned:—

- (a) Early marriages.
- (b) Improper feeding, clothing, and care of the infant, the latter being due to ignorance, and not so much to lack of care.
- (c) Antenatal conditions affecting the unborn child through the mother, *e.g.*—alcoholism, syphilis, and employment of mothers outside the home, &c.
- (d) Want of skilled assistance during and after labour.
- (e) Domestic evils, dirty and overcrowded houses, neglect of parents on account of intemperance,
- (f) Insanitary surroundings.
- (g) The substitution of artificial for breast feeding, thus incurring the evils which attend the use of an often unsatisfactory and adulterated milk supply.
- (h) Indifference on the part of parents to the dangers of Measles, Whooping Cough, Diarrhoea, &c.

That overcrowding and insanitary conditions are important factors in bringing about this high Infantile Mortality in the industrial Districts of the County cannot be disputed, and as these are evils capable of being remedied, no efforts should be spared by Sanitary Authorities to cope with them.

On examining Table IV. (Appendix) it will be seen that more than one-third died under one month, and that the chances of surviving become greater month by month. It will be further seen that the diseases, &c., which contributed mostly to this mortality were—Atrophy, Debility and Marasmus, Convulsions, Premature Birth, Pneumonia, Bronchitis, and Diarrhoea.

Among the remedial measures indicated are :—

- I.—Instruction in the laws of health, including the feeding and care of infants, thrift, temperance, and moral instruction to the higher standards for girls, and the formation of continuation classes in these subjects.
- II.—The education of the expectant mother as to personal health, the importance of suckling, and the care of the infant generally.
- III.—The distribution of leaflets on the feeding and care of infants, &c.
- IV.—The control and supervision of milk supplied to infants that are artificially fed.
- V.—The notification of all births to the Medical Officer of Health within 48 hours.
- VI.—Better methods of protection of infant life, especially :—
 - (a) Those born out of wedlock and farmed out.
 - (b) The registration of still births.
 - (c) The removal of infants from undesirable parents, and
 - (d) The provision of skilled assistance at birth.
- VII.—Special attention to the cleansing of streets, flushing of gullies, and the early and complete removal of all offensive accumulations, especially during the summer months.

Up to the present the efforts made to reduce this high Infantile Mortality rate have met with but little success. Public interest, however, has been stimulated by the prominence given to this great wastage of life, in the press, and by the National Conference on Infantile Mortality held in London in 1906, and in which the President of the Local Government Board took such a leading part. The Right Hon. John Burns, in the course of his inaugural address, reviewed several important aspects of the question, and promised legislative support should the solution of the problem which had originated the Conference be likely to be promoted by such means.

The following resolutions were passed by the Conference :—

- 1.—That the Education Department be urged to add instruction in elementary hygiene with reference to the dietary and rearing of infants to their present scheme for systematically training girls in the senior classes in the practice and principles of personal hygiene and the elements of dietary.

- 2.—That, in the opinion of this Conference, immediate legislation is required enabling Sanitary Authorities to establish or support depôts for the supply of pure, or modified, or sterilized milk, and to defray any cost out of the monies available for public health purposes.
- 3.—That, in view of the information submitted, the Conference is of opinion that all still-births should be notified within 48 hours to the Medical Officer of Health of the District in which they occur, and that no burial should take place without a medical certificate.
- 4.—That notification of all births be given within 48 hours to the Medical Officer of Health of the District in which they occur.
- 5.—That, in the opinion of this Conference, the question of the insurance of infant lives under twelve months is one demanding serious consideration, and, with a view to receiving reliable information, the Government should be asked to appoint a Departmental Committee of Inquiry on the whole question.
- 6.—(a) That the period of one month's abstention from factory work away from home now imposed on mothers, be extended to at least three months, and that, on their return to work, evidence must be produced satisfactory to the Local Authority that proper provision has been made for the care of the child.
 (b) That no employer of labour shall permit a woman advanced in pregnancy to engage in factory labour unless her ability therefor has been certified to the satisfaction of the Local Authority.
- 7.—(a) That, having regard to the ascertained fact that in centres of industries where women are largely employed away from their homes, an excessive number of deaths of infants takes place, and that this is contributed to by the improper conditions existing at the houses in which the infants are placed out to nurse, it is necessary that the persons by whom and the places into which infants are received should be under supervision by the local sanitary authority.
 (b) That the Infant Life Protection Act be amended to remedy abuses which are not at present provided against.
- 8.—That all preparations offered or sold as food for infants should be certified by a Government analyst as non-injurious, and that each packet should contain its analysis.
- 9.—That the Dairies, Milkshops, and Cowsheds Order is defective, and that any amendment should extend the definition of disease as applied to animals and should make the provision of regulations by Local Authorities compulsory. That the scope of the regulations should be extended to cover dirty milk, and should enable Local Authorities to prohibit the sale of any milk which fails to comply with the conditions of purity agreed upon.
- 10.—That, in the opinion of this Conference, the appointment of qualified women specially trained in the hygiene of infancy is necessary as an adjunct to public health work.
- 11.—That, in the opinion of this Conference, the Midwives Act, 1902, should be extended to Scotland and Ireland.

It is significant that since the above-named Conference several Bills giving effect to one or more of the above resolutions, were introduced, and some of which have since become law.

Among these are :—

- (1) Notifications of Births Act, 1907.
- (2) Public Health (Regulations as to Foods) Act, 1907.
- (3) A Bill to authorise and regulate the establishment of Milk Depôts by certain Local Authorities and some matters incidental thereto (cf. Resolution 2).

The work of reducing this appalling Mortality of Infants should not be left to Sanitary and Education Authorities only. It is a work in which the parents should be made to realise their responsibilities, and in which Social, Philanthropic, and Religious Institutions have great opportunities of assisting. It is only by the hearty and intelligent co-operation of municipal and social efforts that the best results can be obtained.

Without wishing to disparage such remedial measures as mentioned above, I would point out that there are other causes at work tending to the deaths of infants, which are preventable by other means than the instruction of mothers on how to feed their children. Amongst these causes may be the fertile growth of diarrhoea germs on animal and vegetable refuse during the warm weather, and their transference to the artificially fed infants' foods by dust and flies.

Nature's remedy during 1908 has been a cold summer, preventing the growth of these germs, and copious rain, washing away the organic refuse.

Our remedy should be the thorough scavenging of organic refuse from the vicinity of dwellings, and the seeing that the infants have food which cannot be contaminated, *i.e.*, the mother's breast-milk.

ZYMOTIC DISEASES.

Small Pox, Measles, Scarlet Fever, Membranous Croup, Whooping Cough, Fever (including Typhus, Enteric and other continued), and Diarrhoea.

The seven principal epidemic diseases caused 1,437 deaths, which is equivalent to a County rate of 2.21, as compared with 1.71 for 1907, and 0.99 for England and Wales.

The number of deaths attributed to the several diseases are given below :—

TABLE IV.

DISTRICTS.					Small Pox.	Measles.	Scarlet Fever.	Diphtheria and Membranous Croup.	Whooping Cough.	Fever.	Diarrhoea.	Total.
Urban	—	245	24	96	179	41	589	1,174
Rural	—	75	8	36	74	10	60	263
Administrative County			—	320	32	132	253	51	649	1,437

Arranged in the order of their zymotic death-rates the various Districts stand thus :—

Aberavon	5.5	Glyncorwg	1.55
Rhondda	4.01	Swansea Rural (Llangyfelach Division)	1.51
Aberdare	3.6	Barry	1.5
Pontypridd	2.9	Neath Rural	1.35
Llantrisant and Llantwit Fardre	2.56	Pontardawe	1.30
Mountain Ash	2.4	Bridgend	1.20
Caerphilly	2.3	Cowbridge Rural	1.2
Neath Borough	2.26	Ogmore and Garw	1.12
Briton Ferry	2.12	Gower	0.82
Llandaff and Dinas Powis	1.73	Swansea Rural (Llandilo-Talybont Div.)	0.81
Gelligaer and Rhigos	1.7	Oystermouth	0.59
Margam	1.62	Penarth	0.5
Maesteg	1.59	Porthcawl	0.29
Penybont	1.57	Cowbridge Borough	Nil.

In the following Table are given the annual death-rate from *All Causes*, and the *Principal Zymotic Diseases* for the County, and for England and Wales, during the year 1908 :—

TABLE V.

DISTRICTS.	All Causes.	Principal Zymotic Diseases.	Small Pox.	Measles.	Scarlet Fever.	Diphtheria and Membranous Croup.	Whooping Cough.	Fever.	Diarrhoea.	Deaths under one year per 1,000 births.
England and Wales	14.7	1.29	0.00	0.22	0.08	0.15	0.27	0.07	0.50	121
76 Great Towns	14.9	1.59	0.00	0.31	0.10	0.16	0.29	0.08	0.65	128
142 Smaller Towns	14.0	1.26	0.00	0.20	0.06	0.15	0.25	0.08	0.52	124
England and Wales <i>less</i> the 218 Towns	14.7	0.99	0.00	0.13	0.06	0.15	0.25	0.07	0.33	110
Glamorgan	16.04	2.21	0.00	0.49	0.04	0.20	0.37	0.07	0.99	152
Urban Districts	16.27	2.51	0.00	0.53	0.05	0.20	0.39	0.08	1.28	162
Rural Districts	15.48	1.37	0.00	0.39	0.04	0.18	0.38	0.05	0.31	125

From the above figures it will be seen that the general death-rate for the County is 1.34 higher than that for England and Wales, 0.24 higher than the 76 great towns, 1.14 higher than that for the 142 smaller towns, and 1.34 higher than England Wales *less* the 218 towns.

The death-rate from the principal zymotic diseases is 0.92 higher than that for England and Wales, 0.62 higher than for the 76 great towns, 0.95 higher than the 142 smaller towns, and 1.22 higher than England and Wales *less* the 218 towns.

The death-rate from Small Pox is the same as that for England and Wales, viz., 0.00.

The death-rate from Measles is 0.27 higher than that for England and Wales, 0.18 higher than the 76 great towns, 0.29 higher than the 142 smaller towns, and 0.36 higher than England and Wales *less* the 218 towns.

The death-rate from Scarlet Fever is 0.04 *lower* than that for England and Wales, 0.06 *lower* than the 76 great towns, 0.02 *lower* than the 142 smaller towns, and 0.01 higher than that of England and Wales *less* the 218 towns.

The death-rates from Diphtheria and Membranous Croup and Whooping Cough are higher, whilst that from Fever is the same as that for England and Wales, and the Diarrhoea rate is higher than that for England and Wales.

The Infantile Mortality Rate is 152 as compared with England and Wales 121.

SMALL POX.

One case of Small Pox was notified as compared with 4 in 1907. This case occurred at Bridgend.

MEASLES.

Measles is not notifiable in any Sanitary District, and therefore there is no correct information available of the amount of sickness occasioned by this disease.

Judging by the number of deaths, and the reference made to this disease in the local summaries, it was somewhat less prevalent in the County than in 1907, and to it are attributed 320 deaths—245 in Urban, and 75 in Rural Districts—as compared with 366 deaths in 1907. This is equivalent to a death-rate of 0.49—0.53 in Urban and 0.39 in Rural Districts. The rate for England and Wales was 0.22.

The fact that Measles is probably infectious before the appearance of the rash is obviously an unfortunate element in the problem of its control, and, even if notification existed throughout the County, it is doubtful whether, with the present staff of Inspectors, much could be done in this direction.

In Rural Districts, on the other hand, much can be done whereby the extension of Measles through the invaded areas may be checked, by measures such as :—

- I. Information furnished by Sanitary Authorities to School Authorities (and *vice versa*).
- II. Exclusion from Schools of members of households invaded by Measles ; and by
- III. Judicious School closure.

SCARLET FEVER.

The disease contributed 2,417 cases of illness and 32 deaths, as compared with 1,880 cases and 50 deaths in 1907.

This mortality is equivalent to a rate of 0.04—0.05 in Urban, and 0.04 in Rural Districts. The rate for England and Wales was 0.08. In the following Table are given the comparative figures for the County for a period of eight years, 1893-1900 ; and for 1901-1908 ; and for England and Wales for the period of 10 years, 1891-1900, and for 1901-1908.

TABLE VI.

YEAR.	Death-rate per 1,000 Population.			
	Glamorgan.			England and Wales.
	General.	Urban.	Rural.	
1893-1900.	0·17	0·18	0·14	1891-1900. 0·16
1901	0·22	0·2	0·15	0·13
1902	0·22	0·25	0·14	0·15
1903	0·25	0·28	0·15	0·12
1904	0·19	0·21	0·14	0·11
1905	0·15	0·17	0·12	0·11
1906	0·08	0·08	0·06	0·10
1907	0·07	0·08	0·02	0·09
1908	0·04	0·05	0·04	0·08

The highest rates are recorded from Penarth (0·18) ; Gelligaer and Rhigos (0·16) ; and Caerphilly (0·11).

That the disease was of a mild character is shown by the fact that the case-mortality per cent. was 1·32.

Of the 2,417 cases, 144 *only* were removed to and treated at Infectious Diseases Hospitals. Indeed, the majority of our existing Isolation Hospitals are sadly in need of accommodation for Scarlet Fever cases, and consist mostly of two pavilions, one for Enteric, and the other for Diphtheria cases.

Timely and efficient isolation of the first cases is of great importance, and should always be borne in mind. A point of great interest in connection with this disease is that Hospital isolation, even when practised as thoroughly as possible, has failed, in some instances at least, to diminish its prevalence. Such a statement, however, is not intended to convey the impression that Hospital isolation is not beneficial, as a matter of fact, the very mildness of the disease is one of the chief causes of its continued prevalence, as a large proportion of the slight cases—cases where perhaps the rash was scarcely visible and only a sore throat complained of—must necessarily escape detection. Other precautionary measures should also be enforced, such as the judicious closure of Schools, and the adequate disinfection of the sufferers, the infected dwellings, and articles of bedding and clothing.

That the mortality is not a true index of the mischief of the case in many diseases is particularly true in the case of Scarlet Fever, and the permanent injuries inflicted by this disease are many, and cannot be accurately traced ; this fact alone is a strong reason for taking all possible precautions against the spread of the disease.

These cases, however, are just as infectious as the more severe ones, and by their unrestricted movements, and possibly by their attendance at School, etc., they spread infection with great ease.

DIPHTHERIA AND MEMBRANOUS CROUP.

There were notified 1,013 cases, resulting in 132 deaths, as compared with 876 cases and 104 deaths in 1907. This mortality is equivalent to a rate of 0·20—0·20 in Urban Districts, and 0·18 in Rural Districts. The rate for England and Wales was 0·15.

In the following Table are given comparative figures for the County, and for England and Wales, for the period of 16 years, 1893-1908.

TABLE VII.

YEAR.	Death-rate per 1,000 Population.			
	Glamorgan.			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	0·27	0·25
1896	0·39	0·26	0·21	0·29
1897	0·45	0·45	0·24	0·24
1898	0·66	0·78	0·31	0·24
1899	0·79	0·92	0·41	0·29
1900	0·76	0·82	0·57	0·29
1901	0·82	0·87	0·69	0·29
1902	0·52	0·51	0·50	0·23
1903	0·36	0·31	0·48	0·18
1904	0·25	0·20	0·39	0·17
1905	0·25	0·23	0·40	0·16
1906	0·21	0·21	0·19	0·17
1907	0·14	0·15	0·12	0·16
1908	0·20	0·20	0·18	0·15

The highest death-rates were recorded at Cowbridge Rural (0·5) ; Aberdare (0·31) ; Neath Borough (0·29) ; and Rhondda (0·24).

In the following page is shown in tabular form the *cases, deaths, case-rates, per 1,000 population, case-mortality per cent., and death-rate per 1,000 population.*

*THE DISTRIBUTION OF DIPHTHERIA AND MEMBRANOUS CROUP
THROUGHOUT THE COUNTY.*

TABLE VIII.

DISTRICTS.	Estimated Population, 1908.	Cases.	Deaths.	Death-rate per 1,000 Population.	Case- mortality per cent.	Case-rate per 1,000 Population.
URBAN.						
Aberavon (Borough)	8,500	1	—	—	0.00	0.11
Aberdare	47,334	115	15	0.31	13.04	2.42
Barry	33,202	50	5	0.15	10.00	1.50
Bridgend	7,470	5	2	0.26	40.00	0.66
Briton Ferry	8,000	16	1	0.00	6.25	2.00
Caerphilly	27,000	34	5	0.18	14.70	1.28
Cowbridge (Borough)	1,202	—	—	—	—	—
Glyncorwg	9,000	7	1	0.11	14.28	0.77
Maesteg	25,141	9	2	0.07	22.22	0.35
Margam	12,315	25	2	0.16	8.00	2.03
Mountain Ash	42,000	88	8	0.19	9.09	2.09
Neath Borough	16,800	14	5	0.29	35.71	0.83
Ogmore and Garw	24,000	59	5	0.20	8.47	2.45
Oystermouth	5,074	6	1	0.19	16.66	1.18
Penarth	16,000	39	2	0.12	5.12	2.43
Pontypridd	38,674	61	9	0.23	14.75	1.57
Porthcawl	3,425	1	1	0.00	100.	0.29
Rhondda	133,137	185	32	0.24	17.29	1.39
RURAL.						
Cowbridge	8,000	29	4	0.5	13.79	3.62
Gelligaer and Rhigos	29,774	24	4	0.13	16.66	0.80
Gower	7,266	5	—	—	—	0.68
Llandaff and Dinas Powis	27,032	85	5	0.18	5.88	3.14
Llantrisant and Llantwit Fardre	12,097	16	2	0.16	12.5	1.32
Neath	28,021	32	6	0.21	18.75	1.14
Penybont	16,502	19	5	0.27	26.31	1.15
Pontardawe	26,131	21	3	0.14	14.28	0.80
Swansea :—						
Llangyfelach Division	11,748	8	1	0.04	12.5	0.68
Llandilo-Talybont Division	24,580	59	6	0.24	10.16	2.40

There were no fatal cases of this disease in Aberavon or Cowbridge Borough.

The following Table gives for the County, as a whole, particulars similar to those given for Districts in the previous Table.

On examining the figures given below it will be seen that—

Firstly—The number of cases gradually increased from 1894-1899, when it reached its maximum. During 1900-1901, the number of cases was about the same, and since that time there has been a gradual diminution in the incidence of this disease.

Secondly—The case-rate per 1,000 population has rapidly increased year by year up to 1899, when it was 8.96, afterwards it has steadily dropped to 1.55. For the year under review it is 1.55.

Thirdly—The case-mortality per cent. has gradually decreased from 60.93 in 1894 to 9.58 in 1899, which is the lowest on record.

Fourthly—The death-rate for 1908 is 0.20.

TABLE IX.

Year.	Population.	Cases.	Deaths.	Case-rate per 1,000 Population.	Case-mortality per cent.	Death-rate per 1,000 Population.
1893	491,984	302	137	0.61	45.36	0.27
1894	504,456	215	131	0.42	60.93	0.25
1895	517,246	385	220	0.76	57.14	0.43
1896	530,360	600	203	1.13	33.83	0.38
1897	543,805	925	271	1.70	29.29	0.49
1898	557,592	2,197	404	3.94	18.36	0.72
1899	571,730	5,123	491	8.96	9.58	0.85
1900	586,225	3,583	484	6.11	13.50	0.82
1901	601,088	3,660	495	6.08	10.78	0.82
1902	604,736	2,562	325	4.16	12.68	0.52
1903	631,398	1,718	228	2.72	13.27	0.36
1904	649,797	1,330	166	2.04	12.48	0.25
1905	669,193	1,454	172	2.17	11.89	0.25
1906	689,278	1,120	147	1.62	13.12	0.21
1907	709,067	876	104	1.23	11.89	0.14
1908	649,425	1,013	132	1.55	13.03	0.20

It should be remembered that Diphtheria during recent years not only prevailed abnormally in Glamorgan, but also other Counties similarly constituted suffered most severely, such as Leicestershire, Monmouthshire, Staffordshire, West Riding of Yorkshire, &c.

With regard to the decrease in the mortality-rate there are probably several causes at work, viz. :—

- (a) The facilities offered to Medical Practitioners for the bacteriological diagnosis of this disease, thus bringing to light cases which otherwise would have remained undiagnosed.

The number of swabs examined during the year at the County Laboratory was 477, as compared with 477 and 431 in 1906 and 1907 respectively.

- (b) The more general use of antitoxin serum during recent years. The majority of Medical Practitioners use it in every case and of its value there can be no doubt.

- (c) The disease has pervaded nearly the whole County since 1897.

WHOOPIING COUGH.

As Whooping Cough is notified in the Llandaff and Dinas Powis District only, where there were 432 cases and 19 deaths, the extent of its ravages can only be measured by its death roll.

To it are ascribed 253 deaths as compared with 230 in 1907. This is equivalent to a death-rate of 0·37 as compared with 0·27 for England and Wales.

In the following Table are given corresponding figures and rates for the last 16 years :—

TABLE X.

WHOOPIING COUGH.	1893.	1894.	1895.	1896.	1897.	1898.	1899.	1900.	1901.	1902.	1903.	1904.	1905.	1906.	1907.	1908.
Deaths ..	100	170	208	219	258	160	244	232	290	153	186	303	246	180	230	253
Death-rate ..	0·20	0·33	0·40	0·41	0·47	0·28	0·42	0·39	0·48	0·24	0·29	0·46	0·36	0·26	0·32	0·37

The highest death-rates are recorded from Gelligaer (0·87; Aberdare (0·84); and Bridgend (0·80).

No deaths occurred at Cowbridge Borough, Porthcawl, and Gower.

Besides giving the deaths occasioned by this disease, in the majority of the Reports there is no other information. In addition to a 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.

Owing to the long period of the infectivity of Whooping Cough, the disease is an extremely difficult one to prevent the spread of, and all that is practicable at present is that Sanitary Authorities and Teachers in Elementary Schools should co-operate in preventing its spread.

FEVER.

In Table IV. of the Local Government Board the term "Fever" appears at the head of the three columns, the sub-headings being "Typhus," "Enteric," and "Other Continued." To these diseases are attributed 57 deaths, viz :—51 Enteric Fever, 6 Continued.

TYPHUS FEVER.

No cases of this disease occurred throughout the year.

TYPHOID OR ENTERIC FEVER.

There were 412 cases of this disease notified, and 51 deaths attributed to this cause, as compared with 496 cases, and 69 deaths in 1907. This corresponds to a death-rate of 0·07.

The highest death-rates were recorded from Glynorwg (0·22); Oystermouth (0·19); Neath Borough (0·17); Aberavon (0·11); Caerphilly (0·11); and Maesteg (0·11).

There were no deaths from this disease in Bridgend, Briton Ferry, Cowbridge Borough, Margam, Penarth, Pontypridd, Porthcawl, Cowbridge Rural, Gower, Llandaff and Dinas Powis, and Pontardawe.

Particulars of the number of cases and deaths are given in Tables II. and III. (Appendix).

Particulars of the outbreaks that occurred during the year are given in the local summaries, and in my Quarterly Reports, and are not referred to at any length here.

In the following Table corresponding figures and rates are given for the past 16 years, 1893-1908 :—

TABLE XI.

ENTERIC FEVER.		1893.	1894.	1895.	1896.	1897.	1898.	1899.	1900.	1901.	1902.	1903.	1904.	1905.	1906.	1907.	1908.
Administrative County.	Cases ..	825	703	784	665	652	840	1,487	1,156	913	697	993	809	615	554	496	412
	Deaths ..	194	105	105	99	93	105	215	173	146	123	127	95	89	68	69	51
	Death-r'te	0·39	0·20	0·20	0·18	0·17	0·18	0·37	0·29	0·24	0·23	0·20	0·14	0·13	0·09	0·09	0·07
England and Wales.																	
	Death-r'te	0·228	0·159	0·17	0·16	0·15	0·18	0·19	0·17	0·21	0·10	0·13	0·19	0·09	0·09	0·07	0·07

It is encouraging to put on record that the Typhoid death-rate is the *lowest* ever reported in this County.

In individual Districts the highest rates occurred in Glynorwg (0·22); Oystermouth (0·19); Neath Borough (0·17); Rhondda (0·16); Aberavon, Caerphilly, Maesteg (0·11); Neath Rural and Penybont (0·10).

Aberavon.—8 cases were notified, 6 of which were treated at the Hospital. No local cause could be discovered to account for the first two cases. As regards the four cases which occurred in October, the local conditions were unsatisfactory.

Aberdare.—28 notifications were received, 3 of which were withdrawn. Three of the cases proved fatal. 19 cases were treated at the Hospital, 3 of these cases being subsequently diagnosed as suffering from other diseases. The origin of the outbreak was obscure, no common cause being found.

Barry.—10 cases occurred, 4 being sailors infected abroad, and who had come to the District to visit their friends. The remaining cases apparently originated in the District, but although the strictest inquiry was made as to food, drink, and an inspection was made of the sanitary surroundings of the premises, the origin could not be traced.

Bridgend.—Of the 3 cases notified, none proved fatal.

Caerphilly.—14 cases were notified, but none proved fatal. Sanitary defects were associated with some of the cases, and a sample of the water, when submitted to bacteriological examination, was found to be "of doubtful purity," and samples of milk taken from a milk vendor in the Aber District were found, on bacteriological examination, to contain "B. Coli and Streptococci in $\frac{1}{100000}$ C.C. and possibly in smaller quantities." The milk vendor refrained from selling any more milk for a time after being cautioned.

Maesteg.—16 cases were notified, 3 of whom died. The history of one case clearly showed it to have been imported into the District, whilst in some of the other cases sanitary defects were contributory causes; these, however, were remedied.

Margam.—9 cases were notified, and 2 of the cases were treated at the Sanatorium. Insanitary conditions were discovered and remedied. Strong measures were immediately taken in every case to prevent the spread of the disease.

Mountain Ash.—26 cases were notified, 5 being due to contaminated water at Pontcynon. The tenants obtained their domestic supply from two spouts situate by the roadside. A sample of the water from these spouts was examined bacteriologically at the County Laboratory, and was found to contain sewage. These spouts were ordered to be closed and no further cases occurred. The other cases of Enteric were isolated, and in spite of diligent inquiry their origin could not be traced.

Neath Borough.—11 cases were notified and 3 died. No particulars are given in the report as to their origin, etc.

Ogmore and Garw.—13 cases were notified, 4 in the Ogmore and 9 in the Garw Divisions respectively. Five of these cases were treated at the Isolation Hospital, and were discharged cured; 2 of those treated at home proved fatal. The water and milk supplies were carefully inquired into, and seemed to be wholesome.

Oystermouth.—2 cases were notified and 1 proved fatal.

Penarth.—The only case notified was successfully treated at the Infectious Diseases Hospital.

Pontypridd.—17 cases were notified and not one proved fatal. 10 cases were treated at the Hospital and all recovered.

Rhondda.—Report not received in time to give any particulars.

Cowbridge Rural.—Only 1 case was notified, viz., that of a man at Llantwit Major; no source of infection could be traced.

Gelligaer and Rhigos.—14 cases were notified, and 2 of these proved fatal. Seven cases were removed to the Penybanc Hospital. The cases were sporadic, and due to local insanitary causes.

Llandaff and Dinas Powis.—6 cases were notified, 3 of whom were removed to the Council's Hospital.

Llantrisant and Llantwit Fardre.—6 cases were notified, and these were removed to the Rhiwfelen Hospital: 1 death occurred.

Neath.—A serious outbreak occurred at Onllwyn in September, 22 cases being notified simultaneously. On investigation it was found that the persons infected had been drinking water from an old level (not their proper supply), which upon analysis was found to be absolutely unfit for use.

Penybont.—19 cases were notified and 2 proved fatal. These cases were widely separated as regards time and place, and not connected with any further outbreak.

Pontardawe.—4 cases were notified and 3 were removed to the Hospital; 2 of these were from Caegurwen locality, and occurred soon after a burst in the water main after severe frost, and the people were reduced to the use of surface water. One case at Ystalyfera occurred in a house where a patient had suffered from the disease in 1907, and from which the serious epidemic of that year originated. As the water supply was free from suspicion, and as the surroundings had been improved since the previous year, the Medical Officer of Health attributes this case to infection from the 1907 patient, who must have acted as a "carrier."

Llandilo-Talybont Division.—1 case was notified from Llansamlet, and this proved fatal.

Llangyfelach Division.—22 cases were notified and 1 proved fatal; 8 cases were removed to Hospital. Most of the cases were associated with insanitary surroundings and want of drainage.

In addition to the provision of pure water supplies, milk, and other articles of food, the importance of which the various District Councils are alive to, the remedial measures to be taken for the prevention of Typhoid Fever are—

- (1) The adoption of the water carriage system, where possible, for the disposal of excrement, etc.
- (2) The paving of back yards, with a view to prevent the contamination of the soil.
- (3) Public scavenging.
- (4) The thorough disinfection of the excreta, soiled linen, bedding, etc.
- (5) The more effectual control of the shell-fish trade.

PUERPERAL FEVER.

The number notified to have suffered from this disease was 66, and of these 34 proved fatal, as compared with 80 cases and 46 deaths in 1907. This is equivalent to a case-mortality of 51·5, and a death-rate of 0·05 per 1,000 population, or 1·45 per 1,000 births.

TABLE XII.

PUERPERAL FEVER.	1893.	1894.	1895.	1896.	1897.	1898.	1899.	1900.	1901.	1902.	1903.	1904.	1905.	1906.	1907.	1908.
Cases	92	76	68	81	63	100	87	79	123	122	88	96	68	78	80	66
Deaths	67	41	38	47	34	30	33	38	67	53	35	29	35	33	46	34
Case-mortality per cent.	72·8	59·9	55·8	58·0	46·5	33·3	17·9	48·1	54·4	43·4	39·7	30·20	51·47	42·32	57·5	51·5
Death-rate per 1,000 population	0·13	0·08	0·07	0·08	0·06	0·05	0·05	0·06	0·11	0·08	0·05	0·04	0·05	0·04	0·06	0·05
Deaths per 1,000 Births	3·34	2·25	1·87	2·31	1·67	1·45	1·66	1·80	3·04	2·27	1·50	1·21	1·45	1·39	1·90	1·45

Detailed remarks on this disease are given in my Annual Report for 1897, to which I would refer you.

DIARRHŒA.

Diarrhœa caused 649 deaths, which is equivalent to a death-rate of 0·99. In the previous year the number of deaths was 442, which is equivalent to a death-rate of 0·62.

The Diarrhœal rate for England and Wales was 0·50; for the 76 great towns, 0·65; for the 142 smaller towns, 0·52; and for England and Wales *less* the 218 towns, 0·33.

In the following Tables are given the Diarrhœal death-rates for the County and for England and Wales :—

TABLE XIII.

DIARRHŒA.	1893.	1894.	1895.	1896.	1897.	1898.	1899.	1900.	1901.	1902.	1903.	1904.	1905.	1906.	1907.	1908.
Urban Districts	1·02	0·45	0·95	1·08	0·81	0·95	1·49	0·37	1·30	0·49	0·57	1·12	1·00	1·19	0·72	1·28
Rural	0·69	0·08	0·34	0·42	0·26	0·37	0·61	0·42	0·43	0·22	0·23	0·28	0·23	0·43	0·35	0·31
Administrative County	1·31	0·35	0·78	0·87	0·66	0·77	1·25	0·38	1·04	0·42	0·48	0·80	0·80	0·99	0·62	0·99
England and Wales	0·95	0·34	0·87	0·54	0·85	0·91	0·93	0·71	0·91	0·38	0·50	0·69	0·59	0·87	0·29	0·50

The highest death-rate was attained in Aberavon (3.05); Rhondda (2.43); Pontypridd (1.47); and Pontardawe (1.24).

No deaths occurred from this disease at Briton Ferry, Cowbridge Borough, Oystermouth, Porthcawl, Gower, Llandilo-Talybont, and Neath Rural.

Diarrhœa is very variable as regards its prevalence, and is intimately associated with the temperature during the summer months, and the condition of articles of food and drink resulting therefrom. It is essentially an infantile affection, and apart from *climatic conditions*, *insanitary surroundings*, *overcrowding*, *injudicious feeding* (with indigestible, unwholesome, and adulterated food) and *maternal neglect*, are the most important predisposing causes of this disease, which is so fatal amongst infants. More attention should be paid to the nursing, rearing, and feeding of infants, and especially to the provision of pure and unadulterated milk supplies.

The prevention of Diarrhœa consists of practically the same measures as the prevention of Enteric Fever, viz. :—The provision of suitable food, the disinfection of stools, and the prevention of the pollution of the soil by the provision of properly paved and cleansed back areas and courts.

ERYSIPELAS.

400 cases of Erysipelas were notified, and to it are ascribed 13 deaths, as compared with 524 cases and 15 deaths in 1907. This is equivalent to a death-rate of 0.02.

Erysipelas is generally associated with insanitary surroundings, and any premises in which it appears should be carefully examined.

The notification of this disease is important in connection with nurses, midwives, and others coming in contact with parturient women and surgical cases.

PHTHISIS (PULMONARY TUBERCULOSIS).

The deaths attributed to Phthisis numbered 566—369 in Urban, and 197 in Rural Districts. This is equivalent to a death-rate of 0.87.

The highest rates are recorded from Cowbridge Borough (1.66); Cowbridge Rural (1.37); Gower (1.37); Pontardawe (1.26); Neath Borough (1.25); Llantrisant and Llantwit Fardre (1.23)

In the following Table are given the number of cases and death-rates for the years 1893-1908:—

TABLE XIV.

ADMINISTRATIVE COUNTY.	1893.	1894.	1895.	1896.	1897.	1898.	1899.	1900.	1901.	1902.	1903.	1904.	1905.	1906.	1907.	1908.
Deaths ..	700	626	610	603	712	688	531	813	604	588	511	629	613	574	608	566
Death-rate ..	1.42	1.24	1.17	1.15	1.30	1.23	0.92	1.38	1.00	0.95	0.80	0.96	0.91	0.83	0.85	0.87

A special report on "The Prevention and Restriction of Tuberculosis" was presented in 1903.

The facilities offered by the Cardiff and County Public Health Laboratory for the examination of specimens of sputum should be more fully utilised, as the successful treatment of the disease depends greatly upon its early diagnosis. 348 specimens of sputum from the whole County were examined at the Laboratory, as compared with 248 in 1907.

OTHER TUBERCULAR DISEASES.

Other Tubercular diseases caused 246 deaths, which is equivalent to a death-rate of 0.36.

TUBERCULOSIS.

The total number of deaths caused by the various forms of Tuberculosis was 812, or $\frac{1}{11}$ of the total number of deaths from all causes, and yet compared with our action against the ravages of Scarlet Fever, Diphtheria, and Typhoid Fever, which altogether accounted for 215 deaths, we are doing very little towards stamping it out.

Infection comes from two directions:—

- (1) From human beings suffering from the disease, especially from their discharges.
- (2) From animals suffering from the disease.

As regards human beings forming the source of infection, it is evident that, until patients so affected cease to scatter about infection by means of their discharges, such as sputum, they will continue to spread the disease to others who are susceptible.

As regards animals, it is most unfortunate that cattle, our chief supply of meat, and especially the cow, the source of our children's chief food, should be so liable to this infectious malady.

Much requires to be done, and can be done, in this direction—as indicated fully in the Special Report above referred to.

CANCER, MALIGNANT DISEASE.

355 deaths were attributed to Cancer and Malignant Disease. Only a few of the reports make any special reference to these diseases.

TABLE XV

DEATH-RATES CLASSIFIED ACCORDING TO DISEASE AND LOCALITY.

DISTRICTS.	Small Pox.	Measles.	Scarlet Fever.	Diphtheria and Croup.	Whooping Cough.	Enteric Fever.	Puerperal Fever.	Erysipelas.	Diarrhoea.	Phthisis.	Respiratory Diseases.	Heart Disease.	Injuries.	All other Causes.
URBAN.														
Aberavon	1.88	..	..	0.57	0.11	..	..	3.05	0.70	0.11	1.76	0.82	4.94
Aberdare	0.90	0.10	0.31	0.84	0.06	0.16	0.06	1.45	0.99	3.90	1.47	0.73	6.23
Barry	0.39	0.03	0.15	0.24	0.03	..	0.02	0.66	0.60	2.19	0.90	0.93	3.49
Bridgend	0.26	0.80	..	..	..	0.13	1.07	2.54	1.60	0.53	4.41
Briton Ferry	0.25	..	..	0.125	..	..	..	..	0.625	3.375	1.75	1.125	4.375
Caerphilly	0.11	0.11	0.18	0.51	0.11	..	0.03	0.48	0.51	1.66	0.88	0.66	3.18
Cowbridge	1.66	2.49	2.49	..	4.99
Gelligaer	0.33	0.16	0.13	0.87	0.06	0.03	0.06	0.10	0.70	3.08	0.94	1.00	5.70
Glyncorwg	0.22	..	0.11	0.11	0.22	..	..	0.88	0.66	3.77	1.55	1.11	1.66
Maesteg	0.15	..	0.07	0.35	0.11	0.07	..	0.87	0.79	3.06	0.79	0.79	4.37
Margam	0.16	0.48	..	..	..	0.16	0.56	3.24	1.13	0.32	3.73
Mountain Ash	0.90	0.04	0.19	0.33	0.02	0.04	..	0.36	0.61	2.90	0.97	0.61	5.57
Neath	0.59	..	0.29	0.17	0.17	..	0.05	1.01	1.25	3.15	1.66	0.29	5.95
Ogmore and Garw	0.12	0.04	0.20	0.12	0.08	0.08	..	0.54	0.75	1.66	0.83	0.75	0.70
Oystermouth	0.19	0.19	0.19	..	..	..	0.98	0.98	3.54	0.39	0.59
Penarth	0.18	0.12	0.18	..	..	..	0.06	0.7	1.37	0.87	0.43	4.00
Pontypridd	0.02	0.02	0.23	0.31	..	..	0.02	1.47	1.03	2.4	0.77	0.31	9.10
Porthcawl	0.87	1.16	0.87	0.87	0.58	2.91
Rhondda	0.77	0.05	0.24	0.41	0.16	0.08	..	2.43	0.78	4.21	1.09	1.28	5.77
RURAL.														
Cowbridge	0.37	..	0.5	0.125	..	..	..	0.5	1.37	1.12	2.75	0.5	4.5
Gower	1.37	1.51	..	..	..
Llandaff and Dinas Powis	0.18	0.07	0.18	0.70	..	0.03	..	0.44	0.85	1.51	1.03	0.59	3.95
Llantrisant and Llantwit Fardre	0.99	..	0.16	0.16	0.08	..	..	0.16	1.23	1.98	1.23	0.57	5.86
Neath	0.42	..	0.21	0.53	0.10	0.07	..	..	1.10	2.78	2.06	0.82	7.88
Penybont	0.32	0.05	0.27	0.21	0.10	0.10	0.05	0.43	0.80	2.96	0.91	0.91	2.10
Pontardawe	0.19	..	0.14	0.04	..	0.14	..	1.24	1.26	2.21	1.76	0.71	1.71
Swansea Rural :—														
Llangyfelach Division	0.28	..	0.04	0.20	0.04	..	0.04	0.12	0.91	2.29	0.56	0.32	2.40
Llandilo-Talybont	0.48	..	0.24	0.04	0.04	..	..	..	1.13	2.60	1.26	0.81	5.00

NOTIFICATION OF INFECTIOUS DISEASES.

The number of notifications received included *Small Pox* 1; *Scarlet Fever* 2,417; *Diphtheria and Membranous Croup* 1,013; *Enteric Fever* 412; *Continued Fever* 6; *Relapsing Fever* nil; *Puerperal Fever* 66; and *Erysipelas* 400; making a total of 4,315. Of these, 262 or 6.07 per cent. proved fatal.

The number of notifications received furnishes a much better criterion for judging the prevalence of the various diseases than do the death returns; the two, however, enable one to ascertain the prevalence and type of the disease.

Through the courtesy of the Medical Officers of Health, I have received weekly, from every District, a return showing the number of cases of Infectious Diseases notified, and have published the same regularly by the middle of the following week, a copy being sent to each of the above, and also to the Medical Officers of Health of the local County Boroughs, the Local Government Board, and others.

In the following Tables are given the number of cases of Infectious Diseases notified annually since 1893, together with the number of cases notified during each week of the year under review:—

TABLE XVI.

In the following Table is given the number of cases of Infectious Disease notified during the period 1893-1908:—

DISEASES.	1893.	1894.	1895.	1896.	1897.	1898.	1899.	1900.	1901.	1902.	1903.	1904.	1905.	1906.	1907.	1908.
Small Pox ..	48	37	5	69	7	4	5	4	4	172	51	19	21	2	4	1
Cholera ..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Scarlet Fever	2,378	1,726	2,760	3,781	3,029	1,280	2,046	4,348	6,826	4,360	4,484	4,445	3,039	2,081	1,837	2,417
Diphtheria ..	242	159	273	452	817	2,060	5,074	3,440	3,528	2,403	1,423	1,259	1,379	1,017	811	1,013
Membranous Croup	60	56	112	148	108	133	49	143	132	105	125	71	75	65	54	30
Erysipelas ..	348	377	439	437	530	478	503	457	814	720	555	494	576	508	455	400
Typhus ..	..	5	..	..	..	..	1	2	..	..	2	..	..	..	..	..
Enteric ..	825	703	748	665	652	840	1,487	1,150	913	682	952	809	615	526	453	412
Continued Fever	17	21	20	28	3	30	1	16	19	15	19	6	9	4	2	6
Relapsing Fever	..	..	..	..	..	..	..	..	..	..	4	..	1	1	1	..
Puerperal Fever	92	76	68	81	63	100	88	79	123	117	79	96	68	68	68	66

The above figures are useful for the purposes of comparison. There has been a great increase in the number of cases of Scarlet Fever notified since 1898, whereas there has been a gradual diminution in the incidence of Diphtheria.

TABLE XVII.

In the following Table is given the number of cases notified during each week of the year 1908:—

DISEASES.	JANUARY.				FEBRUARY					MARCH.				APRIL.				MAY.					JUNE.			
	4.	11.	18.	25.	1.	8.	15.	22.	29.	7.	14.	21.	28.	4.	11.	18.	25.	2.	9.	16.	23.	30.	6.	13.	20.	27.
Small Pox ...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Cholera ...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Scarlet Fever ...	42	22	30	35	38	32	38	38	46	29	48	34	42	24	27	24	22	31	23	39	27	51	38	41	25	43
Diphtheria ...	15	17	28	19	23	16	31	24	26	14	20	10	18	17	15	11	10	16	8	16	13	16	18	12	17	16
Membranous Croup	1	2	...	...	...	1	...	1	...	2	2	3	1	3	2	...	1	...	...	...	...	...	...	...	...	...
Erysipelas ...	5	1	15	12	7	8	4	8	7	7	7	7	13	9	9	10	13	7	3	3	10	3	4	1	6	6
Typhus ...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Enteric ...	9	6	17	8	13	6	5	9	4	8	8	10	4	2	9	7	7	3	5	2	3	10	7	10	11	3
Continued Fever ...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	1
Relapsing Fever ...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Intermittent Fever ...	4	2	3	1	4	3	4	2	...	...	1	1	...	1	2	4	1	1	1	...	3	3	1	...	...	...

DISEASES.	JULY.				AUGUST.					SEPTEMBER.				OCTOBER.					NOVEMBER.				DECEMBER.			
	4.	11.	18.	25.	1.	8.	15.	22.	29.	5.	12.	19.	26.	3.	10.	17.	24.	31.	7.	14.	21.	28.	5.	12.	19.	26.
Small Pox ...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	1	...	...	...	...	...	...	...	...	...	...
Cholera ...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Scarlet Fever ...	29	35	52	47	46	59	52	53	43	25	56	53	60	67	62	59	44	82	70	72	89	89	68	75	79	51
Diphtheria ...	17	24	26	17	16	17	14	9	15	10	12	12	20	21	28	6	27	17	17	23	26	41	20	28	25	16
Membranous Croup	...	...	1	...	...	2	1	2	...	...	...	2	...	1	...	...	...	...	...	...	1	...	...	...	...	1
Erysipelas ...	6	7	7	5	13	1	7	7	8	7	7	5	6	8	9	8	10	8	1	7	4	12	8	9	8	8
Typhus ...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Enteric ...	3	9	9	7	5	6	7	10	6	12	9	7	20	18	16	8	6	4	11	4	5	5	9	12	5	9
Continued Fever ...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	1	...	...	...	...	...	1	...	...	...
Relapsing Fever ...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Intermittent Fever ...	...	2	1	...	...	1	3	...	3	1	2	1	1	1	1	1	1	...	...	...	1	1	1	...	...	2

ADMINISTRATION.

PROVISION OF ISOLATION HOSPITALS BY LOCAL AUTHORITIES.

During 1902 the Local Government Board issued a circular to the various County Councils throughout the Country, drawing attention to the Isolation Hospitals Act, 1901 (1 Edw. VII., cap. 8), and pointing out the changes in the existing law that it introduced. These changes may be enumerated under :—

- (1) Transfer by Local Authorities of Hospitals for use as Isolation Hospitals.
- (2) Contribution by County Councils to Hospitals provided by Local Authorities.
- (3) Power of Hospital Committees under the Isolation Hospitals Act, 1893, to contract for Hospital accommodation.
- (4) Rate of interest on money repayable by County Council.
- (5) Appeals to Local Government Board as to formation of Hospital Districts.
- (6) Local Authorities in Rural Districts.

ISOLATION HOSPITALS.

I.—INFECTIOUS DISEASES HOSPITALS.

When the County Council commenced (in 1895) to enforce the provisions of the "Isolation Hospitals Act, 1893," the Hospitals then existing were :—

- (1) The Aberdare Hospital (temporary structure)—28 beds—still in use.
- (2) The Barry Small Pox Hospital (temporary structure)—now dismantled.
- (3) The Bridgend Small Pox Hospital (temporary structure)—8 beds—now replaced by a joint and more modern building.
- (4) Maesteg—a dwelling house—abandoned some years ago, and now replaced by a new building.
- (5) The Merthyr Hospitals (1) one in Brecon Road, a permanent building, and (2) a temporary building at Pant, Dowlais. Both now abandoned and replaced by a new structure.
- (6) The Mountain Ash Hospital, built in consequence of an epidemic of Enteric Fever in 1887.
- (7) Neath Borough Hospital, old dwelling houses altered for the purpose, but seldom used, situated in the centre of the town—condemned by the Medical Officer of Health.
- (8) Rhondda Hospital, a small permanent building with accommodation for 8 beds.
- (9) Gelligaer and Rhigos Hospital at Penybank, four old cottages altered for the purpose.
- (10) Neath Rural Hospital, a temporary building with accommodation for 12 beds.

Since the Isolation Hospitals Act has been enforced, seventeen Hospitals have been built, and are in use ; about four others are in contemplation.

A very considerable progress has been made in the matter of Isolation Hospitals, and below is given a synopsis showing the *present* position of the question of Isolation Hospitals in the County.

(a) *The following Hospitals have all been completed and are in use.*

- (1) The Barry Hospital—18 beds.
- (2) The Margam Hospital—24 beds.
- (3) The Briton Ferry Hospital (temporary)—12 beds.
- (4) The Maesteg Hospital—16 beds.
- (5) The Pontardawe Hospital—12 beds.
- (6) The Rhondda Hospital—32 beds ; and the old building—8 beds. An additional pavilion and convalescent block have been added, together with alterations and extensions of the administrative block—26 beds—66 in all.
- (7) The Glyncorwg Hospital (temporary)—8 beds.
- (8) The Llandaff and Dinas Powis (temporary)—12 beds.
- (9) The Swansea Rural (temporary)—24 beds. Administrative Block—new and of a permanent character.
- (10) The Penarth Hospital—18 beds.
- (11) The Pontypridd Hospital—20 beds.
- (12) The Llantrisant and Llantwit Fardre Hospital—18 beds.
- (13) The Bridgend Joint Hospital—18 beds.
- (14) The Ogmore and Garw Hospital—18 beds.
- (15) The Merthyr Borough Hospital—32 beds.
- (16) The Llandaff and Dinas Powis Hospital—24 beds.
- (17) The Caerphilly Hospital—20 beds.

All the above Hospitals, except that for Glyncorwg, are provided with an efficient Disinfecting Machine.

(b) *A site had been fixed upon some years ago for the following Hospital, and the amended plans were submitted to the Local Government Board, who refused consent to the site approved by the County Council and acquired by the District Council. Another effort is being made to obtain the Local Government Board's consent to the necessary loan.*

The Gelligaer Hospital—18 beds.

(c) *Oystermouth.*—This District was some years ago constituted a Hospital District.

(d) *Gower.*—This Rural District having declined to join Oystermouth, or provide a Hospital for their own District, a compulsory Order was made against them by the County Council. The District Council appealed against the Order. This appeal was heard by one of the Local Government Board's Medical Inspectors on the 17th March, 1904. The Order was supported by the Board

with the recommendation that Gower and Oystermouth be constituted a Joint Hospital District. Eventually the two District Councils concerned came to an agreement to contribute in equal shares towards the proposed Hospital, and the Oystermouth Hospital Committee having applied to the County Council to vary their Order so as to bring Gower within the area, which arrangement was acceded to by the County Council, was thus created a Joint Hospital District. The Joint Hospital Committee have acquired a suitable site, and have appointed an Architect to prepare plans, etc.

(e) *The proposed Joint Hospital for Briton Ferry, Neath Rural, Neath Borough, and Aberavon Borough.*

The Local Government Board has decided not to include the Borough of Aberavon in the proposed Joint District, and the Neath Corporation are unwilling to enter into the proposed combination, and cannot be forced to do so because the population of the Borough is above 10,000.

A Joint Hospital for Neath Rural and Briton Ferry Urban Districts was then recommended by the Sanitary Committee, but the two District Councils have failed to agree, with the result that :—

- (a) The Neath Rural District Council have expressed themselves ready and willing to provide a Hospital for their own District, and are negotiating for several sites.
- (b) This Authority already possesses a temporary building, the extension and alteration of which are under consideration.

(f) *Aberdare*.—A site of $4\frac{1}{2}$ acres has been acquired, and it has been decided to provide a Hospital with some 50 beds. The plans are being put out for competition.

II. SMALL POX HOSPITALS.

(a) The following Small Pox Hospitals exist at present in the County, viz. :—

Bridgend (joint).—A building with accommodation for twelve beds, and there is a steam disinfecting apparatus in connection with it.

Maesteg.—A temporary building with accommodation for 12 beds. A disinfecting apparatus is about to be provided.

Neath Borough.—Old dwellings altered for the purpose, but seldom used, situated in the centre of the town, with accommodation for eight beds. No disinfecting apparatus. Condemned by the Medical Officer of Health.

Penarth.—A temporary building with accommodation for eight beds. No disinfecting apparatus.

Pontypridd.—A temporary building with accommodation for twelve beds, which has already been found inadequate and recently extended. A disinfecting apparatus has been provided.

Gelligaer and Rhigos.—Four old cottages, altered for the purpose, with accommodation for eight beds.

Llantrisant and Llantwit Fardre.—A temporary building with accommodation for eight beds. No disinfecting apparatus provided.

Neath (Rural).—A temporary building with accommodation for 12 beds. A disinfecting apparatus is provided.

Pontardawe.—A temporary building with accommodation for 12 beds.

Caerphilly.—A temporary building with accommodation for 16 beds. No disinfecting apparatus.

Barry.—A permanent building with accommodation for 24 beds, and equipped with the latest approved appliances. This Hospital is available for the reception of patients from the Llandaff and Dinas Powis Rural District from within a radius of 10 miles from the Barry District.

Rhondda.—A temporary building on permanent foundation, with accommodation for 16 beds.

Swansea Rural.—A temporary building on permanent foundation, with accommodation for 12 beds.

The Districts of Aberdare and Mountain Ash are the only ones still unprovided with Small Pox Hospitals, but I am glad to say that the matter is under consideration at both places.

DISINFECTION.

I have dealt somewhat fully with the importance of the efficient disinfection of houses, articles of bedding, clothing, persons, &c., in previous Annual Reports, to which I would refer you.

The best disinfectant for all purposes, where practicable, appears to be heat in combination with moisture. Where sufficient heat cannot be applied, certain chemicals are used.

Now that notification of infectious disease is compulsory throughout the County, it is highly important that our provision for isolation and disinfection should be as efficient as possible, for they are complementary to each other.

Infected persons and things require to be disinfected, and disinfection should include :—

- (1) The disinfection of persons.
- (2) The disinfection of bedding, clothing, &c.
- (3) The disinfection of rooms, and
- (4) The disinfection of discharges.

No Isolation Hospitals are complete unless discharging rooms are provided in connection with them, where patients can be finally disinfected before leaving, and where midwives, nurses, and others who have been in attendance or in contact with fever cases can be cleansed and disinfected, while their infected clothing is being passed through a disinfector, and their appliances sterilised.

The County Council does not consider any Infectious Diseases Hospital complete unless there is provided an approved disinfecting apparatus, and half the cost of the Establishment charges is not paid unless this is the case. A few of the temporary Small Pox Hospitals have not yet been provided with disinfecting apparatus, but this is contemplated.

In 1893 there were only *two* disinfecting machines in the Administrative County, and these were Fraser's Sulphur Machines—one in Rhondda, and one in Neath Borough.

PRESERVATIVES AND COLOURING MATTERS IN FOOD.

The Report of the Departmental Committee appointed (in July, 1899) to inquire into the use of preservatives and colouring matters in the preservation and colouring of food, together with Minutes of Evidence, Appendices, and Index, was issued some years ago, when the following recommendations were made :—

- (a) That the use of formaldehyde or formalin, or preparations thereof, in foods, or drinks, be absolutely prohibited, and that salicylic acid be not used in a greater proportion than one grain per pint in liquid food, and one grain per pound in solid food. Its presence in all cases to be declared.
- (b) That the use of *any preservative* or colouring matter whatever in milk offered for sale in the United Kingdom be constituted *an offence* under the Sale of Food and Drugs Acts.
- (c) That the only preservatives which it shall be lawful to use in cream be boric acid or mixtures of boric acid and borax, and in amount not exceeding 0.25 per cent., expressed as boric acid. The amount of such preservative to be notified by a label upon the vessel.
- (d) That the only preservative permitted to be used in butter and margarine be boric acid or mixtures of boric acid and borax, to be used in proportions not exceeding 0.5 per cent., expressed as boric acid.
- (e) That in the case of all dietetic preparations intended for the use of invalids or infants, chemical preservatives of all kinds be prohibited.
- (f) That the use of copper salts in the so-called greening of preserved foods be prohibited.
- (g) That means be provided, either by the establishment of a separate Court of Reference or by the imposition of more direct obligation on the Local Government Board, to exercise supervision over the use of preservatives and colouring matters in food, and to prepare schedules of such as may be considered inimical to the public health.

Although it is true that the above recommendations have not become law, yet it is encouraging to find that they are practically the same as those adopted and enforced as far as possible by the Glamorgan County Council as far back as 1896.

It is greatly to be hoped that legislative effect will soon be given to these recommendations, so that the work of supervision under the Sale of Food and Drugs Acts may be made more effectual, and prosecutions less uncertain in their results.

The fact should not be lost sight of that the danger of preservatives lies not so much in the actual poisonous effects of the drugs used as in the fact that where preservatives are used it is probable that cleanliness is neglected.

With regard to recommendation (b) "that the use of any preservative . . . whatever in milk offered for sale in the United Kingdom be constituted an offence under the Sale of Food and Drugs Acts," it is of the utmost importance that great weight should be attached to it.

Preservatives in Milk.—In July, 1906, the Local Government Board issued a circular calling attention to the desirability of taking action under the Food and Drugs Acts, when samples of milk are found to contain preservatives. They further suggest that the Local Authority should notify milk traders of their intention to take proceedings when boracic acid, borax, formalin, or any other drug has been found in milk.

It may here be stated that action as above recommended has been taken for the last eleven years by the County Council, and that milk traders have, on several occasions, been notified of such procedure.

With regard to recommendation (g) "that means be provided" to exercise supervision over the use of preservatives and colouring matters in food, and to prepare schedules of such as may be considered inimical to the public health, it is satisfactory to note that the matter has been taken up lately by the Local Government Board, and that a new department has been established for this purpose, under the direction and superintendence of Dr. G. S. Buchanan, one of the Medical Inspectors of the Board.

Inspector of Foods, &c., Department.

The Department of the Inspector of Foods, &c., is a sub-department of the Medical Department. Its constitution was the outcome of recommendations which from time to time have been made by various Committees, including the Food Preservatives Committee, and by the Royal Commission on Arsenical Poisoning.

The duties of the Inspector are stated generally in the following extract from the reply given by the President (Mr. Gerald Balfour) to a question asked by Sir Cuthbert Quilter in the House of Commons on 8th August, 1905 :—

" to advise the Local Government Board as to the administration of the Sale of Food and Drugs Acts and other similar Acts ; to deal with matters relating to the purity and adulteration of food which are brought to the Board's notice by public analysts, medical officers of health, and others ; to obtain information upon special questions relating to the purity and adulteration of food and the use of deleterious substances therein ; and to make suitable enquiries and investigations for this purpose"

The following circular letter, having reference to Preservatives in Milk, was issued to Clerks of Local Authorities by the Local Government Board some time ago, and is of very considerable importance, especially in a County like Glamorgan, where the administration of the Food and Drugs Acts is in the hands of the County Police Force.

Preservatives in Milk.

" SIR,

I am directed by the Local Government Board to request the attention of the Council to the subject of the addition of preservatives to milk.

A serious objection to the use of preservatives in milk has been pointed out in the report of the Departmental Committee on Preservatives and Colouring Matters in Food, who state that preservatives in milk ' may be relied on to protect those engaged ' in the milk traffic ' against the immediate results of neglect of scrupulous cleanliness. Under the influence of these preservatives, milk may be exposed

without sensible injury to conditions which otherwise would render it unsaleable. It may remain sweet to taste and smell, and yet have incorporated disease germs of various kinds, whereof the activity may be suspended for a time by the action of the preservative, but may be resumed before the milk is digested.'

This Committee, after hearing evidence from milk traders, concluded that the addition of a preservative to milk is not necessary for the purposes of the milk trade, even in hot weather or where the supply of so large a place as London is concerned, and the Committee recommended that no preservatives should be added to milk.

In making this recommendation the Committee had special regard to evidence received as to two classes of preservative substances which, under various names, are frequently used as preservatives in milk, viz. (1) formalin (a 40 per cent. solution of formic aldehyde) and other preparations of formic aldehyde; and (2) boron preservatives (boric acid, borax, or mixtures of boric acid and borax). The Committee considered that the addition to milk of formalin or preparations of formalin, even when the amount which could be detected was minute, was objectionable, on account of the alterations effected by formalin in the character of certain of the constituents of milk and of its ability to interfere directly with digestive processes.

Although in the view of the Committee boron preservatives might reasonably be employed in the case of certain foods, within defined limits and subject to a declaration as to their presence and amount, the Committee recommended their exclusion from milk altogether; partly for the reasons above indicated, and partly also in consideration of the immense importance of pure milk for the nutrition of infants, invalids, and convalescents, and of the comparatively large quantity of milk which may be taken, particularly by children, in comparison with the other foods in question. Moreover, the Committee had evidence 'pointing to an injurious effect of boracised milk upon the health of very young children.'

Since the report of the Committee was made the Board have from time to time had before them further evidence on the subject, and this supports the conclusions of the Committee not only as to the objections to the use of preservatives on the ground of public health, but also as to the ability of milk traders to conduct their business without use of preservatives. Thus in certain boroughs in London and elsewhere in which milk samples are systematically tested for preservatives, the presence of preservatives in milk, at any time of the year, has been found to be exceptional; and there is evidence to show that a very large number of milk vendors conduct their business without the use of these substances, even where the milk comes long distances by rail.

In some districts action under the Sale of Food and Drugs Acts has been frequently and successfully taken in order to bring about the disuse of preservatives in milk. Proceedings instituted against vendors of milk containing preservatives have usually been taken under Section 6 of the Sale of Food and Drugs Act, 1875. Conviction has followed, it being held that when the purchaser who asks for milk is supplied with milk plus a preservative he does not receive an article of the nature, substance, and quality demanded, and is prejudiced thereby.

The Board are of opinion that action under the Sale of Food and Drugs Acts in regard to preservatives in milk is desirable, and that this subject deserves attention from all authorities in England and Wales charged with the execution of these Acts.

In this connection the following suggestions are made for adoption by the Council where a similar procedure is not already followed :—

1. *Information from public analysts.*

The Board suggest that public analysts should be requested

- (a) to record in their quarterly reports how many milk samples have been examined during the quarter with a view to ascertaining the presence of substances commonly in use as preservatives, and with what result ; and to draw the attention of the Council to instances where the use of preservatives in milk other than boron preservatives and formalin have come under notice ;
- (b) to report, on completion of analysis, the facts as to samples of milk which have been found to contain any added preservative.

2. *Administrative action where preservatives in milk are reported.*

The Board would suggest that the Council should notify to milk traders, by circular or otherwise, that action will be taken under the Sale of Food and Drugs Acts in instances where preservatives are reported in milk.

Subject to this being done, and to exceptional cases of the kind referred to under the heading numbered 3 (below), the Board consider that when the presence of any added preservative is reported in a sample of milk taken in accordance with the provisions of the Sale of Food and Drugs Acts, the case should in ordinary circumstances be regarded as one for the institution of proceedings under those Acts.

3. *Declaration and Notices.*

The Board think it desirable to draw attention to cases in which the vendor of the milk, with the object of escaping liability under Section 6 of the Sale of Food and Drugs Act, 1875, declares to the purchaser by means of a notice, label, or otherwise, that he does not sell " milk " as such, or that its quality in regard to preservatives or other constituents is not guaranteed, or that it contains some added preservative.

The Board would suggest the desirability of frequent sampling in cases where " milk " is sold subject to declarations of the kind, with a view to ascertaining the condition of such milk in regard to preservatives.

The nature of the declaration made should in all cases be carefully recorded by the officer taking the sample, and should also be reported to the analyst when the sample is transmitted for analysis.

Where preservatives are reported in milk thus sold, the question will arise whether, in view of the nature and quantity of the preservatives added, it can be considered that the article has been rendered injurious to health, or that the purchaser has been prejudiced, to an extent which would justify the institution of proceedings under Section 3 or Section 6 of the Sale of Food and Drugs Act, 1875, notwithstanding the declaration made at the time of purchase.

This question is not without difficulty in view of the general objection to the employment of any preservatives in milk referred to above.

As regards formalin and boron preservatives, however, the Board are advised that the presence in milk of formalin to an amount which is ascertained by examination *within three days of collecting the sample* to exceed 1 part in 40,000 (1 part in 100,000 of formic aldehyde) raises a strong presumption that the article has been rendered injurious to health, and that the purchaser has been prejudiced, in the above sense; and also that similar presumption is raised where boron preservatives are present in milk to an amount exceeding 40 grains of boric acid per gallon.

It appears desirable that the addition of preservatives to skim milk, separated milk, and condensed milk, should be watched and controlled on similar lines"

REGULATIONS FOR THE SALE OF MILK.

The Board of Agriculture, in exercise of the powers conferred upon them by Section 4 of the Sale of Food and Drugs Act, 1899, have made the following Regulations, under date August 5th, 1901:—

Milk.

- (1) Where a sample of milk (not being sold as skimmed, or separated, or condensed, milk) contains less than 3 per cent. of milk-fat, it shall be presumed for the purposes of the Sale of Food and Drugs Acts, 1875 to 1899, until the contrary is proved, that the milk is not genuine, by reason of the abstraction therefrom of milk-fat, or the addition thereto of water.
- (2) Where a sample of milk (not being milk sold as skimmed, or separated, or condensed, milk) contains less than 8·5 per cent. of milk-solids other than milk-fat, it shall be presumed for the purposes of the Sale of Food and Drugs Acts, 1875 to 1899, until the contrary is proved, that the milk is not genuine, by reason of the abstraction therefrom of milk-solids other than milk-fat, or the addition thereto of water.

Skimmed or Separated Milk.

- (3) Where a sample of skimmed or separated milk (not being condensed milk) contains less than 9 per cent. of milk solids, it shall be presumed for the purposes of the Sale of Food and Drugs Acts, 1875 to 1899, until the contrary is proved, that the milk is not genuine, by reason of the abstraction therefrom of milk-solids other than milk-fat, or the addition thereto of water.

Extent.

- (4) These Regulations shall extend to Great Britain.

In the Regulations, the limits below which a presumption is raised that the milk is not genuine were necessarily fixed at figures lower than those which are usually afforded by genuine milk, in which the proportion of milk-fat and non-fatty solids very frequently exceeds the percentages specified above. It is therefore important that Local Authorities should keep steadily in view the possibility of the artificial reduction of the quality of natural milk to the official limits by the abstraction of cream, or the addition of separated milk, or of water, and arrangements should be made for the taking of samples and the submission

of the same for analysis whenever the existence of malpractices of the kind is suspected. In this connection, it may be observed that the evidence given before the Milk Regulations Committee tended to show that the practice of fraudulently mixing separated milk with new milk has become increasingly prevalent, particularly in some of the larger towns.

Although the quality of genuine milk offered for sale will usually be well above the official limits of milk-fat and non-fatty solids, there may occasionally, and especially in certain seasons of the year, be cases in which a sample of genuine milk may fall below these limits. To meet cases of this kind it is suggested that in the absence of any special circumstances indicating that the case is a fraudulent one, the Local Authority might, in the first instance, call the vendor's attention to the analyst's report, and ask him whether he desires to offer any explanation, and if the explanation is one they are able to accept, they might, in the exercise of their discretion, refrain from the institution of proceedings, or withdraw any summons which, in order to prevent the failure of proceedings by reason of the time limit imposed by the Act, it may have been necessary to take out. But it may be desirable that further samples of milk should be taken in such cases, in order that a satisfactory conclusion as to the character of the milk supplied may be arrived at.

Cream.

The Milk Regulations Committee reported that the evidence submitted to them went to show that it was a common practice to add gelatin to cream for the purpose of giving it a fictitious appearance of richness or thickness. Local Authorities are urged to take steps to ascertain whether this form of adulteration is practised within their Districts, and if a public analyst reports the presence of gelatin or other similar substance in a sample of cream, the Local Authority concerned should consider whether the case is one in which proceedings might not with advantage be instituted under Section 6 of the Sale of Food and Drugs Act, 1875.

COLLECTION AND RETENTION OF SAMPLES.

It is desirable that, so far as may be found practicable, there should be uniformity of procedure in collecting and retaining samples of milk procured under the provisions of the Sale of Food and Drugs Acts, and the following recommendations have been drawn up for the guidance of the local Officials employed in this work :—

- (1) The quantity to be purchased should not be less than one pint, except that it may be expedient to purchase only half-a-pint, in cases where there is reason to believe that the object of the purchase would be defeated if a greater quantity were demanded.
- (2) That the division of the sample, under Section 14 of the Act of 1875, as amended by Section 13 of the Act of 1899, should be made as equally as possible, so that the portion reserved by the purchaser may not be less than one-third of the whole.
- (3) The bottle used for each divided part should have a narrow neck, and be of such capacity that the milk may nearly or quite fill it. The shape of bottle known as " Winchester " is strongly recommended, but, in any case, the bottles should have rounded sides in order to give security to the sample during transit by post or otherwise.

- (4) Corks only should be used, and these should always be new and sound, and fitting so tightly as to secure the contents without any aid from the wax which is subsequently used for sealing the sample. It is most desirable that the sealing should be carried out in such a way as to prevent any attempt to remove the cork. It is therefore recommended that the cork should be slit down to one-fourth of its length, and the string drawn through and securely fastened round the neck, the ends being afterwards carried to the top of the cork and sealed thereon.
- (5) Special attention should be given that the reserved portion of milk be kept in as equable and cool a temperature as possible, pending its production in Court in instances where proceedings are taken, and, if directed by the Justices to be referred to the Government Laboratory, it should be carefully packed so as to secure its safe transmission.

These regulations are very important, as they fix definitely the standards of milk-fat and milk-solids in milk and skimmed and separated milk at which such articles may be regarded as genuine, and such standards have long been wanting as a base for successful prosecution in the adulteration of milk.

It would be very useful if the Board of Agriculture considered it wise to issue similar regulations for determining what addition of extraneous matter or proportion of water shall, for the purpose of the Food and Drugs Act, raise the presumption that butter is not genuine.

TESTS FOR FARMERS' MILK.

The Board of Agriculture and Fisheries have lately issued an important leaflet, a copy of which is given below. The matter has been considered by the County Council, and it is encouraging to farmers to find that arrangements have been made by the Agricultural Committee whereby these tests can be carried out at the University College, Cardiff.

The number examined during the year 1st April, 1908, to 31st March, 1909, was 51.

" It is a well-known fact that in the vast majority of cases the milk given by the cows of this country exceeds in butter-fat and other milk-solids the percentage specified in the ' Sale of Milk Regulations, 1901,' made by the Board of Agriculture. It happens, however, occasionally, that for one reason or another, a cow may give milk which does not contain those percentages (3 per cent. of butter-fat and 8.5 per cent. of other milk-solids) ; and in such cases the dairyman, when prosecuted, is required to prove that the milk is genuine. In order to avoid the trouble and annoyance of a prosecution, farmers, dairymen, and all other cowkeepers are strongly recommended to have samples of milk from their cows tested from time to time. By this means they will be able to watch the seasonal and other variations in the fat contents of the milk, and by modifications in the feeding, housing, or time of milking of their cows, and, if necessary, by disposing of animals that give milk of low quality, to keep the quality of their milk at a satisfactory level.

The Board have ascertained that, with the object of assisting farmers in the direction indicated, most of the Agricultural Colleges and Agricultural Departments of the Universities have made arrangements for determining the percentage of butter-fat for a fee of sixpence per sample.

It must, however, be understood that—

- (a) The report sent will refer only to the percentage of butter-fat.
- (b) Each report refers only to the sample tested, and implies no guarantee whatever as to the bulk.

- (c) Each report is supplied solely for the information of the milk-producer, and must not be used as evidence in case of any dispute between seller and buyer, or where the quality has been questioned by any public authority.

The directions issued by the Institutions must be carefully observed. They require, as a rule, that :—

- (1) The fee of sixpence should be sent with the sample. In the case of Essex, however, the fee charged by the County is one shilling ; while no charge is made by the West of Scotland Agricultural College to farmers residing in the counties contributing to the support of that body.
- (2) A stamped and addressed envelope should be sent for the report.
- (3) Samples should not be sent so as to arrive between Friday night and Monday morning.
- (4) If it is proposed to send samples periodically, as may be in many cases advisable, the Institution should be so informed.
- (5) The sample bottle should be carefully sealed and packed in accordance with the requirements of the General Post Office, and the postage prepaid."

SALE OF FOOD AND DRUGS ACTS.

The taking of Samples.

I recently issued the following circular letter as a guide to the Inspectors under the above Acts as to samples to be taken :—

Method of purchasing—Great care is necessary in purchasing the samples in order that the case may not subsequently break down for want of compliance with the proper procedure.

What to buy.—It will be a useful rule to apply, that those articles which are most adulterated, and in most frequent use, should receive the first attention of the Inspector.

Foods.

Milk.—Milk is the article of food which is most frequently adulterated or "baptised," but which, above all other articles, should be kept pure and good. It is therefore essential that at least one-half of the total number of samples taken should be of milk, and it is always well to ask for "New Milk." Much good can be done by keeping the milk supply under supervision. It may be said that milk is largely affected by season, so that in very dry parts of the year the yield is small and not so rich. But while a little leniency may be allowed in the interpretation of results at this season, it is not desirable to cease purchasing samples ; for the temptation to water the milk is always greater just when the milk is least able to stand dilution.

Butter and Margarine.—It is probable that a large amount of margarine is sold as butter or mixed with it. The Inspector should vigorously enforce the Margarine Act, besides purchasing plenty of samples of butter. It is well, also, to ask for margarine with the object of seeing whether it is served in a printed wrapper, according to law. If it is so served, there is no need to spend money on its analysis, but if the wrapper is omitted, the Inspector should proceed in the ordinary way by dividing, etc., and should send a portion for analysis, as it will be necessary to prove that the article actually *was* margarine as asked for. Should the Inspector suspect any unlabelled substance to be margarine, he should ask for a pound of "that," pointing to the article required.

Coffee.—This is an article where the adulteration (addition of chickory) often amounts to a gross fraud. Vendors are in the habit of protecting themselves behind labels announcing admixture, and when the article is supplied in such label, it is seldom advisable to waste money on its analysis.

Lard.—Beef stearine is often employed to stiffen lard. Water and cotton-seed oil are often used as adulterants.

Spirits.—In taking samples of spirits the ground is very much cleared by the fact that the legislature prescribes a distinct minimum of strength in these cases; but in this branch the Inspector does not hold so much the high position of the protector of the public health as in the case of milk, drugs, etc.

Publicans generally protect themselves by “exhibiting” in some out-of-the-way corner a notice that all spirits are diluted. It is futile to purchase samples for analysis in the face of such a notice. Again, some vendors who sell diluted spirits in their drinking rooms could supply an Inspector asking for half-a-pint with an article of superior strength. To avoid this, an Inspector may ask for, say, 2d. worth of whiskey, and pay for same: then having noticed which keg it is supplied from, he is entitled to ask for his half-pint out of that particular receptacle. It should be borne in mind that the strength of spirits prescribed by the Act is not a standard in the ordinary sense, but a minimum, and there can be no excuse for selling below this very low figure. At the same time, Inspectors are probably serving the interests of the people in looking after substances of more value as a food or a drug.

Drugs.

This is a wide branch of the work, bristling with difficulties, but much good can be done by sampling those drugs of definite composition, which are much used by the public and much liable to adulteration. It is of no use purchasing such a drug as “Life and Health Elixir,” “Castor Oil Pills,” and many other such remedies which may consist of practically anything. With regard to properly regulated drugs, the case is different, for it is held that where a person purchases a drug by the name which it appears in the British Pharmacopœia it ought to be of the composition there prescribed.

The following circular letter was recently issued by Dr. G. S. Buchanan, Inspector of Foods, &c., of the Local Government Board, and a copy of it is included below, because of the great importance of the subject to which it refers:—

“DEAR SIR,

I understand that in many administrative districts under the Sale of Food and Drugs Acts, samples of canned and preserved meats are being sent to the public analyst, in view of the recent events in the United States. I am anxious to utilise the opportunity to collect information as to the use of preservatives and colouring matters in the foods in question. The presence of preservatives and colours in such foods as sausages, potted shrimps, &c., has of course often been ascertained, but the condition of certain other meat products, whether of home or foreign manufacture, in regard to preservatives is less clearly established; and there seems to be special need for information as to presence or absence of preservatives in ‘canned,’ ‘tinned,’ or other foods which are hermetically sealed, in view of the indication that may be afforded that the meat was not fresh at the time of ‘canning.’

Accordingly I am inviting public analysts by letter to supply me with facts as to preservatives and colouring matters in any meat products which they have lately examined or may shortly be receiving.

In order that this information may be as complete as possible, I would be much obliged if you would kindly arrange to transmit to the analyst, in regard of samples lately collected, or shortly to be collected, full particulars as to each sample, namely :—

- (a) The description of the article purchased.
- (b) The nature of the receptacle, if any, in which it was purchased (hermetically sealed can or tin, covered pot, &c.).
- (c) The name of the manufacturer, brand of goods, or any other statements on the label.

(I may state here that it is not intended to make public use of any name, &c., by which individual firms can be identified.)

I would like to make a further suggestion regarding samples which may shortly be collected, namely, that in the case of meat products in cans, tins, &c., it would often be best that the whole sample as purchased should be sent to the analyst. This proceeding would prevent prosecutions being instituted in the case of such samples ; but on the other hand, the principal point in many of these cases, alike for local and central authority, is knowledge of the facts, before questions of prosecution are considered. By not dividing the sample, the analyst has more material for examination, he can, if he desires, make bacteriological examination to see if the contents of the can, &c., are sterile, and he is better acquainted with the nature of the material he is testing.

If in ordinary circumstances arrangements regarding sampling under the Sale of Food and Drugs Acts do not come under your direction, I would be glad if you would kindly forward this request to the officer or officers of the Council with whom such arrangements rest.

The Medical Officer of Health."

For the purposes of these Acts 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 Acts. The number of samples taken during the year was 939. Of these, 241 were taken in the first, 242 in the second, 220 in the third, and 236 in the fourth quarter, or—

214	from Barry District.
185	„ Bridgend „
114	„ Merthyr „
48	„ *Aberdare „
179	„ Neath „
199	„ Pontypridd „

* Aberdare was created one of the five districts in lieu of Merthyr, which became a County Borough during 1908.

A list of the samples taken and analysed is given below :—

TABLE XVIII.

Milk	522	Vinegar	12	Yeast	3
Butter	90	Balsam of Honey	1	Ground Ginger	3
Margarine	7	Honey	1	Preserved Cherries	1
Cheese	2	Preserved Gooseberries	1	Currant Cake	2
Lard	40	Demerara Sugar	14	Seed Cake	1
Bread	3	Brown Sugar	5	Coffee	8
Baking Powder	2	Marmalade	1	Sweet Oil	1
Sausages	2	Tea	5	Sweet Spirits of Nitre	1
Tinned Salmon	3	Cocoa	3	Essence of Peppermint	1
Sardines	1	Olive Oil	2	Fresh Herrings	2
Tinned Brawn	2	Tartaric Acid	6	Ice Cream	1
Tinned Herrings	1	Camphorated Oil	2	Strawberry Jam	2
Corned Beef	10	Friar's Balsam	1	Brawn	1
Lunch Tongue	6	Eucalyptus	1	Corn Flour	1
Tinned Rabbit	2	Linseed Oil	1	Mixed Spices	1
Compressed Mutton	1	Almond Oil	1	Raspberry Jam	1
Arrowroot	2	Magnesia	2	Cherry Cake	2
Ground Rice	5	Cream of Tartar	6	Milk Chocolate	2
Tapioca	5	Whiskey	38	Raw Sugar	1
Self-raising Flour	6	Brandy	5	Fruit Cake	1
Sago	3	Rum	11	Ginger Fruit Wine	1
Oatmeal	6	Gin	13	Milk of Sulphur	1
Rolled White Oats	3	Bacon	4	Flour of Brimstone	1
Rice	3	Pork and Beans	1	Bicarbonate of Soda	1
Pepper	31	Lobster	2	Tincture of Rhubarb	1
Ginger	1				

The results of the analyses are given in the County Analyst's Quarterly Reports, but it would be instructive to note how the important articles of food, such as milk, butter, &c., stood as far as the addition of preservatives were concerned, such as formaldehyde or formalin, salicylic acid, boric acid, or mixtures thereof, and copper salts.

TABLE XIX.

MILK.

Genuine, and fully equal to the Standard.	Slightly under Standard.	Deficient in Butter Fat.	Added Water.	Preservatives.
101	3	3	3	All free from boric acid and formalin.
108	7	9	5	All free from boric acid and formalin.
117	5	12	2	One contained boric acid, 41 grains per gallon. One was suspicious of formalin.
131	4	3	2	Three contained boric acid and two were suspicious of the presence of formalin.

BUTTER.

Genuine.	Foreign Fats.	Preservatives.	Water in large excess.	Remarks.
14	One proved to be Margarine	11 contained boric acid, but under 0.5 per cent.	One contained 23 per cent. One just on the limit (16 per cent.)	Sold as milk-blended butter.
27	All Free.	10 free from boric acid, and 16 contained small quantities, but under 0.5 per cent.		
18	All Free.	15 free from boric acid, and 3 contained small quantities, less than 0.5 per cent.		
18	All Free.	9 contained boric acid, but less than 0.5 per cent.		

FERTILISERS AND FEEDING STUFFS ACT, 1893.

Under this Act 161 samples were received as follows :—Egyptian Cotton Cake, 4 ; Thorley Cake, 1 ; Decorticated Cotton Cake, 5 ; Cotton Cake, 1 ; Cottonseed Cake, 2 ; Linseed Cake, 3 ; Weaver's Fattening Cake, 1 ; Fattening Cake, 5 ; Ashworth's Oil Cake, 1 ; Bibby's Cream Equivalent, 1 ; Universal Feeding Cake, 1 ; Albion Compound Feeding Cake, 1 ; Bibby's Feeding Cake, 1 ; Bibby's Feeding Cakettes, 2 ; Linko, 1 ; Bone Superphosphate Compound, 1 ; Basic Superphosphate, 1 ; Superphosphate, 19 ; Basic Slag, 6 ; Basic Phosphate, 1 ; Asphate Guano, 1 ; Pig Meat, 2 ; Foster's Feeding Meal, 1 ; Molassine Meal, 1 ; Ashworth's Dairy Meal, 4 ; Dairy Meal, 5 ; Indian Meal, 6 ; Maize Meal, 1 ; Barley Meal, 24 ; Sharps, 4 ; Kainit, 2 ; Sulphate of Potash, 1 ; Sulphate of Ammonia, 1 ; Bone Manure, 2 ; Pure Dissolved Bone, 2 ; Pure Bone Meal, 1 ; Steamed Bone Flour, 1 ; Patent Natural Fertiliser, 1 ; Patent Manure, 1 ; Phossoline Manure, 2 ; Mangold Manure, 1 ; Turnip Manure, 1 ; Bibby's Pure Linseed Cake, 1 ; Bibby's Meal, 3 ; Fattening Meal, 2 ; Calf Meal, 2 ; Odam's Dissolved Bone Compound, 1 ; Odam's Special Fertiliser, 1 ; No. 14 Fertiliser and Gypsum, 1 ; No. 16 Fertiliser and Gypsum, 1 ; Fattening Cake Nuts, 1 ; Undecorticated Cotton Cake, 2 ; Crushed Thorley Cake, 1 ; Bibby's Cakettes, 1 ; Poultry Meal, 1 ; Linseed, 1 ; Bran, 2 ; English Decorticated Cotton Cake, 2 ; Ashworth's Oil Cake, 1 ; Compound Fattening Cake, 1 ; Lamb Cake, 1 ; Linseed Cake, 2 ; Feeding Meal, 1 ; Poultry Corn, 1 ; Clay's Fertiliser, 1 ; Canary Guano, 1 ; Fane's Fertiliser, 1 ; Odam's Superphosphate, 1 .

WATER SUPPLY.

As far back as my Annual Report for 1893 (my second Annual Report to the County Council), I reported thus :—

“The Water Supply, especially of the mineral area of the County, is a matter of the greatest importance. During the drought of last summer there was a great scarcity in many localities—a condition bordering almost on a water famine. At present a great alarm is felt that there may, should we have a repetition of last summer, be an absolute water famine in the near future if some means are not taken to provide an adequate supply.

In 1881 and 1891 the population of the Administrative County numbered 352,242 and 467,875 respectively, and at mid-year 1893 it has been estimated at 521,872. These figures show how the population has increased during the last decade, and how it is still increasing, what it may become in the future, and how absolutely necessary it is to be in readiness to supply it with sufficient water. In June, 1893, deputations from the Local Boards of Ystradyfodwg (now Rhondda) and Pontypridd waited upon the Water Committee of the County Council and represented that then a serious deficiency of water existed in their Districts, and that the prospects for the near future were alarming. The Committee recommended that a deputation, consisting of members of the Water Committee and of the Local Authorities, be sent to the Local Government Board, urging them to introduce into Parliament a measure repealing the Clause prohibiting Local Authorities from competing in Water Supply with private Water Companies within their Districts, and also to authorise the County Council to promote a Bill for providing a Water Supply for the County. Such powers, however, were not granted them. It will soon become necessary that the supply of water to the mineral districts must be obtained by a large and general scheme from the mountain ranges lying to the north of the coalfields. Merthyr and Cardiff already obtain their supplies from this area, and until such another scheme is provided for the remaining mineral districts their present and anticipated future population cannot be said to be adequately supplied with a constant and sufficient quantity of pure and wholesome water, which is a first necessity of life."

The same matter is referred to in almost every Annual Report which I have since presented, and also in many of my Quarterly Reports, but inasmuch as it is only comparatively quite recently (1903) that County Councils have been placed in the position to promote Bills in Parliament, the Glamorgan County Council has been practically powerless to move in the matter. The first and most pressing sanitary requirement of the County is a better water supply, and the time has arrived when a large and comprehensive scheme, contemplating the taking of water from the mountain ranges north of the coal-measures should be carried out.

In the 1906 Session of Parliament the County Council promoted "A Bill to empower the Glamorgan County Council to make inquiries and surveys with a view to the Utilisation of Water Supplies in South Wales and to form Water Districts; and for other purposes." This Bill (as amended in Committee) became "An Act to empower the Glamorgan County Council to make inquiries and surveys with a view to the Utilisation of Water Supplies in South Wales; and for other purposes."

The County Council having taken this important and hitherto unprecedented step, and fully realising as it does the great importance of providing the teeming population of its industrial and other centres with an adequate supply of pure and wholesome water, are now utilising the powers that Parliament has been pleased to confer upon them, and have already made the enquiries and surveys which they were empowered to make. Moreover, a scheme has been prepared contemplating the formation of a Water Board, with power—

- (a) To acquire and control the existing sources of supply.
- (b) To secure further sources of supply, and, if considered desirable, to undertake the distribution of water to the consumers.
- (c) To advise as to the best method of dealing with the present and future water supply of the Administrative County.

In the 1909 Session, the Glamorgan County Council promoted a Bill in Parliament. Under this Bill powers were sought

“To constitute a Water Board for the County of Glamorgan and to empower the Board to acquire the Undertakings or parts of the Undertakings of certain Companies and to supply water ; to confer powers on certain Local Authorities ; and for other purposes.”

The Preamble of this Bill, after a lengthy hearing by a Committee of the House of Commons for almost three weeks, was approved, and the Bill has now passed its third reading, and was passed by the Examiners to go before the House of Lords.

For a detailed account of the Water Supplies of the County, I would refer you to my special report on “The Water Supplies of Glamorgan,” published December, 1902 and “A Summary of Particulars as to (1) District Supplies, &c., and (2) Population and its increase, 1906,” and also to Quarterly and Annual Reports from that time up to date.

The improvements carried out in this connection are referred to in the local summaries, but it is important that a list of those Districts or portions thereof that are inadequately supplied, and they are many, should be referred to here.

The subjoined list furnishes the names of places and localities where the supplies are inadequate or unsatisfactory :—

<i>District.</i>	<i>Districts or portions of Districts inadequately supplied.</i>
ABERAVON .. ..	.. Council's own supply inadequate and liable to pollution.
ABERDARE .. ..	.. Supply adequate, but water possesses plumbo-solvent action.
BARRY .. ..	.. Unsatisfactory in quality, but plentiful in quantity.
BRIDGEND .. ..	.. Not satisfactory in quality, plentiful in quantity.
BRITON FERRY ..	.. Inadequate in very dry weather.
CAERPHILLY .. ..	.. Inadequate and unsatisfactory in parts of the District.
COWBRIDGE BOROUGH	.. Inadequate and unsatisfactory in the whole of the District.
GLYNCORWG .. ..	.. Present storage capacity totally inadequate.
MAESTEG .. ..	.. Totally inadequate. Parliamentary powers obtained some time ago to procure further supply.
NEATH BOROUGH. ..	.. Short at times in dry seasons.
OGMORE AND GARW ..	.. Very scarce at Gilfach Goch. Storage capacity totally inadequate throughout District.
OYSTERMOUTH.. ..	.. Intermittent, inadequate, and unsatisfactory on examination.
PONTYPRIDD .. ..	.. Short in dry seasons, all available sources utilised, population increasing. Water possesses plumbo-solvent action. A large scheme in construction by the Pontypridd Water Company.
RHONDDA .. ..	.. Inadequate. A large scheme in construction. Water collected from certain areas possesses plumbo-solvent action.
COWBRIDGE RURAL ..	.. Inadequate at St. Donats, Llandow, Pontyclun, St. Hilary, Llanblethian, and other places.

<i>Districts.</i>	<i>Districts or portions of Districts inadequately supplied.</i>
GELLIGAER AND RHIGOS	.. Inadequate at Fochriw and Gelligaer at the end of the year, but steps were being taken to supply these places.
GOWER	.. .. Llanrhidian Higher, Knelston, Horton, Scurlage Castle, etc.
LLANDAFF AND DINAS POWIS	Pentyrch, Penygarn (Local Government Board Inquiry for sanction to borrow necessary sum already held), and several other places.
LLANTRISANT AND LLANTWIT FARDRE	"In some places still the residents have to depend upon wells for their supply; these wells are usually surface wells, and are nearly always open to contamination."
NEATH RURAL	.. .. Tonna, Cimla, Glyn Neath, Resolven, Cilfrew, Seven Sisters, Cadoxton, Pontrhydyfen, and Cwmavon. A very large scheme (the Ystradfellte Water Scheme) is in hand, which is estimated to cost close upon £200,000.
PENYBONT	.. .. Pencoed, Penprisk, Pontrhydyff, St. Brides Major, and Heolyciw. A Local Government Board Inquiry has been held for sanction for the necessary sum to supply Pencoed, Penprisk, Heolyciw, etc.

THE EXAMINATION OF WATER SUPPLIES.

As in former years samples from the main sources of supply and certain wells of the County have been systematically examined at the County Laboratory, both chemically and bacteriologically, every quarter. A large number of samples also from suspected wells, &c., and proposed new sources, have been investigated.

117 samples were examined chemically; of these, 73 were satisfactory; 39 were suspicious; and 5 unfit.

92 samples were examined bacteriologically; of these, 56 were satisfactory; 16 suspicious; and 20 unfit.

In addition to the above, many samples were analysed for the Borough of Swansea and the various Port Sanitary Districts.

In every instance the results of the analysis were sent to the District Councils concerned.

Although such an undertaking entails an enormous amount of work, yet it is of the greatest importance that the County Council should be in possession of the valuable data thus obtained.

None of the District Councils possess a Laboratory, and their Medical Officers of Health do not undertake analytical work of this description.

SEWERAGE AND SEWAGE DISPOSAL WORKS.

Several additional and important sewerage and sewage disposal works have been completed or undertaken in many Districts during the year, and it is very gratifying to put on record the completion of some very comprehensive schemes, and of others in contemplation. This is one of the most important features associated with the progress of sanitation in the County during recent years.

The improvements and new works carried out are referred to in the local summaries, and in this connection I have only to mention the following comprehensive schemes now in construction or contemplation—

- (a) *The Afan Valley Scheme*, comprising the Districts of Glyncoiwg, Pontrhydyfen, and Cwmavon (parts of Neath Rural), and Margam (parts of). Cost about £130,000.
- (b) *The Sewerage of the Rhymney Valley*, comprising portions of all the Sanitary Districts on each side of the river. This proposed scheme is now receiving the consideration of the District Councils concerned. That a scheme is needed there can be no doubt.
- (c) *Ely Valley Sewerage Scheme*. Llantrisant District. Plans, etc., have been prepared. Estimated cost, £40,000.
- (d) *Neath Rural District*.
 - (1) The sewerage of *Glyn Neath, Resolven, and Onllwyn*, are still being spasmodically considered by the Council.
 - (2) *Seven Sisters*. This scheme is in construction.
- (e) *Pontardawe Rural District—The Tawe Valley Sewerage Schemes*, for Ystalyfera and Clydach, are about to be taken in hand.
- (f) *Swansea Rural District—Sewerage Schemes* for Sketty, Gorseinon, and Pontardulais, are about to be carried out.

Chemical Examinations of Sewages and Sewage Effluents in the County of Glamorgan (1908).

THE FIGURES REFER TO PARTS PER 100,000.

TABLE XX.

SAMPLE.	Date Collected, 1908.	Suspended Matter.	Free Ammonia.	Albuminoid Ammonia.	Putrescibility.	Nitrogen as Nitrates.	Chlorine.	Percentage Purification calculated on Albuminoid Ammonia.
BRITHDIR.								per cent.
Crude Sewage	January 8th	12.8	0.35	.23	.58	t.o.	2.0	82.6
Effluent	...	...	.13	.04	Nil	...	2.2	...
Crude Sewage	March 11th	—	3.66	2.08	2.85	Nil	—	94.3
Effluent	...	t.o.	0.17	.12	Nil	.34	4.8	...
Crude Sewage	June 24th	e.a.	13.10	3.40	6.50	Nil	19.0	...
Effluent	...	3.9	1.12	.20	Nil	1.90	15.7	94.1
Crude Sewage	September 9th	23.8	2.40	.68	1.27	Nil	4.0	95.6
Effluent	...	t.o.	.01	.03	Nil	3.36	6.3	...
Crude Sewage	December 15th	18.1	.76	.20	.04	Nil	1.4	85.0
Effluent	"	t.o.	.02	.03	Nil	1.66	3.6	...
TIRPHIL.								
Crude Sewage	January 22nd	31.2	4.80	1.56	1.90	t.o.	7.0	96.8
Effluent	...	t.o.	.21	.05	.02	.24	4.6	...
Crude Sewage	April 1st	15.8	4.10	1.38	2.22	Nil	—	97.1
Effluent	...	s.a.	.22	.04	Nil	1.73	—	...
Crude Sewage	July 22nd	28.5	3.52	1.96	2.32	t.o.	11.2	98.9
Effluent	...	t.o.	.005	.02	Nil	2.68	9.4	...
Crude Sewage	September 23rd	33.4	2.02	.84	1.56	Nil	5.7	97.7
Effluent	"	t.o.	.003	.02	Nil	1.40	4.0	...
TROEDYRHU.								
Crude Sewage	January 14th	29.2	3.72	1.45	1.41	t.o.	7.8	97.9
Effluent	...	t.o.	.13	.03	Nil	.23	3.2	...
Crude Sewage	March 16th	41.7	2.98	1.28	1.23	Nil	—	96.9
Effluent	...	3.8	.16	.04	Nil	.48	—	...
Crude Sewage	July 2nd	32.8	4.96	1.44	2.16	Nil	10.8	88.9
Effluent	...	f.a.	.56	.16	.16	.05	3.5	...
Crude Sewage	September 11th	30.7	1.78	.54	1.43	Nil	5.0	92.6
Effluent	"	f.a.	.20	.04	.06	.25	3.1	...
PARNEWYDD.								
Crude Sewage	February 5th	13.6	1.35	.45	.78	Nil	3.2	98.9
Effluent	...	t.o.	.006	.005	Nil	2.06	3.3	...
Crude Sewage	May 5th	11.8	.51	.14	.40	Nil	2.0	85.7
Effluent	...	t.o.	.10	.02	Nil	1.17	3.0	...
Crude Sewage	October 6th	35.2	1.98	.70	1.45	Nil	5.2	97.2
Effluent	"	t.o.	.09	.02	Nil	.93	4.1	...
MAESTEG.								
Crude Sewage	January 30th	21.3	2.08	.56	1.03	Nil	8.0	84.0
Effluent	...	t.o.	.49	.09	Nil	2.00	3.3	...
Crude Sewage	May 12th	21.8	1.17	.38	1.90	Nil	4.2	68.5
Effluent	...	s.a.	.71	.12	Nil	1.30	4.0	...
Crude Sewage	July 24th	31.3	2.32	.75	2.05	t.o.	11.7	91.7
Effluent	...	s.a.	.46	.07	Nil	.48	5.2	...
Crude Sewage	September 16th	28.2	2.40	.81	1.48	t.o.	13.0	86.5
Effluent	"	f.a.	.77	.11	Nil	.61	5.0	...

t.o.—Traces only.

s.a.—Small amount.

e.a.—Excessive amount.

f.a.—Fair amount.

TABLE XX.—CONTINUED.

SAMPLE.	Date Collected, 1908.	Suspended Matter.	Free Ammonia.	Albuminoid Ammonia.	Putrescibility.	Nitrogen as Nitrates.	Chlorine.	Percentage Purification Calculated on Albuminoid Ammonia.
YNSYBWL. Crude Sewage ... Effluent ...	February 12th ... " ...	22.6 s.a. ...	2.90 1.73	.74 .10	1.73 Nil	Nil .08	6.2 3.8	86.5
NEW ROAD, YNSYBWL. Crude Sewage ... Effluent ... Crude Sewage ... Effluent ...	February 12th ... " ... November 3rd ... " ...	23.5 13.8 25.8 7.9	3.70 3.98 7.04 4.40	1.33 .88 1.88 .33	.72 .50 1.52 .07	Nil .97 t.o. .52	8.3 9.0 13.0 10.5	33.8 82.4
OWMAVON. Crude Sewage ... Effluent ... Crude Sewage ... Effluent ... Crude Sewage ... Effluent ... Crude Sewage ... Effluent ... Crude Sewage ... Effluent ... Crude Sewage ... Effluent ...	February 29th ... May 21st ... " ... July 27th ... " ... September 3rd ... " ... October 22nd ... " ... December 17th ... " ...	19.8 15.2 31.8 24.7 33.3 10.3 c.a. f.a. 15.2 11.3 21.0 —	2.02 1.68 2.54 2.02 1.83 .72 3.12 1.46 1.44 71 1.12 1.08	1.30 1.13 1.12 .90 1.40 .73 .52 .25 .22 .20 .45 .32	1.20 .83 1.41 1.05 2.07 1.90 .34 .30 .70 .54 1.17 1.52	Nil Nil Nil Nil Nil Nil Nil Nil Nil Nil Nil Nil	5.0 4.1 16.0 13.3 10.0 5.3 6.0 3.9 2.7 2.2 2.8 2.8	13.0 19.6 47.8 51.9 9.1 28.9
MOUNTAIN ASH. Crude Sewage ... Effluent ... Crude Sewage ... Effluent ... Crude Sewage ... Effluent ... Crude Sewage ... Effluent ...	February 19th ... April 8th ... May 22nd ... " ... October 13th ... " ...	25.2 5.8 — s.a. 9.8 5.1 19.8 f.a.	2.28 1.50 — .93 4.3 1.52	.60 .36 — .24 .45 .21	.67 .46 — .58 1.57 .35	Nil .11 Nil .03 Nil Nil Nil t.o.	3.8 3.2 — — 3.0 2.5 4.6 3.4	40.0 — 58.0 53.3
BARGOED. Crude Sewage ... Effluent ... Crude Sewage ... Effluent ... Crude Sewage ... Effluent ... Crude Sewage ... Effluent ...	March 18th ... June 17th ... " ... September 15th ... " ... December 9th ... " ...	— t.o. 43.8 s.a. 22.7 t.o. 24.2 s.a.	2.75 .32 4.80 .40 3.90 .72 4.75 .64	1.20 .07 1.86 .08 1.21 .08 1.27 .07	1.40 Nil 1.50 Nil 1.63 Nil 1.87 Nil	Nil .20 t.o. .10 Nil .52 Nil .72	— — 10.3 4.6 8.2 7.4 6.3 4.4	94.2 95.7 93.4 94.5
ELY. Crude Sewage ... Effluent ... Crude Sewage ... Effluent ...	February 25th ... " ... October 13th ... " ...	20.3 s.a. 30.6 6.1	1.50 .09 2.08 .80	.43 .05 .66 .20	.87 Nil 1.03 .15	t.o. .25 Nil t.o.	7.7 5.8 6.7 6.5	88.4 69.7
BRYNMEIN. Crude Sewage ... Effluent ...	October 7th ... " ...	16.2 f.a.	2.04 .52	.41 .17	1.44 .20	Nil .06	5.0 4.8	58.8

t.o.—Traces only.

s.a.—Small amount.

c.a.—Considerable amount.

f.a.—Fair amount.

CHEMICAL ANALYSES OF SEWAGES AND SEWAGE EFFLUENTS CARRIED OUT IN 1908.

GENERAL REMARKS :—

Organic Ammonia.—A common standard for a good effluent is that it should contain less than 0.1 part per 100,000 of organic ammonia.

Where the corresponding crude sewage is of a strong character, a higher limit may be allowable.

Putrescibility.—The results given under this column are measured as the increase in the oxygen absorbed by readily oxidisable organic matter after seven days' incubation, compared with that on the original sample. A good effluent should show no increase after incubation.

Nitrates.—In general, the higher the relative proportion of nitrates, the more satisfactory the effluent, since nitrates are the final products of the oxidation of nitrogenous organic matter.

Chlorine.—With no dilution of the effluent, by rain or other water, the chlorine figures in the effluent and the corresponding crude sewage will be approximately the same.

REMARKS ON ANALYSES.

BRITHDIR.

Samples of crude sewage were of varying strengths.

The effluents were in all cases satisfactory, and analytical results again indicated efficient working of the filter-beds throughout the year.

TIRPHIL.

Crude sewages were of moderate strength.

In all cases the effluents were of excellent quality, and showed a high degree of purification.

TROEDYRHIW.

The crude sewages were of a fairly strong character.

The January and March samples of effluent were satisfactory, but the later samples were of moderate quality and showed inefficient purification.

PARKNEWYDD.

Samples of crude sewage were of moderate strength.

As in previous years all the effluents proved to be highly satisfactory, being clear, non-putrescible, and showing efficient oxidation.

MAESTEG.

The crude sewages were usually of moderate strength.

All the effluents were fairly satisfactory, showing efficient purification.

YNYSYBWL.

The one sample of effluent examined from this source was fairly satisfactory.

NEW ROAD, YNYSYBWL.

The samples of crude sewage were of a strong character.

The effluent taken in February was bad ; the November sample was of moderate purity.

CWMAYON.

Samples of crude sewage were of moderate strength.

These filter-beds continue to give most unsatisfactory results.

All the six effluents examined were strongly putrescible, and showed practically no purification effected.

MOUNTAIN ASH.

The samples of crude sewage were usually of less than average strength, but all the effluents again proved to be unsatisfactory, being distinctly putrescible and showing little final oxidation.

BARGOED.

The crude sewages were of a fairly strong character.

For the effluents the percentage purification was high and the analytical results again indicated efficient working of the filter-beds.

ELY.

The February sample of effluent was satisfactory; the October sample was of poorer quality and showed inefficient purification.

BRYNMENIN.

The sample of effluent from this source was putrescible and showed unsatisfactory filtration.

REFUSE DISPOSAL.

There are at present only two refuse destructors in the Administrative County, viz., one at Barry, in which is destroyed the refuse of the whole District; and one, a Mason's Gasifier (an experimental one), at the Rhondda, and which destroys only a very small fraction of the refuse of the District.

Several are in course of construction or contemplation, those for Aberdare and Pontypridd.

The disposal of refuse is one of the most difficult problems that Sanitary Authorities in the Mining valleys of this County have to grapple with. There are indications, however, that the solution of this problem is now receiving attention, and that in the near future refuse destructors will be provided, *e.g.*, at Aberdare, Pontypridd (near completion), and Rhondda Valley, the urgent necessity for which has been repeatedly referred to in the annual reports for these Districts.

POLLUTION OF RIVERS AND STREAMS.

Heads of Evidence, &c., given by me before the Royal Commission on Sewage Disposal are included.

The Sanitary Committee of the Glamorgan County Council have taken up the question of the Prevention of the Pollution of Rivers with great energy throughout the whole of the County, which has an estimated population (including the County Boroughs of Cardiff, Swansea, and Merthyr) of about a million people.

In order to enable the Royal Commission to form an opinion of the condition of the rivers of Glamorgan, I think it advisable to preface what I have to say by giving the following extracts from my Annual Report for 1907, under the heading—"Pollution of Rivers and Streams."

"Much work has been done during recent years with a view to prevent the pollution of our rivers by sewage; and as far as sewage is concerned, I do not experience any difficulty, now that the requirements

of the Local Government Board with respect to land are altered on the recommendation of the Royal Commission on Sewage Disposal. In some of our long, narrow, and crooked valleys, it is often impossible to acquire sufficient areas of land within reasonable and suitable distances for sewage disposal purposes.

In the whole County there are 28 Sanitary Districts, and out of these some dozen or portions thereof, representing a population of considerably over 500,000, discharge their crude sewage into *tidal rivers* and the *sea*, and the sewage of some nine, or parts thereof, is treated on sewage farms, of which there are several, large and small, and one of the oldest (Merthyr) in the country.

During the last dozen years or more, through the action of the County Council, several old sewerage works have been improved, and many new works constructed; and when the works now in progress have been completed, the expenditure on these works will reach a sum of over £700,000 in thirteen years.

With regard to the *pollution by small coal*, little has been done, except in a few places where washing machines are used, and where the small coal contained in the washing water, and in the water pumped from the pits, is allowed to settle in large tanks before it is discharged into the rivers, the reason for the fact that so little has been accomplished in this direction being that small coal causes "inocuous discolouration," and this is not considered to be pollution according to the Rivers Pollution Prevention Acts. This shows that extended powers by a special Act or the amendment of the existing Acts is very necessary in this County.

With regard to the pollution caused by tinsplate works, I would refer you to my Quarterly Report for December, 1902. It is much less than was the case a few years ago, for now at nearly all these works the "pickle," by the addition of scrap iron and continuous evaporation, in properly constructed vats, is completely converted into sulphate of iron (FeSO_4) or "copperas."

The "swilling fluid" is in some places filtered through filters of broken limestone and of earth, and a large proportion of the acid and other impurities is thus got rid of, provided these filters are changed as often as required. There is, however, a tendency to allow these filters to take care of themselves, which they are unable to do, and consequently constant supervision is necessary.

It is worthy of note that :—

- I. All the Glamorgan rivers have their origin within the County, or in the mountainous and uninhabited regions immediately beyond the northern boundary of the County, at elevations varying from 1,000 to 2,000 feet. They are consequently comparatively short, swift-running, the longest not more than 40 miles, so that their pollution takes place almost entirely in the County, and consequently it should not be so difficult (as in flat countries) to abate. Besides, no Joint River Boards are necessary.
- II. The water of *none* of the Glamorgan rivers is *used for drinking purposes* after any sewage has been discharged into them. Such a condition of things is highly satisfactory as compared with other important rivers, such as the Dee, Severn, etc.
- III. The principal pollution of rivers in Glamorgan are occasioned by :—
 - (a) Sewage—excremental and slop sewage;
 - (b) Small coal—from our many collieries; and
 - (c) Refuse from tinsplate works—consisting of vitriol and sulphate of iron."

.....

" A great deal of work, however, has been done during the year to reduce the pollution of rivers taking place in the County, and particulars of the many schemes of sewerage and sewage disposal works completed, and in course of construction, are given in the local summaries.

It is satisfactory to put on record that " pollution by sewage " is becoming less, year by year, as schemes of sewerage and sewage disposal are being carried out ; and when the many schemes now undertaken or about to be undertaken are completed, it will become still less.

The discolouration of rivers and streams by small coal washings is a difficult one to abate in this County, and the Rivers Pollution Prevention Acts should be so amended as to be applicable to small coal washings and tinplate effluents as is the case in other industrial centres.

Sections 14 and 15 of the Mersey and Irwell Joint Committee, 1892, reads thus :—

" Section 14.—(1) in this Act—

The term " person " includes a Sanitary Authority and any other body of persons whether corporate or not corporate.

The term " stream " includes canalised streams, brooks, and watercourses.

The term " solid matter " does not include particles of matter in suspension in water.

(2).—Any liquid which merely occasions innocuous discolouration of any river or stream shall not be deemed to be polluting for the purposes of this Act.

Section 15.—Notwithstanding anything in this Act contained, no person shall be deemed to have committed an offence against this Act, or be liable to any proceedings under this Act by reason or in consequence of any water flowing into the River Mersey or the River Irwell, or any tributary thereof respectively, in the same condition as that to which such water has been drained or raised from any mine, pit shaft, or quarry, by reason of the consequence of any water flowing into the River Mersey or the River Irwell, or any tributary thereof respectively, from any colliery or pit bank, or by reason or in consequence of any water so flowing which has passed through an efficient settling tank in connection with any coal-washing machinery."

I would again call the attention of the Local Authorities who allow sewage to be discharged into water-courses, to Sec. 1 of the Rivers Pollution Prevention Act, 1893 :—

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

The Section of the 1876 Act referred to above reads :—" Every person who causes to fall or flow, or knowingly permits to fall or flow, or to 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 noticed that by Sec. 14 of the Local Government Act, 1888, the County Council has power to enforce the provisions of the above.

EVIDENCE.

Although the County Council has been instrumental in reducing the pollution of the rivers by sewage and trade effluents to a great extent, yet they felt, some time ago, that more work could be accomplished in this direction, and, acting upon my advice in December, 1901, a County Sanitary Inspector was appointed, whose duties, amongst others, are the following :—

- (1) To regularly visit, inspect, and report on the sewage works of Sanitary Authorities, colliery, tinsplate and other works, and all rivers within the Administrative County.
- (2) To take samples for analysis in all parts of the County of drinking water, effluents from bacterial tanks, sewage farms, trade effluents, river waters, &c.
- (3) To attend Court and give evidence in case of prosecutions instituted.

I understand the Royal Commission on Sewage Disposal are now taking up the systematic investigation of :—

THE MEANS AVAILABLE FOR DISPOSING OF TRADE EFFLUENTS WHEN NOT
MIXED WITH SEWAGE.

I propose to deal with the questions in the order in which they are asked by the Commission, and to include suggestions as to the investigations which I think are required.

(a) WHAT CLASSES OF TRADE WASTES HAVE TO BE DEALT WITH IN THE COUNTY OF GLAMORGAN ?

The following classes of trade wastes have to be dealt with :—

- (1) The waste " pickle " and " swilling fluids " produced in the process of tinsplate manufacture.
- (2) The " blackened wastes " or " wash water " from coal washeries.
- (3) The " wastes from bye-product works " in connection with collieries.
- (4) The " waste liquids " from a few offensive trades.
- (5) " Brewery wastes."

(1) *Trade Wastes of Tinsplate Manufacture.*

After the raw material—called tinsplate bars—has been heated, rolled, sheared, and opened, the resulting plates are then placed in a cage, containing racks, in which they are stacked. The cradle, or cage, and contents, are then immersed in a tank containing crude oil of vitriol ; then the cage is raised and again immersed, and so on until the surface of the plates is cleansed from all scruff, etc. This process is called " pickling," and the resulting waste " pickle." The acid used in time becomes spent, and is then run out of the tank. In the majority of the works, excepting some on tidal rivers and a few elsewhere, the " waste pickle " is passed into a sump, and pumped therefrom into an evaporating tank, which may be of brick, or wood, lead-lined, and provided with coils of leaden pipe through which steam is made to pass. In this tank the waste pickle, consisting of the spent sulphuric acid with sulphate of iron in solution, is concentrated, by evaporation, and is afterwards run into vats or palm oil casks, in which are hung strips of iron, tin, or

wood, and on to which the crystals of copperas (or sulphate of iron) adhere on cooling. When the crystallisation has ceased, the liquid portion of the contents of the casks, etc.—the mother liquor—is pumped back into the evaporating tank, whence it is mixed with the waste pickle pumped from the sump, and concentrated as before. At a few works, however, the waste pickle is not converted into copperas, but allowed to drain through heaps of boiler ashes and clinker adjacent to the works, where it is lost sight of.

As regards the “swilling wastes” (the water which has been used for swilling the plates after the latter has been pickled), this contains some acid which has been carried over by the plates on leaving the pickling tank. In a very few works only is there any attempt made to reduce or neutralise the acidity of this fluid, and the method adopted consists in passing the wastes through filters of earth and branches of trees, and over bays made up of broken limestone.

Such a method, properly carried out, produces good results.

Although the cost of this method is but nominal, viz., that of the broken limestone, etc., frequent inspections of these works have to be made, or else the bays are left to take care of themselves, and the limestone is not renewed. This process requires much attention, otherwise the surface gets coated with yellow ochre, and then ceases to have a neutralising effect on the acid present.

In the other tinplate works, “swilling fluid” is passed into the river or canal near the works, without any attempts being made to reduce the acidity.

Owing to the large volume of, and relatively small amount of acid and sulphate of iron in the “swilling fluid,” it is impracticable to concentrate it by evaporation and allow it to crystallise out as is done with the waste pickle, but the passing of it over limestone chippings is a method at once practicable and available, and the cost is but small.

The acidity might be neutralised by the addition of lime. I have no experience of this process, but do not think it practicable owing to the fact that the sulphate of lime produced is difficult of sedimentation. In the case where copperas is not made, the argument used is that it does not pay to convert the waste pickle into copperas, but on making enquiries of the other leading tinplate manufacturers in the County, I find that the consensus of opinion is that copperas making at the present time is a profitable undertaking, and that even when the market for this commodity is at its lowest ebb, all expenses are cleared. The demand for copperas, I am told, is on the increase, so that the erection of a plant—the initial cost of which is low (£125 to £130 per mill)—should be insisted upon in connection with every tinplate works, whether on tidal or non-tidal rivers.

Samples of effluent wastes from the various works are taken quarterly, or oftener, and are analysed at the County Laboratory; note is made of the river or stream into which the effluent discharges, and also the approximate dilution it undergoes thereby.

Where the amount of free sulphuric acid and sulphate of iron respectively are found excessive, the Clerk, authorised by the Sanitary Committee, notifies the manufacturers of the pollution which occurred, and requests that the same should cease. This is usually effective, and no prosecutions have resulted. The variation in the composition of these effluents from time to time shows the need of continual watchfulness in order to keep down the pollution from this source.

The local standards adopted, after careful observation extended over a period of some years, are 10 parts of sulphuric acid and 100 parts of sulphate of iron per 100,000 parts. These standards have been adopted because it has been found from numerous analyses that it is readily practicable to reduce the amount of this acid and ferrous-sulphate well below these standards in carefully regulated works.

There are some 40 tinsplate works in the County. Of these, some eight are situated on the sea-shore, about 10 on tidal rivers, and 22 on non-tidal rivers.

Where copperas plants have been erected they are generally found in good working order.

[] Some estimate of the magnitude of the tinsplate industry in Glamorgan can be formed when I say that I learn from various sources that they employ about 20,000 men, and utilise about 900 tons of sulphuric acid per week.

I am of the opinion :—

(1) That conversion of the waste pickle into copperas, wherever the works are situated, should be insisted upon.

(2) That facilities should be given at all reasonable times for the taking of samples, and making inspections of the works, by persons employed by County and District Councils.

(3) Swilling fluid is much weaker than the pickle, but in volume it is much larger, and to get rid of the free acid and sulphate of iron is a difficult problem. Whether the swilling fluid should be treated or not depends upon circumstances existing in connection with the works, such as :—

(a) The situation of the works ; and

(b) The use made of the river's water below the works.

1.—If the works are on the sea, and *not* near the estuary of an important river, as some are, *then* there would be *no* need of purifying the wastes.

2.—When the works are situated on estuaries containing a large volume of water, there would, under these circumstances, be *no* need of purifying the wastes.

3.—When the works are situated on tidal rivers, it may or it may not be considered necessary to purify the effluent. This would depend upon the quantity of water contained at various seasons in the river at the point where the wastes are discharged, and whether the river's water would, by the admission of the wastes, be rendered inimical to fish and plant life.

In Glamorgan all works on tidal rivers, except a few, discharge their swilling wastes, untreated, into the adjoining rivers.

4.—When the works are situated inland, on the non-tidal rivers, as the greater number of our works are, matters are different, and here the great difficulty arises. Here again local circumstances must be taken into consideration, such as the volume of water in the river in the dry season, whether the river's water is used for drinking purposes by man or animals, or otherwise made use of below the works.

(2) *Blackened Wastes or Wash Water.*

Some estimate of the magnitude of the coal mining industry in Glamorgan and South Wales can be formed from the following figures.

At the end of 1907, the number of Collieries existing, and the number of persons employed thereat, in Glamorgan and South Wales respectively, were as follows :—

	No. of Collieries.	No. of Colliers.
East Glamorgan	180	102,656
West „	165	33,504
	<hr/> 345	<hr/> 136,160
No. of persons employed in South Wales ..	..	<hr/>174,660
<i>Output of Coal in 1907.</i>		<i>Tons.</i>
Glamorgan .. .. .	..	36,782,508
South Wales .. .. .	..	49,978,196

The number of collieries at which coal washing is carried out was, at the end of 1907, about 24.

A large quantity of coke is manufactured throughout the County, and this requires that the small coal used for this purpose should be washed, so as to remove from it shale and other foreign matter.

In the washing process a large quantity of water is used, and re-used, until it becomes heavily charged with the finely divided particles of coal. This blackened water is disposed of in one of two ways :—

- (a) Discharged direct into the river ; or
- (b) Passed through settling ponds or tanks before being discharged thereto.

The former method is that generally in vogue with the result that the rivers are very often of a dense black colour for a considerable distance along their course, and as it is stated in the Rivers Pollution Prevention Acts that “inocuous discolouration” is not pollution, legal proceedings against the offenders is out of the question, and all that can be done is to endeavour to persuade colliery proprietors to have settling ponds or tanks constructed to allow of the subsidence of the finely divided particles prior to discharging the “wash water” into the rivers. This is a matter usually very difficult to bring about, as evidenced by the fact that out of the collieries where small coal washing takes place, it is at less than a dozen of these that settling ponds or tanks are provided.

Passing “wash water” through settling ponds and tanks to allow sedimentation of the finer particles is recognised as the best method of dealing with these wastes. The cost of such a scheme depends upon local conditions in each case, that is to say, it is oftentimes possible to lay out settling ponds at a cost which merely means the labour involved in banking up the clay, which is in many instances to be found on the spot. Again, in the vicinity of some works the actual outline of the ground is such that the water may be turned on to it, forming lagoons. These should be in sets of three, the one filling, the other standing full, whilst the third is being cleaned out.

As regards settling tanks, these are usually in sets of three, and are constructed of brickwork, both floor and sides, and are worked alternately, the final outlet leading to the neighbouring river or stream.

The difficulty common to both ponds and tanks alike, is that they are not cleaned out as often as they should be, with the result that the wash water passes direct into the river and discolours it.

As I have already indicated, the cost of laying out settling ponds is oftentimes only nominal, whilst the cost of the construction of settling tanks is reasonable. The material which is collected in these ponds and tanks, viz. :—the fine particles of coal, is an excellent fuel, and is suitable for burning under boilers for steam raising purposes. Therefore, the initial cost of the erection of the necessary plant would soon be recouped by the valuable material recovered.

When the dirty water from the washeries is discharged, untreated, into the stream, a much larger quantity of water is needed for washing the coal, and this carries a large quantity of good coal in suspension with it, whereas if passed through efficient settling tanks or ponds, the water may be used over and over again, and the coal formerly wasted, saved. In the majority of cases in Glamorgan, the fact seems to be overlooked that water, after it has parted with the chief portion of the solids in suspension, seems to be just as efficient for slack washing purposes as clear water. Therefore, with efficient ponds and settling tanks, no discolouration of the river need result, and it would be no hardship to insist upon these requirements.

Without being endowed with defined legal powers to ask Colliery Companies to construct settling tanks, etc., it appears to me almost futile to try to prevent the discolouration of our rivers with small coal, and I am of the opinion that the Rivers Pollution Prevention Acts should be so amended as to be applicable to small coal washings, as in the case of other industrial centres, such as the Mersey and Irwell Joint Committee Act, and the West Riding of Yorkshire Rivers Act, or that a special Act of Parliament should be obtained.

I should state that legal action was once taken by the Glamorgan County Council against the Great Western Colliery Company, and tried at Swansea on the 7th and 8th days of August, 1893, before Mr. Justice Wills. It was held that small coal was "inocuous discolouration," and not "pollution." The jury stated that plaintiffs had not made out their case, and returned a verdict for defendants, so judgment was given for defendants with costs.

(3) *Wastes from Bye-Product Works in connection with Collieries.*

There are three bye-product works existing in connection with Collieries in Glamorgan, the one started about six, one about three, and the other about two years ago. At two of these the bye-products manufactured are :—

- (a) Coal gas ;
- (b) Coal tar ; and
- (c) Ammoniacal liquor.

The gas is used for heating coke-ovens and for steam raising purposes.

The coal tar is sold as such.

From the ammoniacal liquor, ammonium sulphate is produced, and sold for manurial purposes.

No cyanide compounds are made at these works, and I am informed that the coal does not produce a sufficient quantity to make this a profitable undertaking.

At one of the works, the liquid wastes are conducted into a disused colliery shaft, and not into a river, the adjacent brook being perfectly clear, and is said to be a good trout stream.

At the other works, no information could be obtained as to the destiny of the liquid wastes.

At the third works the bye-products produced are :—

Coal gas—Used for lighting and driving engines.

Coal tar—from which is obtained anthracene oil and pitch.

Ammoniacal liquor—from which is made ammonium sulphate, which is said to be sold for manurial purposes at about £12 per ton.

Here the liquid wastes are filtered through the sand prior to being discharged into the river.

No cyanide compounds are made at these works.

I have not been able to have a sample of the liquid waste analysed, for the simple reason that the County Officials are only admitted to these works on sufferance. I am of the opinion that facilities should be given to authorised officials for inspection and sampling at reasonable times.

I would further suggest that investigations be undertaken by the systematic analyses of the wastes from these works with a view of deciding upon a standard of purity of the wastes prior to being discharged into the stream.

(4) *The Waste Liquors from a few Offensive Trades.*

The liquid wastes from a few offensive trades are usually discharged, after the removal of all grease and suspended matters, into the drains, and thence into the sewers in the localities in which the trades are carried on. The spent lime is removed and deposited on the fields.

(5) *Brewery Wastes.*

Brewery wastes are generally discharged into sewers after cooling, but a small quantity here and there is discharged into the rivers, but, except during droughts and very hot weather, when a deposit forms in the river bed, there is usually very little cause for complaint from this source.

(b) TO WHAT EXTENT THE TRADE WASTE IS SATISFACTORILY DEALT WITH ?

The trade waste from tinsplate works, *i.e.* the waste acid or "pickle" is satisfactorily dealt with in most instances, and there only remains the treatment of the "swilling fluid," to which I have referred and made suggestions elsewhere.

(c) WHETHER THERE ARE ANY FORMS OF TRADE WASTES THAT ARE DIFFICULT OF TREATMENT ?

The only forms of trade wastes which are difficult of treatment, I should say, would be the wastes from the bye-product works, which are supposed to contain soluble cyanides, which may be inimical to fish and plant life. At each of our bye-product works there is a professional chemist engaged, and he should be able to state the system of purification most applicable to the wastes.

(d) WHETHER THE CONDITION OF THE RIVERS IN THE COUNTY OF GLAMORGAN IS IMPROVING ?

The condition of the rivers in Glamorgan is undoubtedly improving, especially in regard to sewage and tinsplate works effluents.

All sewage disposal works, such as farms, bacterial tanks, etc., are visited by the County Inspector at least once quarterly, when samples of both the crude sewage and effluents are taken, and they are analysed and reported upon to the Sanitary Committee. If the purification appears inefficient, the District Council concerned is notified of the fact after the Quarterly Meeting of the Sanitary Committee.

This systematic and periodical inspection of the rivers and sewage disposal works, and the manufacturing industries in the County, together with the chemical analyses of the effluents obtained therefrom, is productive of much good.

I wish it to be understood, however, that our rivers are far from what they should be, and might be, if our powers were made more efficient.

(e) WHETHER YOU CONSIDER THAT THE LAW SHOULD BE ALTERED IN REGARD TO THIS MATTER ?

Yes, I consider that the Rivers Pollution Prevention Acts should be amended so as to make it an offence to allow the discharge into any river or stream connected therewith of the wash-water from coal-washing machines, unless the same is passed through *efficient* settling ponds or tanks.

The above provisions are already included in Section 15 of the Mersey and Irwell Joint Committee Act, 1892, and similar provisions are found in Section 22 of the West Riding of Yorkshire Rivers Act of 1894.

FACTORIES AND WORKSHOPS.

Some years ago attention was called to the provisions of the Factory and Workshop Act, 1901, under which extended supervision of Workshops was imposed on Medical Officers of Health, and they were required to report upon them annually. From the reports under review it is evident that some District Councils have regarded the new duties as important. For further particulars I would refer you to local summaries.

Underground Bakehouses.—Section 101, Factory and Workshop Act, 1901, enacts—That an underground bakehouse shall not be used as a bakehouse unless it was so used at the time of the passing of this Act, and those in use at the time of the passing of this Act shall not continue to be used after 1st January, 1904, unless certified by the District Councils to be fit for that purpose.

Factory and Workshop Act, 1907.—This is an Act to amend the Factory and Workshop Act, 1901, with respect to Laundries, and to extend that Act to certain Institutions, and to provide for the inspection of certain premises.

MIDWIVES ACT, 1902.

At the close of the year 1908, there were 554 Midwives certified under the Act practising within the area of the County Supervising Authority. Of these, 487 were certified as being in *bona fide* practice for one year prior to the passing of the Act, and the remaining 67 on the grounds of holding the following certificates of training in Midwifery :—

Queen Charlotte's Hospital	5
Obstetrical Society of London	19
Glasgow Maternity Hospital	1
Central Midwives Board (by examination)	42

There are also some 60 uncertified Midwives practising in the County at present, and they can continue to do so until April, 1910, after which no woman shall habitually and for gain attend women in childbirth otherwise than under the direction of a qualified medical practitioner unless she be certified under the Act.

With the present facilities for training given by the Glamorgan County Council to pupil Midwives, there should be a sufficient number of trained women to take the place of those giving up work as time goes on, but a scarcity may be anticipated in the more rural and thinly populated Districts, where there are not sufficient cases to ensure a living to a woman who is entirely dependent on her work. The fees obtained in some of these Districts vary from five to ten shillings a case, and many of the Midwives attend fewer than 20 cases in a year.

It is in Districts such as these that difficulties must arise if the Act is properly enforced.

District Nursing Associations find that the fees obtained from Midwifery cases attended by a Nurse have to be supplemented by voluntary contributions in order to maintain her.

Nurse M. Evans, London Obstetrical Society, has carried on her work of inspection during the year under the supervision of the Executive Officer.

During the year 908 inspections of the midwives' books and appliances were made, and several of their patients were also visited.

Special investigations were also carried out by the Executive Officer.

MIDWIVES—PARTICULARS OF INSPECTION.

TABLE XXI.

Number of Inspections.	Number Trained.	Wearing Washable Dresses.	Disinfectants.	Record Book.	Book of Rules.	Case Book.	Bags of Appliances.
91	91	91	91	91	91	91	91
718	..	718	718	718	718	718	718
38	..	38	38	38	38	38	..
14	..	14	14	..	..	..	14
11	..	11	11	..	..	..	..
36	(uncertified)						
908	91	872	872	847	847	847	823

From the above Table it will be seen that the majority of the Midwives have the necessary books and appliances, and comply with the Rules of the Central Midwives Board. The number of illiterate Midwives is decreasing, but there are still several who have to depend on some one else to do the written part of their work.

During the year, the returns sent by Midwives to the Local Supervising Authority, as required by the Rules laid down by the Central Midwives Board, were as follows :—

Notification of Still Births	..	..	..	..	..	..	..	..	128
Records of sending for Medical Help	..	..	..	..	..	..	..	..	327
Notification of the death of the child before the arrival of a medical practitioner	..								7
„ „ mother	..			..	..	..	..	..	—
Total	..	..	..	..	..	..	..	..	462

The Local Supervising Authority now pays a fee of 2s. 6d. for each case of Puerperal Fever notified to them by the District Medical Officers, and 34 cases were notified in this way. All the cases thus notified were investigated, and the midwife in attendance on each case suspended from attending further cases until she was thoroughly disinfected.

Each of the cases notified was investigated with a view of tracing the source of infection, and the midwife in attendance was suspended from practice until she had been thoroughly disinfected.

A few complaints have been received, but no cases of malpractice, negligence, or misconduct of sufficiently serious a nature to report to the Central Midwives Board has occurred. The complaints received were investigated, and where necessary the midwife was suspended until she had complied with the Rules of the Central Midwives Board and the instructions of the Executive Officer.

DAIRIES, COWSHEDS, AND MILKSHOPS.

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.

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 the lighting, ventilation, cleansing, minimum cubic space per cow, and the water supply, etc., of such premises. A register should be kept of dairies and milkshops in each District. Regulations have been made by all District Councils.

For the very scant information contained in most of the local reports, I would refer you to the District summaries. It is important to bear in mind that :—

- (1) All cowsheds should be cleansed once daily at least.
- (2) They should be limewashed at least twice a year ; and that
- (3) The minimum cubic space per cow in Urban Districts should be from 600 to 800 cubic feet.

With the improvement of the health of the cattle, the quality of the milk (the food supply of infants) would improve, and this would help to decrease the sustained high infant mortality, which has so long characterised Glamorgan.

The report of the Royal Commission appointed to inquire into the administrative procedures for controlling dangers to man through the use as food of the meat and milk of tuberculous animals, was presented to Parliament in 1898. So as to ensure the freedom of milk from tuberculous elements, they recommend that (a) notification of every disease of the udder be made compulsory on the owners of all cows, whether in private dairies or those in which the milk is offered for sale; (b) Local Authorities (which have not done so already) should be required to adopt and enforce regulations as to cowsheds, dairies, etc.; (c) no cowshed, byre, or shippon, other than those already registered, should be permitted in Urban Districts, within 100 feet of any dwelling-house. The following is also a very important recommendation, viz.:—"That the condition of the attached cowsheds that shall warrant the registering of a dairy in a populous place, whether technically Urban or Rural, in future shall include the following—(1) an impervious floor; (2) a sufficient water supply for flushing; (3) proper drainage; (4) a depôt for the manure at a sufficient distance from the byres; (5) a minimum cubic space as regards such byres of from 600—800 for each adult beast, varying according to the average weight of the animals; (6) a minimum floor space of 50 feet to each adult beast; and (7) sufficient light and ventilation. As regards these cubic contents, such space per cow should be provided as will, in view of the surrounding circumstances, secure reasonable ventilation without draught."

As far as I have been able to ascertain, regulations under the Dairies, Cowsheds, and Milkshops Order, 1885, have been framed in all the Districts. Whether these regulations are enforced or not I am unable to say definitely, as the information contained in the District reports under this head is very meagre.

As regards the veterinary inspection of cattle, I am unable to speak authoritatively, but I have reason to believe that this is not carried out systematically—if at all—in any of the Districts.

MILK AND DAIRIES BILL.

The main objects of this Bill, which was framed by the Right Hon. John Burns, as set out in the Memorandum, are for:—

- (1) The more effective registration of dairies and dairymen.
- (2) The inspection of dairies and the examination of cows therein.
- (3) The prohibition of the supply of milk from a dairy where such a supply has caused or would be likely to cause, infectious diseases, including tuberculosis.
- (4) The prevention of the sale of tuberculous milk.
- (5) The regulation of the importation of milk so as to prevent danger to public health arising therefrom.
- (6) The issue of regulations for securing the supply of pure and wholesome milk.
- (7) The establishment by Local Authorities in populous places of milk depôts for the sale of milk specially prepared for infants.

The provisions as to registration supersede the provisions as to the registration of dairies contained in the Contagious Diseases (Animals) Acts and the Orders made thereunder.

The provisions as to the inspection of dairies and the prohibition of the supply of milk reproduce, with amendment, Section 4 of the Infectious Diseases Prevention Act, 1890, Section 71 of the Public Health (London) Act, 1891, and the model milk clauses incorporated in many local Acts.

The clause as to the prevention of the sale of tuberculous milk is also taken from the model milk clauses, but the scope of the enactment is somewhat extended.

The Board of Agriculture and Fisheries will, in connection with this Bill, issue an Order under the Diseases of Animals Act, 1894, dealing with the notification of tuberculosis in cattle, and the inspection, examination, detention, isolation, and slaughter of tuberculous cattle and the giving of compensation in appropriate cases.

INSPECTION OF MEAT AND OTHER ARTICLES OF FOOD.—THE VETERINARY INSPECTION OF DAIRY CATTLE.

In order to ascertain precisely what was being done in this connection I circularised each District Medical Officer of Health in the County. The queries are given below, and the replies to them have been tabulated and printed in my quarterly report for September, 1907 :—

I.—Inspection of Meat and other Articles of Food.

- (a) Is the inspection of meat and other articles of food carried out in your District ?
- (b) If so, to what extent, and in what manner ?
- (c) Do any of your Inspectors hold any special qualification for this purpose ? If so, state particulars thereof.

II.—Veterinary Inspection of Dairy Cattle.

- (a) Is there any systematic inspection of dairy cattle undertaken in your District ?
- (b) If so, by whom, and how often ?
- (c) Have you ever taken action under Sec. 4, Infectious Diseases Prevention Act, 1890 ? If so, under what circumstances.

PROPOSED CLASSES FOR THOSE DESIROUS OF QUALIFYING AS "INSPECTORS OF MEAT AND OTHER FOODS."

At a meeting of the South Wales and Monmouthshire Centre of the Sanitary Inspectors Association of Great Britain, held on the 7th November, 1908, the question of the desirability of establishing centres for instruction for those anxious to qualify as "Inspectors of Meat and Other Foods" was raised, and this evoked considerable discussion.

It was suggested by a member that as the Glamorgan County Council contributed liberally towards securing the training of those desiring to become midwives, it would be desirable if that body were approached with a view to the formation of classes for those wishing to become "Inspectors of Meat and Other Foods," at convenient centres in the Administrative County of Glamorgan. The suggestion was well received, and it was unanimously resolved that a deputation be formed, consisting of some half-a-dozen members, to wait upon the Chairman of the Education Committee of the Glamorgan County Council with a view to soliciting his assistance and that of the Education Committee with regard to the establishment of Classes for preparing Meat Inspectors, &c., in the Administrative County of Glamorgan.

As President of the Centre, I undertook to introduce the deputation. The deputation was well received by Dr. T. H. Morris, Chairman of the Education Committee, Alderman W. Llewellyn, and Councillor W. Howell, the importance of the subject being fully recognised; but it was pointed out by the Chairman that Classes could not be established for any particular class of individuals, *e.g.*, Sanitary Inspectors in office, but that if the Classes were started they would have to be open to all those eligible to attend them.

It was pointed out to the deputation that the local Classes would have to be supplemented by at least a three weeks' course at an abattoir, such as the Islington Cattle Markets, where daily practice could be obtained in actual meat inspection and in the recognition of fresh morbid specimens of both meat and fish, such specimens not being obtainable locally. Alderman W. Llewellyn said that he was quite in sympathy with the movement in what he considered was a very important matter.

On the recommendation of the Chairman, it was decided that the County Medical Officer be asked to prepare and submit a suitable scheme to the Chairman of the Education Committee.

There are some 50 Sanitary Inspectors in the Administrative County of Glamorgan, nearly all of whom possess the "Inspector of Nuisances" Certificate of the Royal Sanitary Institute; yet it is a significant fact that only two of these possess the Certificate of the Royal Sanitary Institute for "Inspectors of Meat and Other Foods," and this through no fault of their own. Under the circumstances, there is every reason to believe that much diseased and unsound meat and other articles of food is exposed for sale and allowed to pass. Through the Inspector's lack of technical knowledge he is usually unable to recognise disease. I have long felt, and often reported upon, the inadequacy or inefficiency of the inspection of meat and other foods as now carried out in the County. Indeed, District Councils, and even the Inspectors themselves, are now realising their helplessness in this respect, and I feel sure that much suffering is undoubtedly brought by the indiscriminate sale and consumption of such food. I therefore deem it most desirable that each Sanitary Inspector in the Administrative County, who already holds the Inspector of Nuisances Certificate of the Royal Sanitary Institute (this Certificate being necessary before a candidate is allowed to sit for the Meat Inspector's Certificate) should also possess the Certificate qualifying as Inspector of Meat and Other Foods. In this connection I would point out that the necessary training is not at present available in this or any other County, unless such assistance is rendered by such a body as the Glamorgan Education Committee, and it is for this reason the Committee have been approached by the South Wales and Monmouthshire Centre of the Sanitary Inspectors Association of Great Britain.

The following scheme was submitted:—

- (a) In the first place, there must be paid teachers and teaching and demonstration centres, and, the subject being essentially a practical one, the instruction, both lectures and demonstrations, must be given in a public abattoir.

- (b) With regard to the number that would attend this Course, I feel sure that all the qualified Sanitary Inspectors who hold office in the Administrative County, together with those who do not hold office, would attend. I think it can be safely stated that at least 20 persons, to begin with, would be able to get leave of absence to attend this Course.

I would suggest Pontypridd Public Abattoir as the most suitable place where instruction may be given, because of its being accessible to the majority of the Districts in the County.

The Course should consist of some 12 lectures, these lectures to be delivered once a week, to be followed by practical demonstrations in the abattoir on the same afternoon.

These lectures should commence about 15 weeks before the date of the Royal Sanitary Institute's examination, which takes place on the 21st and 22nd May, and it would be necessary that the last three weeks or so should be at some big centre, *e.g.*, the Islington Slaughter Houses and the Billingsgate Fish Market, London, where daily demonstrations and practical inspections could be carried out under the superintendence of the Veterinary Inspector to the London County Council.

I estimate the cost of such a Course to be as follows :—

	£	s.	d.
Instruction by Veterinary Inspectors (at County Centre)	20	0	0
(plus out-of-pocket expenses)			
Train-fare of 20 students at an average of 6s. per head per lesson	72	0	0
Return rail-fare to London of 20 students	25	10	0
Allowance for three weeks' stay in London at 30s. per week each	90	0	0
Veterinary Inspector's Fees in London	20	0	0
	<u>£227</u>	<u>10</u>	<u>0</u>

The County Medical Officer having been requested to draw up a syllabus of instruction for the proposed Classes submitted the following, which was approved, and the Sub-Committee directed that it be submitted to the Board of Education for their approval.

SYLLABUS OF COURSE OF INSTRUCTION FOR INTENDING CANDIDATES FOR THE EXAMINATION FOR INSPECTORS OF MEAT AND OTHER FOODS.

Signs of health in animals (both before and after slaughter) intended for the food of man.

Symptoms in the living animal and the effect upon the flesh, organs, &c., of the usually occurring diseases, viz. :—Anthrax, Foot and Mouth Disease, Tuberculosis, Actinomycosis, Hog Cholera, Hydatid Cysts, and the Parasitic Diseases of Swine, &c., &c.

Tuberculin, Mallein, and other diagnostic tests, method and precautions to be observed in their application.

The names and situations of the organs of the body in animals.

The distinction between the parts and visceral organs in different domestic animals.

Size, weight, and form of the organs of the Ox, Cow, Horse, Sheep, Pig, Calf, Rabbit, Cat, Dog. Their normal appearance and when affected by various diseases, parasitic or otherwise.

Lymphatic Glands—their appearance when normal and diseased, their function and position.

Trade joints and the lymphatics they contain.

The appearance and character of fresh meat, organs, fat, blood, fish, poultry, milk, fruit, vegetables, tea, coffee, cocoa, condiments. Adulterants and the common tests of the same.

Tinned foods—method of preparation, and tests as to soundness.

The hygiene of byres, lairs, cowsheds, and slaughter houses, and all places where animals destined for the supply of food are kept.

The hygiene of markets, dairies, and other places where food is stored, prepared, or exposed for sale.

Practical methods of stalling and slaughtering animals, preserving and storing meat and other foods.

Legislation affecting the above, *e.g.*, Public Health Act, 1875, Public Health Amendment Act, 1890, Town Improvements Clauses Act, 1847, Town Police Clauses Act, 1847, Dairies, Cowsheds, and Milkshops Orders, Infectious Diseases Prevention Act, 1890, Public Health (London) Act, 1891, Public Health Acts Amendment Act, 1907, Sale of Food and Drugs Acts, Margarine Act, Sale of Horseflesh Act, Model Bye-laws of the Local Government Board, Orders of the Board of Agriculture, &c.

SEIZURE AND CONDEMNATION OF TUBERCULOUS MEAT.

This subject has been referred to in detail in my Annual Report for 1907.

PUBLIC HEALTH LABORATORY.

This Laboratory was established by the Glamorgan County Council in 1899, but very soon afterwards it became under the control of a Joint Committee, consisting of members of the Health and Education Committees of the Corporation of the City of Cardiff and of the Glamorgan County Council.

The Medical Officers of Health of the City of Cardiff and of the Glamorgan County Council respectively act as Directors of the Laboratory, having the use of it for any bacteriological or chemical investigation connected with their administrative work.

The systematic work carried out here, consisting of the regular chemical and bacteriological examination of all public water supplies, of samples of food, milk, meat, etc., and of specimens sent by medical men, is of the greatest importance and utility to the sanitary welfare of the City and the County. The special investigations undertaken, more particularly those relating to some cases of plague and suspected plague, anthrax, etc., have been of great practical value. The scheme by means of which Medical Practitioners in the County, on payment of a small fee, in cases of suspected Typhoid Fever, Diphtheria, Tuberculosis, etc., can have made an examination of blood or other material from patients believed to be suffering from these diseases respectively, has been successful, but not to the extent I had anticipated.

I have received from many Medical Officers of Health and others testimony of their appreciation of work undertaken, and I have reason to believe that the ravages and spread of infectious diseases have been frequently prevented by the aids thus afforded.

Below is given a detailed account of all the work carried out at the Laboratory during the year by H. A. Schölberg, M.B., D.P.H., Bacteriologist, and J. H. Sugden, M.Sc. (Vict.), F.I.C., Assistant Bacteriologist and Chemist.

TABLE XXII.

SPECIMENS EXAMINED :—

Suspected Diphtheria	477
Suspected Typhoid Fever	316
Sputum for Tubercle bacilli	266
Sputum—Notified Phthisis	82
Pus Examinations	43
Diseased Meat	23
Milk Examinations	18
Anthrax	19
Other Examinations	13
	<hr/> 1,257

CHEMICAL EXAMINATIONS :—

Urine Analyses	82
Milk (Unofficial Samples)	117
Other Examinations	31
	<hr/> 230

SAMPLES OF WATER, SEWAGE, AND EFFLUENTS.

DRINKING WATER :—

Bacteriological Examinations	239
Chemical Examinations	157
	<hr/> 396

SEWAGE AND SEWAGE EFFLUENTS :—

Chemical Examinations (Sewage and Effluents)	90
Chemical Examinations (Trade Effluents)	66
	<hr/> 156
Total	<hr/> 2,039

TABLE XXIII.

Comparison of the records for 1907 and 1908 :—

Nature of Examination.	1907.	1908.	Increase.	Decrease.
Suspected Diphtheria	527	477	—	50
Suspected Typhoid Fever	448	316	—	132
Alternative Agglutinations	553	—	—	553
Sputum for Tubercle Bacilli	248	348	100	—
Waters—Bacteriological	296	239	—	57
„ Chemical	190	157	—	33
Diseased Meat	11	23	12	—
Anthrax	19	19	—	—
Milk Examinations	63	135	72	—
Sewages and Effluents.. .. .	158	156	—	2
Other Examinations	172	169	—	3
	2,685	2,039	184	830
			Decrease—646	

The figures submitted in Table XXIII. show a decrease of 646 for the year 1908. This is due to the decrease in the number of specimens of suspected Diphtheria and Typhoid Fever cases and Alternative Agglutinations sent for examination.

Table XXIV. shows the contributions of Cardiff and the County towards the three infective diseases : Diphtheria, Typhoid Fever, and Pulmonary Tuberculosis.

TABLE XXIV.

Source.	Name of Examination.	No. of Positive Results.	No. of Negative Results.	Total.	Percentage of Positive Results.
Cardiff	Suspected Diphtheria	25	123	148	16·9
County	„ „	75	254	229	22·8
Cardiff	Suspected Typhoid	39	29	68	57·3
County	„ „	143	105	248	57·6
Cardiff	Suspected Pulmonary Tuberculosis	119	156	275	43·3
County	„ „ „	18	55	73	24·6

Table XXV. gives the number of specimens received from Cardiff and the County respectively. The samples from Swansea and Ebbw Vale are included in the County figures, and amount to 90 (75 Specimens and 15 Waters); Sewages, Effluents, and Trade Effluents are grouped under one heading—Effluents; and Specimens include examinations other than those grouped under Waters and Effluents.

TABLE XXV.

Source.	Waters Examined.	Effluents Examined.	Specimens Examined.	Total.
Cardiff	143	..	769	912
Administrative County	253	156	718	1,127
	396	156	1,487	2,039

TABLE XXVI.

Classes held in 1908 :—

Class.	When held.	Lecturer.	No. of Students.
Bacteriology—Lectures and Practical ..	January to March ..	Mr. Schölberg	5
D.P.H. Revision Class—Bacteriology ..	November .. .. .	„ .. .. .	..
Clinical Bacteriology	June to July .. .. .	„ .. .. .	..
Chemistry—Lectures and Practical ..	October to December	Mr. Sugden	5
D.P.H. Revision—Chemistry	November .. .. .	„ .. .. .	..
D.P.H. Outdoor Sanitary Work ..	Six months	Dr. Walford and Dr. Williams	6
Sanitary Inspectors' Classes	October to December	„	10

The teaching work of the Public Health Laboratory has been successfully carried on during the year 1908.

With regard to the number of Specimens sent by Medical Practitioners, the figures submitted show a considerable decrease on that recorded in the year 1907.

In addition to the work above stated, what may be considered the more important part of the Laboratory work, the Public Health teaching portion, has been fully maintained. The City and County have freely availed themselves of the opportunity of securing technical information on many questions of great importance.

HOUSING OF THE WORKING CLASSES.

Buildings unfit for Human Habitation.—Section 30 of the Housing of the Working Classes Act, 1890, Part II., reads :—“ It shall be the duty of the Medical Officer of Health of every District to represent to the Local Authority of that District any dwelling-house which appears to him to be in a state so dangerous or injurious to health as to be unfit for human habitation.”

Section 32 *ibid.* reads :—" It shall be the duty of every Local Authority to cause to be made from time to time inspection of their District, with a view to ascertain whether any dwelling-house therein is in a state so dangerous or injurious to health as to be unfit for human habitation, and if on the representation of the Medical Officer, or of any officer of such Authority, or information given, any dwelling-house appears to them to be in such state, to forthwith take proceedings against the owner or occupier for closing the dwelling-house under the enactments set out in the Third Schedule to this Act."

A considerable activity has been shown generally in improving the houses and sanitary surroundings of the working classes. Nearly all the reports under review refer to the action taken under Part II. of the Housing of the Working Classes Act, 1890, and as far as can be gleaned from the reports the number of houses newly built, inspected, condemned, closed, repaired, rebuilt, etc., are tabulated below :—

TABLE XXVII.

DISTRICT.	New Houses.	No. Inspected.	No. Represented as Unfit.	No. Closed.	No. Repaired.	No. Demolish'd.	No. Rebuilt.	REMARKS.
URBAN.								
Aberavon Borough ..	..	..	..	2	10	..	..
Aberdare	299	798	..	16	16	..	..	Four " back-to-back " houses have been rendered through and repaired.
Barry .. ..	..	855	..	..	..	..	..	Nos. 1-4 Water Street, three dwellings on the Old Bridge, &c., should be closed.
Bridgend	33	..	..	..	..	..	..	There is a number of old properties in the District.
Briton Ferry ..	9	..	..	..	..	7	3	Considerable building operations in the Town Ward.
Caerphilly .. ..	..	..	..	..	..	..	..
Cowbridge Borough	..	..	..	..	..	..	..
Glyncorwg	103	..	5	1	..	..	..
Maesteg	138	..	..	..	8	..	..	Notices have been served <i>re</i> Brick Row ; work in progress.
Margam .. ..	..	..	..	..	..	..	..
Mountain Ash ..	38	1,800	..	..	..	..	..
Neath Borough ..	65	..	..	..	..	..	..	Some 16 houses (named) are named as " unfit."
Ogmore and Garw ..	82	..	..	..	..	..	..
Oystermouth ..	385	..	..	..	..	..	..
Penarth	441	..	..	..	..	..	..
Pontypridd	201	5,442	..	..	..	..	..
Porthcawl	43	..	..	..	..	..	..
Rhondda .. ..	..	..	..	..	..	..	..
RURAL.								
Cowbridge	127	..	..	..	..	..	..
Gelligaer and Rhigos	315	1,808	5	3	..	..	2	
Gower .. ..	..	..	..	..	..	..	..
Llandaff and Dinas Powis	246	200	..	..	..	..	..
Llantrisant and Llantwit Fardre	105	519	..	2	1	..	..	There are some 150 houses in course of construction.
Neath .. ..	..	..	..	..	..	..	..
Penybont	146	344	..	7	..	..	14	
Pontardawe	118	..	..	4	..	..	..
Swansea Rural :								
Llandilo-Talybont	..	995	31	..	..	3	21	
Llangyfelach Division	..	304	13	1	..	..	11	

The Medical Officer of Health for Aberavon writes :— " In my last five Annual Reports, I have urged the Corporation to insist on the concreting of the floors of new buildings A house built on a damp sub-soil without such protection cannot escape a ground air charged with moisture, which not only makes the house damp, but fosters such diseases as Phthisis, Diphtheria, Rheumatism, Chronic Bright's Disease, and Zymotic Diarrhœa of Infants."

The Medical Officer of Health for Aberdare writes :—" At the commencement of the year the Local Government Board held an Inquiry in reference to the application of the Council to borrow £10,000 for the erection of 50 dwelling houses, and as a result sanction was given. Tenders have since been accepted for the erection of 50 houses, 28 of which are to be built at Cwmbach, and 22 at Aberaman, but no contract has yet been entered into. During the year, 798 houses were inspected by the ' house-to-house ' system, and in addition 378 houses where infectious diseases existed, making a total of 1,176 houses. 299 new houses were certified for habitation during the year."

The Medical Officer of Health for Bridgend writes :—" . . . 33 new houses have been erected, and eight are in course of erection. None were closed as ' unfit.' "

The Medical Officer of Health for Briton Ferry writes :—" . . . Plans for only nine new dwellings were submitted during the year, yet there are a number of cases of overcrowding in the District, and many old properties in disrepair, damp, and far from desirable dwellings. The Housing Scheme as prepared by the Council's Surveyor is a good, practical, and popular one, and will undoubtedly be the means of bringing about a general improvement in the housing of the District. Until more dwellings are erected it is most difficult to deal with the old and defective properties."

The Medical Officer of Health for Caerphilly writes :—" *Town Ward*.—There is still a considerable amount of building going on in the neighbourhood of Caerphilly, and there is also evidence of empty houses. Whether this is an indication that it is overdone remains to be seen.

Llanbradach.—. . . Houses are being built, and taken up almost as quickly as they are completed.

Nelson.—. . . . With the building that is carried on there, it is most vital for the welfare of the inhabitants that some scheme should be formulated for doing away with what must be regarded as an intolerable nuisance, and a positive danger to the public health. Senghenydd and Aber are still growing, and various improvements have been effected, especially as regards public street works. In the Taffs Well Ward no material change has occurred in the development of this Ward. Some additional houses have been built, and these have been quickly tenanted."

The Medical Officer of Health for Glyncorwg writes :—" During the year 103 new houses were built, thus bringing the total number of inhabited houses up to 1,054, giving an average of 5·9 persons per house. Houses of the working class type are still scarce, and cases of overcrowding are occasionally met with. During the year five notices were served on owners to have their houses put in a fit state of habitation or be closed ; one house has been permanently closed, notices on the others have not yet expired."

The Medical Officer of Health for Maesteg writes :—" . . . No action has been taken under Part I. of the Housing of the Working Classes Act, but under Part II. action was taken with regard to several small collections of houses. . . ."

The Medical Officer of Health for Mountain Ash writes :—" The house accommodation throughout the District is satisfactory."

The Medical Officer of Health for Neath Borough writes :—" This important matter still engages the earnest attention of the Streets Committee. Good progress is being made with the erection of the hundred municipal houses contemplated in the Housing Scheme. The wisdom of proceeding slowly in this matter becomes more apparent every day. The number of houses built and completed by private enterprise in 1908 was 65. There is still need, as I have often pointed out, for dealing more fully with the wants of the workman whose wages are not so high as those of the artisan. . . ."

The Medical Officer of Health for Ogmore and Garw writes :—" The Council has not taken any action under the Workmen's Dwellings Act—but I find that private enterprise is coping very well with the housing requirements."

The Medical Officer of Health for Oystermouth writes :—" The housing accommodation for the working classes is the least adequate, and owing to the increased cost of labour and of land, it is becoming more difficult to build suitable houses of this class, with sufficient open space around, to fit them for their inhabitants. One batch of 15 houses in Village Lane remains condemned, four closed from lack of sanitary accommodation and repairs, and a supply of cheap houses in their stead for poor people is a question worthy of attention. . . ."

The Medical Officer of Health for Pontypridd writes :—" Building operations were busily proceeded with during the year. In all, some 201 new dwellings became inhabited. Though no new colliery developments took place in the District during the past year, brisk demand still continues to exist for workmen's cottages"

The Medical Officer of Health for Cowbridge Rural writes :—" The houses of the working classes throughout the District has undergone a great change for the better of late years. The old ones have been, to a large extent, put into a fair condition of repair, whilst others have been demolished or fallen down, and replaced by new ones. All new houses for many years past have been substantially built and provided with good drainage and water supply, and in the case of eight of the colliers' houses at Llanharan, have also been provided with baths. . . ."

The Medical Officer of Health for Gelligaer and Rhigos writes :—" Proceedings were taken under the provisions of this Act in respect of five houses which were reported by me as unfit for human habitation. Of these, three were closed, and two were structurally altered or rebuilt."

The Medical Officer of Health for Llantrisant and Llantwit Fardre writes :—" There are still many houses in the District that are unfit for human habitation by reason of deficiency of light and air, dampness, want of outlet at the backs, general dilapidation and want of adequate drainage."

The Medical Officer of Health for Penybont writes :—" 146 houses have been erected and occupied in the District during 1908 ; 93 were in course of construction ; 14 were rebuilt ; seven houses were closed as unfit for occupation, and 11 were vacant."

The Medical Officer of Health for Pontardawe writes :— "No action has been taken during the year under Part I. of the Housing of the Working Classes Act. The Local Government Board has given you its sanction for adopting, with the exception of a few sections, the Public Health Acts Amendment Act, 1907, and a judicious administration of this Act will meet the requirements. Four houses were closed as unfit for human habitation. In the year 1906 the Council made an application to the County Council for a certificate to enable them to put in force Part III. of the Housing of the Working Classes Act throughout the District. A Committee of the County Council reported that there was no case for putting this Part in force in the District."

The Medical Officer of Health for Llandilo-Talybont writes :—" . . . The erection of new houses goes on at a rapid rate, over 1,000 houses having been erected during the last five years, but still the supply is quite inadequate to the demand owing to the steady development of industries; and the number of wage earners who lodge in this Division, and whose families live elsewhere, is very large. 31 houses were reported to your Council as unfit for habitation, and of these three have been demolished and 12 rendered fit for habitation, whilst nine are in process of repair, and seven have not yet been attended to. No legal proceedings were taken during the year, a very uncommon state of things in this Division."

LOCAL GOVERNMENT BOARD INQUIRIES.

The following Local Government Board Inquiries were held during the year 1908, and as they are indications of sanitary progress, I herewith insert a list of them.

Date of Inquiry. 1908.	Applicant.	Amount.	Purpose.
Jan. 29	.. Maesteg Urban District Council	.. £580	.. Relaying portion of main intercepting sewer.
.. 30	.. Bridgend Urban District Council	.. £1,450	.. Works of sewerage.
.. 31	.. Aberdare Urban District Council	.. £10,000	.. Provision of houses for persons of the working class.
Feb. 19	.. Glamorgan County Council	.. £800	.. Isolation Hospital belonging to Bridgend Joint Hospital Committee.
.. 21	.. Glamorgan County Council	.. £1,000	.. Isolation Hospital belonging to the Ogmore and Garw Hospital Committee.
.. 26	.. Oystermouth Urban District Council	.. £9,275	.. £2,585 for street improvements; £6,690 for works of sewerage.
.. 27	.. Gower Rural District Council	.. £2,350	.. Improvement of highways.
Aug. 6	.. Barry Urban District Council	.. ..	.. Furnishing new Accident Hospital.
.. 25	.. Swansea Rural District Council	.. £13,000	.. Sewerage and sewage disposal for Sketty.
.. 26	.. Llandaff and Dinas Powis Rural District Council	.. £6,481	.. Sewerage and sewage disposal works for the Parish of Llandaff.
Sept. 22	.. Penybont Rural District Council	.. £6,050	.. £2,832 for water supply; £3,668 for execution of certain works.
Nov. 24	.. Pontardawe Rural District Council	.. £14,000	.. Sewerage and sewage disposal for the village of Clydach.

SANITARY LEGISLATION OF 1908.

PUBLIC HEALTH ACT (8 Edw. 7, Chap. 6).—The object of this Act is “to make the provisions of the Public Health Act, 1875, with respect to the provision and regulation of markets, applicable in Rural Districts.” This Act, which consists of but two Sections, came into force on August 1st, 1908.

SMALL HOLDINGS AND ALLOTMENTS ACT (8 Edw. 7, Chap. 36).—This Act consolidates the enactments with respect to Small Holdings and Allotments in England and Wales. Part I. (Sections 1 to 22) relates to small holdings, and empowers County Councils to put its provisions into operation if they are of opinion that there is such a demand for small holdings in their respective Counties as justifies them in doing so.

Sections 23-27 (Part II.) relate to allotments, and empowers Town Councils, Urban District Councils, and Parish Councils to provide allotments not exceeding one acre in extent for the labouring classes, and in default of action by District or Parish Councils it is the duty of the County Councils to act. This Act came into operation on January 1st, 1909.

REGULATIONS AS TO FOOD.—In pursuance of the Public Health (Regulations as to Food) Act, 1907, the Local Government Board have made two sets of Regulations, one called (a) the “Public Health (First Series: Unsound Food) Regulations, 1908,” and the other (b) the “Public Health (Foreign Meat) Regulations, 1908.” These Regulations came into force on January 1st, 1909.

(a) The Regulations relating to *Unsound Food* were framed with the object of securing that articles of food unsound, unwholesome, or unfit for human consumption, and which, as part of the cargo of a ship, are brought to a place in this country, either as a place of destination, or as a place of deposit for transmission to a place of destination elsewhere in the United Kingdom, shall be dealt with at the port of discharge. The Regulations are very comprehensive, but, of course, concern Port Sanitary Authorities and the Officers of Customs.

THE PUBLIC HEALTH (TUBERCULOSIS) REGULATIONS, 1908.—These are Regulations framed by the Local Government Board in pursuance of powers vested in them by several Acts of Parliament with the object of checking the spread of pulmonary tuberculosis (“consumption”) throughout England and Wales. The Regulations, together with an accompanying circular, were received in the latter half of December, 1908, and consist of 13 Articles, with many sub-sections.

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, and in the order of the elevations at which they were taken, beginning at the lowest.

BARRY.

Taken at Canon Street, Barry.

Elevation, 87 feet.

Diameter of Funnel, 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	1·85	0·40	7th	12
February	2·32	0·95	16th	15
March	2·27	0·86	24th	18
April	2·44	0·72	29th	15
May	1·15	0·25	4th	15
June	0·16	0·09	11th	4
July	3·05	1·42	16th	9
August	4·32	1·02	27th	11
September	3·58	1·42	1st	16
October	4·17	2·51	19th	11
November	1·76	0·60	21st	10
December	2·36	0·28	17th	23
Total	29·43	2·51	19th	159

The following is the Rainfall at Biglis for the past 20 years—stated in inches :—

MONTH.	1889	1890	1891	1892	1893	1894	1895	1896	1897	1898	1899	1900	1901	1902	1903	1904	1905	1906	1907	1908
January ..	1·03	2·96	2·47	2·34	1·76	2·28	3·32	0·84	1·55	0·89	4·25	5·02	1·78	2·19	4·54	4·07	1·00	5·09	2·02	2·05
February ..	2·12	0·41	0·47	2·69	4·59	3·33	0·12	0·50	4·37	1·35	3·05	5·41	0·86	0·90	1·93	4·66	0·93	2·90	1·46	1·62
March ..	2·93	1·48	2·13	0·99	0·54	0·70	3·26	3·59	2·95	1·35	0·74	0·89	1·57	2·12	4·23	2·51	4·65	2·30	1·19	2·44
April ..	3·61	2·15	1·37	2·83	0·13	1·47	1·74	0·58	3·16	1·05	3·54	1·44	3·56	1·83	2·55	1·24	2·19	1·41	3·59	2·31
May ..	0·05	1·79	3·24	1·25	2·10	1·64	Nil.	0·18	0·83	2·60	1·78	1·29	0·59	2·78	2·53	2·65	0·13	3·66	2·16	1·02
June ..	0·50	2·69	1·55	1·73	0·56	2·52	1·27	2·04	2·60	1·12	0·93	1·74	2·72	2·70	2·79	0·67	3·47	2·13	3·07	0·28
July ..	2·66	3·45	2·67	1·98	4·76	4·04	4·35	1·39	1·24	0·70	2·83	1·01	2·28	2·00	4·73	4·61	1·70	0·84	2·58	2·78
August ..	3·66	3·19	7·47	3·87	2·09	5·33	3·79	3·33	6·48	3·40	1·77	3·18	2·86	3·28	5·18	3·16	3·32	2·83	3·13	4·29
September ..	1·96	1·12	3·26	3·86	2·47	2·57	0·80	7·29	4·80	2·35	2·55	0·82	3·01	2·91	2·80	2·87	1·41	1·14	0·82	4·39
October ..	2·96	1·97	5·75	2·31	5·74	4·40	4·71	3·89	1·27	5·46	2·83	5·53	2·86	3·00	8·96	2·08	1·91	5·59	5·61	2·96
November ..	1·91	3·85	4·34	2·52	2·08	4·70	3·39	0·68	1·53	3·47	2·19	5·03	0·89	3·89	2·49	3·11	3·68	3·55	2·24	1·34
December ..	3·09	1·36	6·54	3·10	3·08	3·87	3·72	4·90	4·44	3·02	2·55	5·29	5·63	3·23	3·36	2·66	1·96	2·20	5·86	2·44
Total ..	26·48	26·42	41·26	29·47	29·90	38·85	30·47	29·21	35·22	26·76	29·01	36·65	28·71	30·83	46·09	34·29	26·35	33·64	33·73	27·92

Average fall for 20 years—32·63 inches.

OYSTERMOUTH.

Taken at Newtown.

Elevation, 280 feet.

Diameter of funnel, 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	2·98	0·61	16th	15
February	3·14	1·31	16th	22
March	4·73	1·20	24th	20
April	3·28	1·45	29th	16
May	2·86	0·62	7th	19
June	1·15	0·54	1st	6
July	4·59	1·00	9th	10
August	4·83	0·97	26th	14
September	3·75	0·38	25th	22
October	2·71	1·10	20th	12
November	2·79	0·77	21st	11
December	6·24	0·70	8th	26
Total	43·05	1·45	29th	193

OYSTERMOUTH (SOUTHEND).

MONTH.	Fine Days.								Inches.
January	16	days	no	rain	fell	..	..	..	2·76
February	6	..	..	..	..	..	..	..	3·22
March	12	..	..	..	..	..	..	..	4·76
April	13	..	..	Snow	fell	23rd	and	24th	3·64
May	10	..	..	..	..	..	..	..	2·82
June	24	..	..	..	..	..	..	..	0·79
July	18	..	..	..	..	..	..	..	4·64
August	16	..	..	..	..	..	..	..	4·89
September	9	..	..	..	..	..	..	..	3·14
October	21	..	..	..	..	..	..	..	2·75
November	14	..	..	..	..	..	..	..	3·38
December	7	..	..	Snow	fell	30th	..	..	5·45
	166	..	..						42·24

ABERDARE.

MONTH.	Total Depth in inches.	Greatest Fall in 24 hours.		No. of Days on which 0·01 inches or more fell.
		Depth.	Date.	
January	4·58	0·84	15th	21
February	4·38	0·87	16th	23
March	6·47	1·04	30th	24
April	3·34	0·96	27th	20
May	4·32	0·96	14th	22
June	1·04	0·48	1st	8
July	4·07	1·18	16th	15
August	9·96	2·08	31st	18
September	3·79	0·64	19th	23
October	3·96	2·36	18th	15
November	4·59	0·93	21st	17
December	6·59	0·82	9th	29
Total	57·09	2·36	18th	235

LLANGYFELACH.

Taken at Glanravan, Morriston.

Elevation, 53·2 feet.

Diameter of funnel, 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	3·34	0·62	15th	14
February	3·45	1·11	16th	21
March	4·58	1·15	24th	20
April	2·67	1·05	29th	14
May	3·43	0·54	7th	20
June	1·20	0·31	11th	8
July	5·46	1·40	9th	14
August	5·90	1·38	11th	12
September	3·84	0·93	25th	23
October	2·43	0·73	20th	11
November	3·64	0·89	21st	16
December	7·06	1·22	15th	27
Total	47·00	1·40	9th	200

Average for 17 years, 46·99 inches.

LLANDILO-TALYBONT.

Taken at Penllergaer.

Elevation, 240 feet.

Diameter of funnel, 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	2·61	0·60	15th	12
February	3·35	0·95	16th	23
March	5·62	1·33	24th	18
April	3·59	1·31	29th	16
May	3·78	0·75	7th	22
June	1·12	0·30	11th	7
July	4·99	1·27	16th	15
August	6·23	1·65	31st	15
September	3·34	0·48	3rd	22
October	2·71	1·10	20th	12
November	3·40	0·86	21st	16
December	5·85	1·13	15th	27
Total	46·79	1·65	31st	205

Average annual rainfall at Penllergaer, 1898-1907—48·54 ins.

Greatest 61·84 ins. in 1903.

Least 39·27 ins. in 1902.

PONTARDAWE (EAST).

Taken at Ystalyfera.

Elevation, 240 feet.

Diameter of funnel, 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	6·36	1·46	16th	14
February	4·24	1·05	16th	21
March	5·40	1·20	5th	18
April	3·11	0·81	29th	18
May	4·51	0·74	5th	14
June	1·82	0·52	11th	7
July	7·69	2·13	9th	15
August	8·83	2·26	31st	12
September	4·46	0·60	25th	21
October	3·97	0·95	20th	10
November	5·19	0·84	24th	15
December	7·75	1·24	15th	25
Total	63·33	2·26	31st	190

PONTYPRIDD.

Taken at Maes-y-dderwen.

Elevation, 425 feet.

Diameter of funnel, 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	4·20	1·39	16th	15
February	2·93	1·06	16th	19
March	4·73	1·00	24th	18
April	3·60	1·19	27th	16
May	3·43	0·65	14th	20
June	0·77	0·30	11th	5
July	4·92	1·85	16th	13
August	6·49	1·85	27th	15
September	4·07	0·64	3rd	16
October	5·27	3·63	19th	11
November	2·67	0·55	12th	15
December	6·02	1·02	9th	26
Total	49·10	3·63	19th	189

TREHERBERT, RHONDDA.

Taken at Tynywaun Waterworks.

Elevation, 801 feet.

Diameter of funnel, 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	8·35	2·11	16th	18
February	5·55	1·44	16th	24
March	7·58	1·28	4th	23
April	4·55	1·13	27th	18
May	6·74	1·39	5th	20
June	1·75	0·60	13th	9
July	8·41	2·18	9th	13
August	10·36	2·56	31st	15
September	5·57	0·99	3rd	23
October	3·87	0·96	18th	16
November	5·62	0·93	21st	17
December	8·92	1·41	15th	27
Total	77·32	2·56	31st	223

MERTHYR.

Taken at Pentwyn Reservoir. Elevation, 1,120 feet above sea level.

MONTH.	Total Depth in inches.	Greatest Fall in 24 hours.		No. of Days on which 0·01 inches or more fell.
		Depth.	Date.	
January	5·40	1·42	16th	19
February	4·00	1·02	16th	23
March	6·79	1·16	5th	26
April	4·14	1·02	27th	20
May	5·00	1·14	5th	21
June	1·70	0·43	11th	11
July	6·37	2·06	9th	14
August	9·01	2·18	31st	16
September	3·95	0·79	3rd	25
October	5·18	3·20	19th	15
November	4·02	0·60	21st	16
December	6·51	0·67	15th	28
Total	62·17	3·20	19th	234

MERTHYR.

Taken at Lower Neuadd Reservoir. Elevation, 1,462 feet.

MONTH.	Total Depth in inches.	Greatest Fall in 24 hours.		No. of Days on which 0·01 inches or more fell.
		Depth.	Date.	
January	6·19	1·44	15th	19
February	4·64	1·23	16th	23
March	5·97	1·21	24th	25
April	4·22	1·13	27th	19
May	5·12	1·43	5th	18
June	2·54	0·69	3rd	11
July	7·65	2·43	9th	14
August	9·84	1·90	31st	16
September	4·57	0·73	3rd	23
October	4·99	3·15	17th	16
November	4·84	0·79	24th	16
December	6·81	0·74	15th	24
Total	67·38	3·15	17th	224

RHONDDA.

Taken at the Hospital, Ystrad. Elevation, 590 feet.

MONTH.	Total Depth in inches.	Greatest Fall in 24 hours.		No. of Days on which 0·01 inches or more fell.
		Depth.	Date.	
January	6·03	1·47	16th	12
February	4·27	1·75	16th	22
March	4·20	1·30	5th	13
April	3·96	1·14	27th	14
May	4·24	0·84	14th	16
June	0·95	0·30	11th	5
July	6·17	1·86	9th	13
August	7·78	2·06	31st	16
September	4·24	0·83	3rd	18
October	4·01	1·70	19th	12
November	4·58	0·83	12th	13
December	6·88	1·04	9th	25
Total	57·31	2·06	31st	179

BRITON FERRY.

Rain Gauge. { Diameter of Funnel 5 inches.
 Height of Top above Ground 1 foot.
 „ „ Sea Level 33 feet.

MONTH.	Total Depth in inches.	Greatest Fall in 24 hours.		No. of Days on which 0·01 inches or more fell.
		Depth.	Date.	
January	3·20	0·74	16th	12
February	3·28	1·08	16th	19
March	4·61	1·00	24th	16
April	2·72	0·95	29th	30
May	3·19	0·53	7th	17
June	1·02	0·29	11th	6
July	5·19	1·48	9th	12
August	4·77	1·42	31st	12
September	3·29	0·48	19th	19
October	2·41	0·38	14th	11
November	2·98	0·75	21st	12
December	5·93	0·70	9th	24
Total	42·59	1·48	9th	190

MARGAM.

Summary of Rainfall during the year.

								inches.
January	..	..	..	..	..	..	..	3·52
February	..	..	..	..	..	..	..	2·93
March ..	..	..	..	..	..	..	..	4·38
April ..	..	..	..	..	..	..	..	2·45
May ..	..	..	..	..	..	..	..	1·65
June ..	..	..	..	..	..	..	..	0·81
July ..	..	..	..	..	..	..	..	4·87
August ..	..	..	..	..	..	..	..	3·68
September	..	..	..	..	..	..	..	4·20
October	..	..	..	..	..	..	..	2·97
November	..	..	..	..	..	..	..	3·00
December	..	..	..	..	..	..	..	5·22
								—
								39·68
								—

The heaviest rainfall took place in December, when 5·22 inches fell.

CARDIFF.

Taken at the Llanishen and Lisvane Reservoirs, the Heath Filters, and Ely Pumping Stations.

MONTH.					At Llanishen Reservoir. Elevation 155 feet.	At Lisvane Reservoir. Elevation 150 feet.	At The "Heath" Filters. Elevation 132 feet.	At Ely Pumping Station. Elevation 53 feet.
January	..	..	..	..	2·71	2·80	2·84	2·73
February	..	..	..	..	1·94	1·83	2·82	2·53
March	..	..	..	..	3·12	3·00	3·27	3·11
April ..	..	..	..	..	2·70	2·75	2·73	2·70
May ..	..	..	..	..	2·03	2·13	2·06	1·93
June ..	..	..	..	..	0·51	0·57	0·41	0·36
July ..	..	..	..	..	3·04	2·90	3·20	3·02
August	..	..	..	..	5·71	5·34	6·65	6·89
September	..	..	..	..	3·50	3·44	3·07	3·48
October	..	..	..	..	3·24	3·21	2·86	3·42
November	..	..	..	..	1·46	1·34	1·69	1·77
December	..	..	..	..	3·91	3·76	4·67	4·20
Total					33·87	33·07	36·27	36·20

BARRY.

METEOROLOGICAL OBSERVATIONS, 1908.

MONTH.	BAROMETER.			THERMOMETER.							EARTH THERMOMETER.		HYGROMETER.		RAINFALL. Inches.	SUNSHINE. Hours.
	Inches.			Degrees.							Degrees.		Degrees.			
	Highest	Lowest.	Mean of Month.	Maximum.	Minimum.	Mean of Max.	Mean of Min.	Mean.	No. of Days at or below 32°	1 ft. Mean.	4 ft. Mean.	Dry Bulb Mean.	Wet Bulb Mean.			
January ..	30.20	28.90	29.86	53	20	40.19	33.54	36.87	12	35.70	39.51	37.86	36.58	1.85	69.1	
February ..	30.40	29.00	29.83	51	30	45.68	38.82	43.25	2	40.53	39.24	43.44	41.55	2.32	72.2	
March ..	29.90	28.90	29.56	52	32	44.67	36.35	40.51	4	39.03	39.00	41.12	38.90	2.27	106.5	
April ..	30.10	29.20	29.68	59	28	50.36	38.66	44.51	2	42.93	40.23	45.3	41.9	2.44	137.6	
May ..	30.20	29.10	29.67	70	43	60.90	49.70	55.36	..	54.09	43.90	55.7	52.2	1.15	194.1	
June ..	30.10	29.50	29.84	76	48	65.56	53.33	59.48	..	59.86	49.50	58.9	55.13	0.16	270.5	
July ..	30.20	29.30	29.79	80	53	67.96	56.74	62.35	..	63.77	53.48	62.48	58.35	3.05	232.9	
August ..	30.20	29.20	29.80	75	48	65.77	54.67	60.22	..	62.16	53.61	62.51	56.77	4.32	224.2	
September ..	30.00	29.40	29.75	71	40	59.93	51.46	55.70	..	54.1	49.06	56.20	53.53	3.58	126.5	
October ..	30.10	29.70	29.86	70	35	58.74	51.16	54.95	..	55.29	49.19	54.38	52.64	4.17	104.8	
November ..	30.10	29.30	29.77	55	34	50.26	44.10	47.18	..	46.16	45.46	47.23	45.40	1.76	79.5	
December ..	30.10	28.50	29.60	50	24	45.06	40.29	42.67	3	41.58	41.25	43.38	42.16	2.36	43.5	

Mean Temperature for 1908 = 50.67 degrees.

Mean Barometer .. = 29.75 inches.

Total Rainfall .. = 29.43 inches.

Total Sunshine .. = 1664.4 hours.

GAUGES AT NEUADD RESERVOIRS AND AT VARIOUS SELECTED SITES IN THE CATCHMENT AREA
NORTH OF THE RESERVOIRS.

TOTAL DEPTH IN INCHES.

MONTH	No. 2.	No. 3.	No. 3a.	No. 4.	No. 4a.	No. 5.	No. 6.	No. 7.	No. 8.	No. 9.	No. 10.	No. 11.
	600 yds. West of North end of Upper Neuadd 1993ft. above sea level.	North of Upper Neuadd on Mountain Slope East side of River 1843ft. above sea level.	North of Upper Neuadd on Mountain Slope East side of River 1843ft. above sea level. (Check Gauge.)	150 yds. East of Lower Neuadd Reservoir 1487ft. above sea level.	150 yds. East of Lower Neuadd Reservoir (Check Gauge.)	At North end of Upper Neuadd Reservoir near River on West side 1515ft. above sea level.	At foot of Brecon Beacon near River on West side 2099ft. above sea level.	North-West of Upper Neuadd on Mountain Slope 2107ft. above sea level.	North of Upper Neuadd near River on West side 1723ft. above sea level.	North of Upper Neuadd on Mountain Slope East side of River 1997ft. above sea level.	600 yards East of North end of Upper Neuadd 1700ft. above sea level.	230 yards East of North end of Lower Neuadd 1524ft. above sea level.
January ..	6.74	3.70	3.95	7.31	6.78	7.40	8.30	7.25	8.22	3.30	3.96	4.61
February ..	4.90	3.80	3.70	5.21	5.44	5.64	5.75	4.70	5.11	3.95	4.15	3.28
March ..	4.88	5.10	5.50	6.83	6.57	7.36	6.50	4.71	7.02	5.35	6.00	5.48
April ..	3.94	3.65	3.85	4.36	4.46	4.40	4.44	4.22	4.40	3.90	4.12	3.96
May ..	6.78	4.55	4.78	5.65	5.83	6.72	8.03	6.80	7.50	5.40	6.17	4.71
June ..	2.58	1.90	2.05	2.79	2.78	2.92	3.35	2.37	3.20	2.18	2.50	2.64
July ..	8.85	6.08	6.10	8.59	8.52	8.15	10.00	5.60	9.70	6.28	8.15	7.27
August ..	9.30	7.75	7.30	10.55	10.59	10.25	11.03	7.65	10.20	7.20	9.55	9.04
September ..	4.93	4.17	4.10	5.22	5.31	4.25	6.03	4.85	5.24	4.24	5.10	4.78
October ..	5.00	4.43	4.43	5.26	5.27	4.46	5.20	4.55	4.51	4.42	4.94	5.44
November ..	5.70	4.16	5.20	5.39	5.39	4.76	7.70	6.74	5.70	4.65	5.20	4.31
December ..	7.26	6.25	5.92	7.70	7.97	7.09	9.24	8.80	8.63	6.15	7.55	7.19
Total ..	70.86	55.54	56.88	74.86	75.01	73.20	85.57	68.24	79.43	57.02	67.39	62.71

The lowest Rainfall registered in the Waterworks catchment area for the year 1908, is 55.54 inches at Gauge No. 3, and the highest 85.57 inches at No. 6, being 54.06 per cent. more at No. 6 than at No. 3.

The lowest Rainfall registered in the Borough is 48.37 inches at Treharris Service Reservoir. This is a new gauge. The greatest Rainfall recorded in 24 hours in the Waterworks catchment area was 3.40 inches at Gauge No. 11 on October 19th. At Treharris Service Reservoir the record on October 19th for 24 hours was 4.80 inches.

The Borough Engineer suggests that a Climatological Station be established in the Mardy Isolation Hospital grounds, which would give, at little expense, useful public information.

TABLE OF TEMPERATURES AND RAINFALL AT PORTHCAWL, IN THE YEAR 1908.

Rain Gauge. { Diameter of Funnel 8 inches.
 Height of Top above Ground 1 foot.
 " " Sea Level .. 43.5 feet.

MONTH.	TEMPERATURE.				RAINFALL.			
	Mean of Max. Therm.	Mean of Min. Therm.	Highest Temp. recorded.	Lowest Temp. recorded.	Total Depth.	Greatest fall in 24 hours.	Date.	No. of days with 0.01 or more recorded.
	Degrees.	Degrees.	Degrees.	Degrees.	Inches.	Inches.		
January ..	45.34	33.40	53.00	21.00	2.06	0.31	7th	18
February ..	46.50	39.40	51.00	29.00	2.51	0.92	16th	22
March ..	47.50	36.40	52.00	28.00	2.58	0.86	24th	18
April ..	50.85	36.90	61.00	27.00	3.79	1.51	29th	17
May ..	57.50	47.50	71.00	42.00	1.52	0.32	13th	15
June ..	66.88	50.03	80.00	41.00	0.71	0.40	2nd	7
July ..	70.00	58.00	82.00	50.00	3.26	0.90	16th	11
August ..	67.60	53.00	73.00	45.00	2.46	1.30	24th	7
September ..	54.73	44.55	74.00	39.00	3.735	0.83	1st	16
October ..	61.26	39.40	73.00	33.00	1.61	0.31	3rd	12
November ..	51.19	46.53	59.50	31.50	1.79	0.49	21st	10
December ..	48.38	39.50	53.20	23.00	4.433	0.6	31st	21
Mean Temp.	55.64	43.72	61.89	34.12	30.458	..	..	174

REGISTER OF DAILY SUNSHINE AT PORTHCAWL, IN THE YEAR 1908.

Date.	Jan.	Feb.	March.	April.	May.	June.	July.	Aug.	Sept.	Oct.	Nov.	Dec.	
	H. M.	H. M.	H. M.	H. M.	H. M.	H. M.	H. M.	H. M.	H. M.	H. M.	H. M.	H. M.	H. M.
1 .. ..	..	1 50	3 0	5 50	10 40	3 30	10 45	13 0	2 0	10 0	..	2 45	
2	6 10	..	4 55	..	10 20	3 15	8 15	12 15	6 0	8 30	1 30	..	
3	5 50	5 20	3 05	4 40	2 0	10 0	12 45	12 0	..	9 45	6 0	..	
4	6 10	8 05	4 50	7 10	4 20	8 45	12 0	2 0	0 30	3 0	4 0	..	
5	6 05	0 10	5 55	3 35	0 55	14 30	No Records.	3 30	8 0	5 0	6 30	..	
6 .. ..	..	0 35	0 35	4 40	4 45	9 30		5 15	..	0 15	3 45	1 0	
7	0 35	..	3 35	4 25	8 55	8 45		12 30	6 15	1 30	1 22	3 0	
8 .. ..	..	0 40	..	11 40	1 20	8 15		12 30	No	3 30	8 0	..	
9	5 40	..	7 05	8 0	4 05	8 15	4 30	12 0	Rec'd	7 0	6 45	..	
10	6 05	..	1 35	11 55	15 05	6 30		8 15	9 30	8 30	..	2 22	
11	6 20	..	1 55	..	7 30	2 45		10 30	7 30	8 45	1 30	1 30	
12	5 40	8 15	6 30	3 45	11 10	12 0		11 15	..	3 0	1 45	2 30	
13	6 10	0 40	5 05	6 10	5 45	..	..	7 0	8 30	3 15	4 0	..	
14 .. ..	..	6 55	0 15	7 05	2 10	9 30	5 45	5 15	4 30	1 30	..	..
15 .. ..	..	2 10	2 10	7 15	4 10	6 0	6 0	11 0	7 0	2 45	2 15	0 45	
16 .. ..	..	5 45	5 45	11 35	0 35	4 45	..	8 30	1 0	7 5	5 45	..	
17	2 20	0 10	5 40	11 55	1 30	3 0	..	12 15	6 30	..	2 45	..	
18	2 15	1 15	6 40	5 05	0 40	13 0	6 0	7 45	0 15	..	1 30	3 30	
19	2 45	0 10	4 20	4 30	1 15	7 0	13 15	9 0	6 30	5 45	5 30	..	
20	6 20	0 55	2 20	10 05	11 50	9 0	5 0	..	..	1 0	0 30	..	
21	5 40	..	5 45	0 20	8 45	1 50	16 0	..	6 15	7 45	..	..
22 .. ..	..	1 05	3 10	4 05	11 50	14 0	..	5 0	1 0	2 15	..	..
23	1 55	5 40	10 10	3 50	No Records.	4 30	16 0	..	..	..	4 0	..	
24	3 55	2 25	1 20	6 30		9 45	7 0	8 30	3 0	8 45	1 0	..	
25	3 10	3 15	6 05	12 05		13 15	..	7 0	3 0	2 45	3 75	..	
26	0 35	0 40	9 35	11 10		12 30	11 45	..	7 15	..	0 45	1 45	
27 .. ..	..	2 45	4 55	..	No Records.	10 50	5 15	7 0	..	1 0	2 0	..	
28	2 10	4 10	10 15	3 45		..	13 15	7 0	7 5	6 0	..	..
29	6 20	3 40	..	6 0		13 30	13 30	10 30	10 15	3 0	..	..
30	0 50	..	5 40	1 30	5 30	11 30	7 0	11 15	10 30	9 0	..	..
31	3 10	..	1 20	..	13 0	..	12 30	..	..	..	..	..	Year
Totals ..	96 10	66 35	134 15	178 35	147 5	253 5	194 5	232 0	125 23	123 8	74 45	19 7	1644 13

BRIDGEND.

METEOROLOGICAL OBSERVATIONS, 1908.

MONTH.	BAROMETER.			THERMOMETER.						HYGROMETER.		
	Highest.	Lowest.	Mean of Month.	Highest Maximum.	Lowest Minimum.	Mean of Max.	Mean of Min.	Mean of Mean.	No. of Days at or below 32° F.	Mean of Dry Bulb.	Mean of Wet Bulb.	Rainfall.
	Date. Inches.	Date. Inches.	Inches.	Date.	Date.	Degs.	Degs.	Degs.	Degs.	Degs.	Degs.	Inches.
January ..	24th 30.48	8th 29.12	30.04	20th	5th	57.5	31.4	38.4	13	45.1	43.6	3.20
February ..	7th 30.67	28th 29.26	30.06	20th	6th	56.0	36.1	44.2	8	43.1	41.7	2.64
March ..	15th 30.15	6th 29.16	29.78	28th	21st	57.0	30.0	41.5	14	41.7	39.9	3.80
April ..	7th 30.34	25th 29.36	29.91	30th	24th	66.5	35.5	45.6	9	45.4	43.2	3.25
May ..	27th 30.45	6th 29.26	29.91	2nd, 3rd	11th	78.5	47.3	56.0	0	57.1	53.9	2.23
June ..	24th 30.50	16th 29.75	30.11	30th	15th	84.5	52.0	62.0	0	64.8	58.5	0.51
July ..	29th 30.43	17th 29.41	29.98	3rd	26th	86.0	54.7	63.5	0	61.8	58.8	4.48
August ..	3rd 30.36	28th 29.43	29.95	18th	11th	80.0	51.1	60.7	0	61.0	58.1	4.25
September ..	5th 30.25	9th 29.54	29.92	1st, 8th	5th	71.0	48.3	56.3	0	58.7	57.5	6.24
October ..	22nd 30.36	27th 29.82	29.95	2nd	25th	76.0	48.8	56.8	2	56.1	51.7	2.85
November ..	30th 30.35	22nd 29.55	29.97	1st	10th	62.0	40.8	46.9	1	48.1	45.5	2.56
December ..	1st 30.33	15th 29.22	29.87	11th	31st	52.0	37.8	41.9	6	44.1	43.2	5.51

PART II.

Summary of the Annual Reports of the District Medical Officers of Health.

URBAN DISTRICTS.

ABERAVON (Borough).

Medical Officer of Health—J. ARNALLT JONES, M.D., D.P.H.

Area in acres, 2,060.

	1891	1901	1908
Population	6,281	7,533	8,500 (estimated).
Birth-rate, 39.1.	Death-rate, 19.4.	Zymotic death-rate, 5.5.	Infant mortality-rate, 162.
	Phthisis death-rate, 0.7.	Respiratory diseases death-rate, 3.52.	

INFECTIOUS DISEASES.

14 cases were notified as compared with 27 during 1907. These included *Diphtheria and Membranous Croup* (1 case); *Erysipelas* (5 cases); and *Enteric Fever* (8 cases, 1 death).

Diphtheria.—Only one case was notified, and this was a very mild one. Although the parents made no attempt at isolation and anti-toxin was not used, yet there was no spread of the disease.

Enteric Fever.—Of the 8 cases notified, 6 were treated in hospital. No local cause was found to account for the first 2 cases, which occurred in January. In the beginning of October, 4 cases were notified, viz. :—a mother and her three sons. The local conditions were unsatisfactory, the yard being dirty and unpaved, and the w.c. foul.

Measles, Whooping Cough, and Chicken Pox.—These diseases were very prevalent during the greater part of the year, and interfered greatly with school attendance. Measles caused 16 deaths, and Whooping Cough 4, all of these being children under the age of five years.

Pulmonary Phthisis caused 6 deaths—2 were males and 4 females. The ages ranged from 19 to 66 years.

GENERAL CONDITIONS.

Water Supply.—The Medical Officer of Health remarks—"The town has been placed during the year to much inconvenience and discomfort by the want of a plentiful, constant, and pure water supply, and at no time more so than during the warm weather, when our infantile mortality was highest. Our

own limited supply had to be supplemented by what could be spared by the neighbouring Urban Authority of Margam. The town was constantly supplied with water from January 1st, 1908, to March 31st, the Margam supply going to the lower part of the town, and our own reservoir supplying the upper part. On March 31st the Margam Authority notified the Corporation that they could only give them a two hours' supply daily, viz., from 8 to 10 a.m. This necessitated the cutting off of the supply to the lower part of the town between 10 a.m. and 12 noon, to enable the upper part to be supplied; after noon the water was sent through all the town mains. This continued to the end of July."

Housing of the Working Classes.—The Medical Officer of Health remarks—"In my last five annual reports I have urged the Corporation to insist on the concreting of the floors of new buildings A house built on a damp subsoil without such protection cannot escape a ground air charged with moisture, which not only makes the house damp, but fosters such diseases as Phthisis, Diphtheria, Rheumatism, Chronic Bright's Disease, and Zymotic Diarrhœa of Infants."

Common Lodging Houses.—There are seven of these in the Borough, only two of which are regarded as fairly good buildings, and are well conducted. The Medical Officer of Health considers it advisable that the Corporation should provide a large up-to-date common lodging house in the District.

Factories and Workshops.—There were 32 inspections made of factories, and 80 inspections of workshops in the District. In the case of one workshop only was a want of cleanliness observed, and this was remedied on complaint.

Disinfection.—The Corporation do not possess a disinfecting apparatus. Infected rooms are fumigated, infected clothing is boiled, and floors, &c., are washed with fluids such as Izal and carbolic acid.

IMPROVEMENTS.

New Market.

New urinal.

Widening of High Street (Home Stores).

Roofing of Old Market to replace canvas covering after the fire.

Fencing of the Reservoir.

REQUIREMENTS.

Public street works in various parts of the District.

New road and bridge—Pentyla to Pendarves Street.

Recreation ground (Lord Jersey's gift).

New shelter on the beach.

Corporation stables, general stores, mortuary.

Drainage of Moors.

New water main from reservoir to the Town.

A plentiful and constant supply of pure water.

A steam disinfecting apparatus.

A refuse destructor.

} In contemplation.

ABERDARE.

Medical Officer of Health—M. J. REES, M.D.

Area in acres, 15,127.

	1891.	1901.	1908.
Population	40,917	43,357	47,334 (estimated).
Birth-rate, 34·2.	Death-rate, 20·2.	Zymotic death-rate, 3·6.	Infant mortality-rate, 212.
	Phthisis death-rate, 0·99.	Respiratory diseases death-rate, 3·90.	

INFECTIOUS DISEASES.

405 cases were notified during the year as compared with 325 in 1907. These included *Diphtheria* and *Membranous Croup* (115 cases, 15 deaths); *Erysipelas* (64 cases, 3 deaths); *Scarlet Fever* (191 cases, 5 deaths); *Enteric Fever* (25 cases, 3 deaths); and *Puerperal Fever* (10 cases, 8 deaths).

40 deaths occurred from *Whooping Cough*, 43 from *Measles*, 69 from *Diarrhœa*, and 13 from *Enteritis*.

Compared with 1907, the death-rate is unfavourable, and the increase is partly due to greater prevalence of the zymotic diseases—Measles, Whooping Cough, and Diarrhœa.

6 deaths occurred from *Lead Poisoning*.

The Infantile Mortality, 212, is much in excess of that for the previous year, viz., 134. With the object of reducing this excessive infantile mortality, it was recommended to the Council that two Health Visitors should be appointed, who should also act as School Nurses. They would be required to visit houses where births had recently occurred, and where necessary give advice to the mother as to the feeding and rearing of infants, with special stress on the importance of breast-feeding, &c. In order that the Health Visitor may carry out her work satisfactorily, it will be necessary to adopt the Notification of Births Act, so as to enable the Health Visitors to visit suitable cases, and to advise as to the feeding and rearing of the baby as early as possible.

Diphtheria.—118 cases were notified as compared with 135 during 1907. The attack-rate was 2·42 per 1,000 of the population, the death-rate 0·31, and the fatality 13·04 per cent. of the cases notified.

56 cases were removed to the Isolation Hospital, of whom 5 died, giving a case mortality of 8·9 per cent. among those removed to Hospital in contrast to a case-mortality of 16·9 per cent. among those not removed. Nine cases required tracheotomy upon admission into the Hospital; of these, two died, one two days' after admission and the other whilst the operation was being performed.

A laboratory was provided by the Education Committee in order that examinations may be made of swabs from children's throats. Although the Laboratory was only in working order towards the end of the year, there is ample proof of the fact that there are many children apparently in good health who harbour in their throats and noses a bacillus which closely resembles the specific bacillus of *Diphtheria*. The Education Committee also provided every child attending the Elementary Schools with a pencil case in order to avoid the promiscuous use of pencils, pens, etc., and to ensure every child of the use of the same pen, pencil, etc., every day.

Scarlet Fever.—194 cases were notified and 5 deaths occurred as compared with 110 notifications and 6 deaths in 1907. 3 notifications were withdrawn, making a total of 191 cases for the year. 24 cases, of which 1 died, were removed to the Isolation Hospital. As the present Isolation Hospital can only accommodate one disease, the practice of removing cases of Scarlet Fever to the Hospital when another disease is being isolated is fraught with danger.

Typhoid Fever.—28 cases were notified, of which 3 were withdrawn, making a total of 25 cases, with 3 deaths. 19 cases were removed to the Isolation Hospital, 3 of whom were diagnosed subsequently to be suffering from other diseases. Of the remaining 16, in whom the diagnosis of Enteric Fever was a confirmed one, one died. The origin of the outbreak was obscure, as no common cause could be found. Two cases contracted the disease outside the District, and in one of these the attack was developed abroad. Two cases contracted the disease at the Hospital, of whom one was a ward maid, whilst the other was a young child who was discharged from the Hospital after an attack of Diphtheria during the incubation period of Typhoid Fever.

GENERAL CONDITIONS.

Water Supply.—This is the property of the Urban District Council, and is derived chiefly from upland sources. There is a sufficiency of wholesome water for the whole District, and at no time during the year was any anxiety felt on account of shortage. In spite of a drought, during which the level of the water in the reservoir sank continuously for 58 days, there was in store sufficient water for some 60 days' supply.

Lead Poisoning.—6 deaths were certified to be due to poisoning from lead contained in the drinking water. The lead poisoning was, in at least 3 of the cases, of many years standing, the deaths being due to the sequelæ of lead poisoning viz. :—Paralysis, Arterio-sclerosis, and Chronic Bright's Disease.

Owing to the waters from the Nanthir and Nantymoel reservoirs possessing plumbo-solvent action due to the acids from the peat on the gathering ground, samples of the water were sent to the County Laboratory in order to determine the action of the water upon lead, and the best way of preventing such action. It was recommended that the water should be treated with chalk to counteract the acidity and to assist the formation of a protective coating of insoluble oxycarbonate within the service pipes.

A chalk plant has been placed both at the Nantymoel and Nanthir reservoirs. The water is pumped up from the reservoirs into a tank, whence it flows to the chalk mixer, situated at a lower level. From the mixer the mixture of chalk and water is carried to the top of the standpipe within the water tower, and thence to the main. The proportion of chalk used is about *three grains per gallon* of water passing through the main. Samples of water taken from a tap after remaining in the pipe overnight at a house supplied with Nanthir water, and examined by the Medical Officer of Health for lead, showed no traces, whilst a sample of water taken under the same conditions at the same house was sent to the County Laboratory for analysis and was found to contain traces of lead.

Sewerage.—The system is said to be fairly efficient in all parts. A few of Well's Patent Ventilating Lamps are in course of construction on some of the sewers. The sewage is taken down the Cynon Valley to the Parknewydd Farm, Abercynon, where it is dealt with by broad irrigation.

The Sanitary Inspectors have made a special investigation of the District with regard to the closet accommodation, and in their report they state that there are approximately 600 houses without closets of any description.

Housing.—During the year a Local Government Board Inquiry was held with reference to the Council's application to borrow £10,000 for the erection of 50 houses, and sanction was given. Tenders have since been accepted for the erection of the 50 houses, 28 of which are to be built at Cwmbach, and 22 at Aberaman, but no contract has yet been entered into.

15 under houses were closed as separate dwellings, and four back-to-back houses were rendered "through" and thoroughly repaired. A long list is given of the houses dealt with, in addition to which, minor defects in many other houses were remedied.

There still exist in the District many insanitary dwellings of the "over and under" variety, and these will be gradually dealt with on account of the difficulty that is experienced by people displaced in finding other accommodation.

299 new houses were certified for habitation during the year.

Common Lodging Houses.—These are two in number, and they are under the supervision of the Police, by whom they were regularly inspected. The bye-laws were complied with, and no complaints were received.

Dairies, Cowsheds, and Milkshops.—There are 112 on the register. During the summer and autumn the cows are turned out to graze, and during the winter they are habitually turned out during a portion of the day. The Council have made regulations under the Dairies, Cowsheds, and Milkshops Order, and several cowsheds were dealt with under these regulations.

Unsound Food.—238 baskets of raspberries and 100 boxes of mackerel were voluntarily given up and condemned; no proceedings were taken.

Factories and Workshops Act.—There are 117 workshops on the register as compared with 108 last year. Apart from bakehouses, 70 visits of inspection were made, and three notices were served to abate nuisances. No lists of outworkers were received, there being none employed in the District.

There are 30 bakehouses on the register, an increase of three on the previous year. These were frequently inspected and found to be in a satisfactory condition. No applications were made for certificates to use underground bakehouses, and no such bakehouses are in use in the District.

Section 22 of the Public Health Acts Amendment Act, 1890, is in force in the District, and the standard of "sufficiency and suitability" of sanitary accommodation is, one water closet for every 25 persons.

Refuse Disposal.—A daily collection is carried out by the Council's employees. A great difficulty is experienced in obtaining depôts for the tipping of scavengers' refuse.

A refuse destructor (Horsfall's) is to be erected at Gadlys capable of dealing with a maximum of 96 tons of refuse per 24 hours, viz. :—1 ton of refuse per cell per day. It is proposed to work the whole of the plant by electric power, including the charging of the cells, thereby doing away with manual charging. Once the refuse is tipped into the scavenging carts, it is not again handled until the residue is withdrawn from the furnace.

School Hygiene.—Owing to Measles a number of Schools were closed. The question of School disinfection and the need of a systematic inspection of the sanitary conditions of the Schools is recognised.

The annual report of the School Medical Inspectors details the conditions discovered under the various headings. Some 2,000 children were examined and approximately 260 visits were paid to Schools.

IMPROVEMENTS.

Not specified.

REQUIREMENTS.

Not specified.

BARRY.

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

Area in acres, 4,104.

	1891.	1901.	1908.
Population	12,665	27,030	33,202 (estimated).
Birth-rate, 29.0.	Death-rate, 11.7.	Zymotic death-rate, 1.5.	Infant mortality-rate, 135.
	Phthisis death-rate, 0.60.	Respiratory diseases death-rate, 2.01.	

INFECTIOUS DISEASES.

145 cases were notified as compared with 101 in 1907. These included *Diphtheria* and *Membranous Croup* (50 cases, 5 deaths) ; *Erysipelas* (39 cases, 2 deaths) ; *Scarlet Fever* (45 cases, 1 death) ; *Enteric Fever* (10 cases, 1 death) ; and *Continued Fever* (1 case).

13 deaths occurred from *Measles*, 8 from *Whooping Cough*, 22 from *Diarrhœa*, and 8 from *Enteritis*.

The District was free from *Small Pox*, and the disease was not imported into the Docks.

Scarlet Fever.—45 cases were notified as compared with 35 for 1907. Although this is an increase of 10 cases over those for the previous year, the number is not excessive in proportion to the population. Only 1 death resulted from this disease.

It will be possible to isolate cases of *Scarlet Fever* as soon as the alteration and furnishing of the Sanatorium are completed.

Diphtheria.—50 cases were notified as compared with 22 during the previous year. Many of the cases were of a mild type, but some of the persons suffered from a virulent form of the disease, and of these 5 died.

The free provision by the Council of anti-toxin for the poorer classes is commended.

Measles.—The disease was prevalent throughout the District, and 13 cases ended fatally, 4 of which were under one year of age and 9 between one and five years.

Diarrhæa.—19 deaths resulted from Diarrhæal disease as compared with 1 death in 1907. The disease was most prevalent in the third quarter, especially during the hot weather of August and September. Of the 19 deaths, 14 were of children under one year of age.

Puerperal Fever.—No case occurred during the year. The Medical Officer of Health remarks :—“ The enforcement of the Rules under the Midwives Act cannot be other than beneficial, and helps to ensure strict care and cleanliness being observed.”

Typhoid Fever.—Of the 10 persons who suffered with this disease, 4 were sailors who were infected in foreign ports or on board ship, and 2 were persons who had been on visits to friends in other Districts and returned to Barry ill. One case was that of a visitor from Liverpool who was reported as suffering from Typhoid Fever two days after arrival. The remaining 3 cases apparently originated within the District, but the exact cause of the same could not be discovered.

Whooping Cough.—The correct number of cases that occurred cannot be stated as the disease is not notifiable in the District. 8 deaths occurred, 5 of which were of children under one year of age.

GENERAL CONDITIONS.

Water Supply.—This is obtained from wells and headings in the carboniferous limestone within the Parish of St. Andrews Major. The water has a total hardness of from 35 to 40 degrees.

Sewerage and Drainage.—The sewers are egg-shaped brick, or iron and stoneware pipe ones. These sewers are provided with a number of 6-inch pipe ventilators, and the sewage is discharged into the sea below low water mark.

Refuse Removal and Disposal.—Daily collection of refuse is carried out in properly constructed carts, the refuse being conveyed to the Destructor, where some 16 tons are destroyed daily. 4,926 tons were destroyed during the year.

Schools.—The Sanitary Inspectors periodically inspected the whole of the Council Schools, and the sanitary arrangements were found good. Owing to the prevalence of infectious disease two Schools were thoroughly disinfected.

The result of the medical examination of School children will be reported upon by the School Medical Officer.

Notification of Births Act.—The Council adopted this Act about the middle of March, 1908, since which time 714 notifications have been received from medical practitioners, midwives, or the heads of families. On receipt of the notification of a birth, notice is at once sent to the Matron or the Nursing

Association, who instructs one of her nurses to visit the mother and at the same time gives her a card of instructions for the feeding and welfare of the baby. She also fills in a card of particulars relating to occupation of parents, etc.

Dairies, Cowsheds, and Milkshops, etc.—These were frequently inspected, and most of them were in a satisfactory condition.

There are 26 registered cowkeepers in the District, and the accommodation provided is sufficient for 186 cows. The number of registered milk-sellers is 128. 40 samples of milk were taken for analysis, and 5 were deficient in butter fat, the deficiency ranging from 4 to 16 per cent., and one sample contained 12 per cent. of added water.

Bakehouses.—These are 40 in number and were carefully inspected. The majority are of modern construction and were found to be in a sanitary condition.

Common Lodging Houses.—There are six registered ones in the District ; these were frequently inspected and found satisfactory. The Council have adopted the Public Health Acts Amendment Act, 1907, under which keepers of common lodging houses are subject to be licensed for one year only, whereas formerly the licence held good for an indefinite period.

Public Abattoir.—This place is visited and inspected daily, and also the butchers' shops and other places at which food is sold. 12,304 animals were slaughtered—a decrease of 901 as compared with 1907. 5,563 lbs. of food (meat, fruit, and vegetables) were condemned, as compared with 741 lbs. in 1907.

Drain Testing.—288 drains were tested, and only 66 were found satisfactory. In every case where drains are now being tested, proper supervision of repairs and retesting of the same is carried out.

Small Pox Hospital.—This is now completed and furnished throughout. There are two blocks, each consisting of two wards, with kitchens and the necessary sanitary conveniences.

Sanatorium.—The buildings situated off Colcot Road, are being thoroughly overhauled, and preparations are being made for furnishing the Hospital. Up to the present the place has only been used for seamen who suffered from Typhoid or other fevers.

IMPROVEMENTS.

Private streets and lanes—595 lineal yards.

Public road widenings—90 lineal yards.

Sewers and drains constructed—339 lineal yards.

Paving of public highways—1,040 super. yards.

The laying out and planting of Romilly Park, Barry, and Victoria Park, Cadoxton, and the land at the rear of the Public Library, Holton Road, also grounds adjoining Whitmore Bay, Barry Island (being carried out).

Bowling greens are to be provided at various places.

REQUIREMENTS.

Not specified.

BRIDGEND.

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

Area in acres, 700.

	1891.	1901.	1908.
Population	4,896 ..	6,066 ..	7,470 (estimated).
Birth-rate, 28.65.	*Death-rate, 13.52.	Zymotic death-rate, 1.20.	Infant mortality-rate, 102.
	Phthisis death-rate, 1.07.	Respiratory diseases death-rate, 2.54.	

*Corrected death-rate by deducting deaths at Workhouse, &c., of non-residents, and adding the deaths at the County Asylums of residents.

INFECTIOUS DISEASES.

16 cases were notified as compared with 54 in 1907. These included *Small Pox* (1 case); *Diphtheria* (5 cases, 2 deaths); *Erysipelas* (3 cases); *Scarlet Fever* (4 cases); and *Enteric Fever* (3 cases).

Two deaths occurred from *Epidemic Influenza*, 1 from *Diarrhæa*, and 1 from *Enteritis*.

Nine deaths occurred in all from the seven principal Zymotic diseases.

GENERAL CONDITIONS.

Water Supply.—The water supply, as usual, is plentiful. Greater care is said to be needed with regard to filtration. The result of the examination was unsatisfactory.

Slaughter Houses.—The building of a public abattoir is urgently needed.

Common Lodging Houses.—The only one in the District—at Newcastle—is fairly well conducted, but overcrowded.

Sewerage.—The whole of the house drains have been connected to the new sewers, tested, and inspected. The Park Field sewers have been laid and completed at a cost of £1,450.

Dairies, Cowsheds, and Milkshops Orders.—The regulations under these Orders are enforced, and several structural and other defects were remedied.

Workshops and Bakehouses.—These have been inspected, reported upon, and improvements effected.

House Accommodation.—33 new houses were erected, and 8 dwelling houses were in course of erection. 1,514 houses are occupied, being an increase of 45 over the number for 1907. 27 houses are vacant. No houses were closed as "unfit."

IMPROVEMENTS.

130 yards of footpath on the south side of Cemetery Road has been kerbed and channelled and paved with asphalt.

The asphaltting of the footpath on the north side of the above road.

Several lengths of defective channelling in various parts of the town have been taken up and relaid.

Making up and tarring of Nolton and Park Streets and Cowbridge Road.

An 18-inch relief storm-water sewer has been laid through Water Street.

A 12 inch storm-water sewer has been laid from Dunraven Place.

Iron railings fixed along the dangerous place on the south side of the Graig steps.

A four-stalled urinal, adjoining the G.W.R. bridge in Coity Street (in hand).

The construction of the Park Field sewers.

The Isolation Hospital has now been opened for use, and is occupied.

REQUIREMENTS.

The appointment of a qualified meat inspector.

The appointment of a permanent additional Sanitary Inspector.

The closing or repair of certain dwellings named.

BRITON FERRY.

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

Area in acres, 1,381.

	1891.	1907.	1908.
Population	5,779	6,961	8,000 (estimated).

Birth-rate, 30·3.	Death-rate, 15·5.	Zymotic death-rate, 2·12.	Infant mortality-rate, 160.
	Respiratory diseases death-rate, 3·25.	Phthisis death-rate, 0·75.	

INFECTIOUS DISEASES.

108 cases were notified as compared with 41 in 1907. These included *Diphtheria* and *Membranous Croup* (16 cases, 1 death); *Erysipelas* (4 cases); *Scarlet Fever* (84 cases, 1 death); *Enteric Fever* (2 cases, 1 death); and *Puerperal Fever* (2 cases).

10 deaths occurred from *Measles*, 1 from *Whooping Cough*, 4 from *Diarrhæa*, and 5 from *Enteritis*.

GENERAL CONDITIONS.

Water Supply.—The supply has been well maintained throughout the year.

Slaughter Houses.—These are regularly inspected, and are kept in as clean a condition as this class of building will permit.

Dairies, Cowsheds, and Milkshops.—These are regularly inspected by the Sanitary Inspector, and are kept in a very fair condition. There are 13 cowkeepers and purveyors and 7 purveyors only. The number of cows is 67, and these are kept in 16 cowsheds, having a total air space of 35,031 cubic feet, giving an average of 538 cubic feet per cow.

Housing.—Private enterprise does not appear to be equal to the demand for workmen's dwellings. Plans for nine dwellings were passed during the year. There are a number of cases of overcrowding in the District, and many old properties are in a state of disrepair, damp, and undesirable as dwellings. The Housing Scheme as prepared by the Council's Surveyor is a good, practical, and popular one, and will undoubtedly be the means of bringing about a general improvement in the housing of the District, as until more dwellings are erected it will be most difficult to deal with the old and defective properties.

Factories and Workshops.—These are periodically inspected and the sanitary conveniences have been maintained in a good and clean condition.

IMPROVEMENTS.

370 lineal yards of new roads constructed and sewered by the Jersey Estate and taken over by the Council.

Several lengths of old and defective pipe sewers have been picked up and reconstructed.

400 superficial yards of new paving to replace old and defective footways.

1,415 superficial yards of roadway tar-painted and other roads treated with calcium chloride to assist in dust-laying during the hot weather.

REQUIREMENTS.

Provision of a new Isolation Hospital.

A public Abattoir.

CAERPHILLY.

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

Area in acres, 17,000.

	1891.	1901.	1908.
Population	14,000 ..	16,250 ..	27,000 (estimated).
Birth-rate, 42·1.	Death-rate, 13·0.	Zymotic death-rate, 2·3.	Infant mortality-rate, 138.
	Phthisis death-rate, 0·51.	Respiratory diseases death-rate, 1·66.	

INFECTIOUS DISEASES.

229 notifications were received as compared with 212 in 1907. These included *Diphtheria* and *Membranous Croup* (34 cases, 5 deaths); *Erysipelas* (12 cases); *Scarlet Fever* (168 cases, 1 death); *Enteric Fever* (14 cases, 3 deaths); and *Cerebro-Spinal Meningitis* (1 case, 1 death).

Measles was especially rife in the early months of the year, at Caerphilly and Nelson, and both the Infants and Mixed Departments of the Schools were closed. Out of the 200 odd cases at Nelson, only 2 proved fatal. One other case proved fatal in the District.

Scarlet Fever was by far the most prevalent disease. It seemed to have been chiefly and almost solely confined to the Town, Aber, Ystrad Mynach, and Nelson Wards, and in November it became epidemic at Nelson, where the Schools were closed for three weeks in addition to the Christmas Holidays. The Post Office at Nelson being situated in the infected area the Medical Officer of Health considered it advisable to have the office temporarily removed to premises some distance away, and this was done. The Sunday Schools, so far as the younger members were concerned, were closed. No less than 52 cases were notified from the Nelson Ward in quick succession.

Diphtheria.—Of the 34 cases notified, only 5 proved fatal, equal to a case-mortality of 14.7 per cent. of those attacked.

Cerebro-Spinal Meningitis.—This disease was included among the notifiable diseases during 1907. A case was reported from the Aber Ward and proved fatal in a few hours. There was no means of verifying the diagnosis, but every precaution was taken by the medical attendant to prevent its spread, and the stall where the man worked underground was thoroughly disinfected and the bedding, etc., destroyed. Diarrhœa was a chief symptom.

Enteric Fever.—Of the 14 cases notified, the first (at Llanbradach) was associated with sanitary defects, the other cases at the same place owed their origin to a *Typhoid-carrier*, for a family removed from Caerphilly to Llanbradach, where Typhoid had been, and although apparently convalescent, other members of the family were prostrated with the disease, and infected other children who were in the habit of playing together. In the *Town Ward* in October, 4 cases occurred within a month, and fearing that a general epidemic might occur, a sample of the drinking water was submitted to bacteriological examination. The water was reported to be "of doubtful purity," *B. Coli* being present in 10 c.c.

Puerperal Fever.—No cases of this disease were notified during the year. The Medical Officer of Health remarks:—" . . . Possibly the better type of Midwife may have something to do with this, and I cannot but regret that more of the Midwives do not take advantage of the Midwifery Classes and get their diplomas, especially with the facilities they now have at the University College, Cardiff."

GENERAL CONDITIONS.

Water Supply.—In the Town Ward it has been, on the whole, plentiful, but at times it was so muddy as to be unfit for drinking purposes. This may be said to be partly due to the breakages during the heavy rains, and also to the difficulty of flushing the dead ends. The filter beds have not yet been carried out at Rhymney Bridge.

At Ystrad Mynach complaints have been received. Although there is a filter at Tarran-y-Mwrthwyl, pumping operations were resorted to for a short time, at Ystrad Mill, without filtering. This was, however, soon stopped.

The Nelson supply is good and sufficient, being partly provided by the Merthyr Corporation.

In the Aber Ward great improvements are needed, especially in the upper part of High Street, Senghenydd.

Many complaints have been received from Taffs Well, and although no cases of Plumbism have come under the notice of the Medical Officer of Health, yet the water possesses plumbo-solvent properties, which the Manager of the Waterworks Company is using every means in his power to reduce.

Refuse Removal.—This is carried out satisfactorily, but the back lanes are for the most part in a sloppy condition and need immediate attention. Owing to the difficulty of finding suitable depôts a destructor should be provided.

Slaughter Houses.—The need of public abattoirs for the various Wards is strongly emphasised.

Common Lodging Houses.—There are two in the Town, and these are stated to be kept on the whole in a satisfactory manner. The new one has been of great service to the District.

Bakehouses.—These are satisfactory, ventilation and limewashing being firmly insisted upon.

Dairies, Cowsheds, and Milkshops.—These are not up to the requisite standard, the ventilation of many being bad, and the head-room too low.

Anthrax.—An outbreak of this disease occurred at a farm called Penybryn, and 10 animals died. The carcasses were disposed of in an improvised crematorium erected under the supervision of Superintendent Gill. The disinfection of the buildings, yards, etc., was carried out by the District Sanitary Inspector and his assistants in a very efficient manner.

IMPROVEMENTS.

Sewer connections in various parts of the District.

Extension of sewers to the Hospital, Energlyn, and St. Martin's Road, Caerphilly.

Private street works in Bartlett, Goodrich, Ludlow Streets, etc., Caerphilly, and in Thomas, Morgan, and Church Streets, Ystrad Mynach, also in Wern and Thomas Streets, Nelson, and Thomas Street, Eglwysilan.

A new cemetery in the Taffs Well Ward.

REQUIREMENTS.

A scheme of sewerage for Nelson and Ystradmynach.

Public Abattoirs for various parts of the District.

COWBRIDGE BOROUGH.

Medical Officer of Health—R. M. MOYNAN, M.D.

Area in acres, 84.

	1891.	1901.	1908.
Population	1,360 ..	1,202 ..	1,202 (estimated).
Birth-rate, 15·8.	Death-rate, 11·6.	Zymotic death-rate, nil.	Infant mortality-rate, 52.
	Phthisis death-rate, 1·6.	Respiratory diseases death-rate, 2·4.	

INFECTIOUS DISEASES.

There were no cases notified to the Medical Officer of Health.

GENERAL CONDITIONS.

Water Supply and Drainage.—Nothing has been done in these matters during the year. The water supply, which is from public deep wells and springs, was dealt with exhaustively in the report for the year 1900. The samples analysed at the County Laboratory were, both chemically and bacterologically, satisfactory. The Medical Officer of Health states :—" I feel it my duty to persevere yearly in bringing these two questions—a public water supply and a drainage system—face to face with you as I consider they are both matters of vital importance to the future growth and prosperity of the Borough, and of the well-being of its inhabitants."

Common Lodging House.—There is only one in the Borough—in the Eagle Lane—which has been found clean and in order.

Slaughter House.—This has been frequently visited and found to be kept in a fair condition. The nuisance complained of caused by the housing of calves, etc., overnight, has been abated.

Roads, &c.—These are in a fairly satisfactory state, and the tarring system which has been adopted has been productive of much good.

Factories and Workshops.—These comply with the requirements of the Act.

IMPROVEMENTS.

Not specified.

REQUIREMENTS.

A public water supply.

A public slaughter house.

A drainage and sewerage system.

GLYNCORWG.

Medical Officer of Health—HENRY DAVIES, M.B., C.M.

Area in acres, 13,926.

	1891.	1901.	1908.
Population	3,800 ..	6,500 ..	9,000 (estimated).
Birth-rate, 40·5.	Death-rate, 16·6.	Zymotic death-rate, 1·55.	Infant mortality-rate, 147.
	Phthisis death-rate, 0·66.	Respiratory diseases death-rate, 3·77.	

INFECTIOUS DISEASES.

59 cases were notified as compared with 56 in 1907. These included *Diphtheria* (7 cases, 1 death) ; *Scarlet Fever* (26 cases) ; *Typhoid Fever* (23 cases, 2 deaths) ; and *Erysipelas* (3 cases).

2 deaths occurred from *Measles*, 1 from *Whooping Cough*, 8 from *Diarrhœa*, and 5 from *Enteritis*.

GENERAL CONDITIONS.

Water Supply.—The chief supply has been well maintained, both as regards quality and quantity. It is intended to augment the existing supply by taking in additional springs.

The Council have had under consideration several schemes for the future supply of the District, viz. :—

- (a) Glamorgan Water Board.
- (b) Joint storage reservoir of sufficient capacity to supply Glynchorwg and Maesteg.
- (c) The obtaining of a supply from Ystradfellte (Neath Rural).

It is important that the Council should be prepared to meet the demands of Cynon and Duffryn Rhondda, places that are now being developed, also the construction of the sewerage scheme, which will be a further drain on the water supply.

Sewerage.—The main outfall sewer into the sea at Port Talbot—a joint undertaking between the Council and the Margam District Council—has been commenced, and when completed, arrangements will be made to construct the Avon Valley Sewer, which will drain the whole of the Council's area.

Removal of House Refuse.—A daily removal is effected at Abergwynfi, Blaengwynfi, Cymmer, and Glynchorwg, and this is stated to be satisfactorily done. Ash-bins have been provided at Rhiwgregan and Prosser's Terrace until arrangements can be made for a more systematic removal of the refuse in this locality.

Slaughter Houses.—The Council have instructed their Surveyor to report on the advisability of erecting public slaughter houses with a view of securing a better inspection of the meat supply.

Dairies and Cowsheds.—These have been inspected and found clean and well kept.

Bakehouses.—These have been regularly inspected, and certificates granted for the underground ones.

Workshops.—These are mostly small dressmaking establishments at which a few hands are employed. They are regularly inspected and found satisfactory.

Roads.—These have been renovated in various parts. A new road has been commenced from Cymmer to Dyffryn Rhondda down to the Avon Valley, which will greatly add to the convenience of the public.

Recreation Grounds have been provided for Glyncorwg, and a site has been given by Lord Jersey for a similar purpose at Blaengwynfi.

Cemetery.—The new cemetery at Cymmer has been completed and opened for public burial.

Houses.—103 new houses were built, thus bringing the total number of houses up to 1,504, giving an average of 5·9 persons per house. House accommodation is still scarce, and overcrowding is met with.

Infectious Diseases Hospital.—No cases were treated during the year. It is well kept and always ready for patients. A proper disinfecting apparatus, together with a conveyance for the removal of patients are urgently needed.

IMPROVEMENTS.

- A new recreation ground for Glyncorwg.
- Ash-bins for Rhiwgregan and Prosser's Terrace.
- A new road from Cymmer to Duffryn Rhondda (in hand).

REQUIREMENTS.

- A system of sewerage and drainage (in hand).
- Slaughter houses for Cymmer and Glyncorwg.
- A proper disinfecting apparatus and ambulance.

MAESTEG.

Medical Officer of Health—WALTER KIRKBY, L.R.C.P., L.R.C.S., D.P.H.

Area in acres, 6,709.

	1891.	1901.	1908.
Population	9,417	15,013	25,141 (estimated).
Birth-rate, 32·33.	Death-rate, 13·92.	Zymotic death-rate, 1·59.	Infant mortality-rate, 172.
	Phthisis death-rate, 0·99.	Respiratory diseases death-rate, 3·06.	

INFECTIOUS DISEASES.

86 cases were notified as compared with 50 in 1907. These included *Diphtheria* and *Membranous Croup* (9 cases, 2 deaths); *Erysipelas* (7 cases); *Scarlet Fever* (52 cases); *Enteric Fever* (16 cases, 3 deaths); and *Puerperal Fever* (2 cases, 2 deaths).

Four deaths occurred from *Measles*, 9 from *Whooping Cough*, 22 from *Diarrhœa*, and 26 from *Enteritis*.

Diphtheria and Membranous Croup.—The 9 cases notified were distributed in the various Wards. Where sanitary defects were found, the usual notices were served to abate the same.

Scarlet Fever.—Of the 52 cases notified, none proved fatal. The attacks were mild, hence it was difficult to persuade parents to allow their children to be removed to Hospital for effective isolation.

Enteric Fever.—16 cases were notified, 3 proving fatal. In only one house was there a second case. The history of one case clearly showed that it had been imported into the District, whilst as regards the others the origin was not clear, although sanitary defects were present in some of the premises and the usual notices were served to abate the same.

Whooping Cough.—Was prevalent during the early months of the year, and 9 deaths were registered from it as compared with 5 in 1907, and 13 in 1906.

Measles only occurred during the first two months of the year, as the last stages of a severe epidemic which had visited the District in the previous year; 4 cases proved fatal.

GENERAL CONDITIONS.

Water Supply.—The present supply is derived either from upland surfaces, or land springs in which the impermeable layer is the Upper Pennant Rock. During the summer months, when water was most urgently needed, there was a deficiency, but in order to cope with the difficulty, additional temporary supplies were obtained from two other sources; in one instance pipes were laid to Penylan Brook, in the other the water was utilised from an old disused level at Nantyllyllon. Before the water was used samples were sent to the County Laboratory for chemical analysis from both sources, and was stated to be satisfactory in each case.

The matter of obtaining an efficient supply of water is still *sub judice*.

Sewerage and Drainage.—A portion of the 18-inch main intercepting sewer in the lower part of the District, owing to subsidence, got out of order, and allowed a large quantity of sewage to flow into the Llynfi River. A loan was applied for and sanctioned for the same. The work has been put in hand and is now nearing completion. When the whole of the sewage reaches the sewage disposal works it is doubtful whether the existing plant will be large enough to effectively deal with the sewage. The additional 10 acres of land which the Council previously obtained is being laid out as a further irrigation area, but the whole of the work is not yet completed.

Removal and Disposal of House Refuse.—Refuse is daily removed by the Council's workmen, and is deposited in hollows away from inhabited parts. The Medical Officer of Health emphasises the urgent need of a refuse destructor so as to abolish the refuse tips, which are an ever present menace to the health of the community.

Nuisances.—During the year the office of Surveyor and Inspector of Nuisances has been separated and an Inspector of Nuisances appointed. Systematic inspection of the District has been undertaken, and the usual notices served, and generally complied with.

Unsound Food.—Frequent inspections have been carried out, and a few lots of fish were seized as unsound. Owing to the scattered positions of the slaughter houses, it has been found practically impossible to ensure thorough meat inspection. It is recommended that one or more public slaughter houses be provided, so that the examination of the meat could be undertaken before it was deposited in the shops for sale.

House Accommodation.—138 new houses were erected and occupied as compared with 161 in 1907, 144 in 1906, and 205 in 1905. There is still a great demand for houses, and many families have to go into apartments, since they cannot easily obtain a suitable house.

No action has been taken under Part. I. of the Housing of the Working Classes Act, but under Part II. action was taken with regard to several small collections of houses.

The supervision over the erection of new houses is in the hands of the Surveyor and his assistant, who make frequent visits during the course of erection.

IMPROVEMENTS.

A 12-inch storm-water drain in Llwydiarth Road, near the King's Head.

Laying down of a half-inch water service pipe in Office Road.

The construction of a 9-inch stoneware pipe sewer on the east side of Glanavon Terrace.

Repairing the arch, invert, and abutment walls of the bridge under the public road at Cwmcerdyn.

Erecting a corrugated sheet-iron fence around the Tonna Service Reservoir.

The construction of a 6-inch and 9-inch stoneware and cast iron sewers in and behind the east side of Tonna Road.

The lowering and improvement of the Duffryn Road from a point south of the Duffryn Orchard to the abutment wall of the old tramway.

The laying of 265½ lineal yards of kerbing and channelling.

The cleaning and colouring of walls and ceilings and painting the woodwork and ironwork and sundry other repairs to the Town Hall.

The construction of a 3-inch cast iron water main in George Street, Caerau.

The building of a retaining wall in Bridge Street.

The erection of 22 new street lamps and the laying of gas services to same.

Whitening the ceilings and painting the woodwork of the interior of the Isolation Hospital, Brynmawr Road.

Extension of 3-inch cast iron main in Turbervill and Carmen Streets, also from Caerau Schools to Blaencaerau.

The construction of 6-inch and 9-inch stoneware pipe sewers from Harvey Street to Bridgend Road.

REQUIREMENTS.

An adequate water supply.

The paving and channelling of many streets.

The adoption of the Infectious Diseases Prevention Act.

Public abattoirs.

Refuse destructors.

MARGAM.

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

Area in acres, 18,347.

	1891.	1901.	1908.
Population	6,274	9,014.	12,315 (estimated).
Birth-rate, 30.8.	Death-rate, 11.6.	Zymotic death-rate, 1.62.	Infant mortality-rate, 279.
	Phthisis death-rate, 0.56.	Respiratory diseases death-rate, 3.24.	

INFECTIOUS DISEASES.

83 cases were notified as compared with 83 in 1907. These included *Diphtheria* and *Membranous Croup* (25 cases, 2 deaths); *Erysipelas* (29 cases); *Scarlet Fever* (20 cases); and *Enteric Fever* (9 cases).

6 deaths occurred from *Whooping Cough*, 2 from *Diarrhœa*, and 10 from *Enteritis*.

24 cases were removed to the Sanatorium, viz.—*Diphtheria* and *Membranous Croup*, 10; *Scarlet Fever*, 12; and *Enteric Fever*, 2.

Scarlet Fever.—There was a slight increase in the number of notifications as compared with the previous year. In October, 8 cases were notified; in 7 of these the outbreak was due to the infection being conveyed by a child imported into the District during a state of convalescence from Pwlllyglaw and house to house visiting, the other case was attributable to the outbreak in the parish. No deaths were registered from this disease.

Diphtheria.—There was a decrease in the number of cases notified. Most of the cases were associated with defective drainage, and 10 cases were removed to the Sanatorium.

In all cases of isolation at home disinfectants were freely supplied, and at the termination of the cases, disinfection was carried out.

Puerperal Fever.—No case occurred. The working of the Midwives Act is said to be most satisfactory, and full advantage has been taken of it, with exceptionally good results.

Enteric Fever.—One case less was notified than in the previous year. Strong measures were immediately taken in every case to prevent the spreading of the disease, and Section 124 of the Public Health Act, 1875, was complied with in every respect.

Measles.—A severe outbreak of Measles occurred in January and February, which necessitated the closing of the Eastern and Central Schools for one month.

Sanatorium.—24 cases were removed to the Sanatorium, which is admirably staffed, equipped, and well-situated for such purpose. The Medical Officer of Health states :—" I can but testify to the excellent manner in which the nursing staff carry out their duties, under the able management of the Matron."

Tuberculosis.—Reference is made to the provisions of the Public Health (Regulations of Tuberculosis) Act, 1909, and the Medical Officer of Health strongly recommends the inclusion of Tuberculosis in the list of notifiable diseases for the District.

Seven deaths occurred during the year, equal to a death-rate of 0.56. The circulation of literature relative to the home treatment, disposal of sputum, open-air living, etc., would help to diminish its spread.

GENERAL CONDITIONS.

The whole of the District has been completely and thoroughly inspected, and all cases where sanitary defects existed, were immediately remedied.

Factories and Workshops.—Two new workshops were registered and one removed from the register.

51 visits of inspection were paid to the above, eight nuisances discovered and abated.

Bakehouses.—35 inspections were made, and one nuisance discovered. The whole of these premises are well kept and in good sanitary condition.

Water Supply.—The supply is ample and of excellent purity.

Dairies, Cowsheds, and Milkshops.—62 inspections of the cowsheds and dairies were made, and the conditions which obtained were very satisfactory.

Unsound Food.—Two parcels of fish were destroyed as unwholesome, but no proceedings were taken with respect to the same.

52 inspections of the slaughter houses were made, and these were found to be well kept.

Sewerage and Drainage.—The water-carriage system is chiefly in vogue, the pail system being adopted only in a very few instances, but it is carried out satisfactorily.

The sewerage system is inadequate for the requirements of the District, but great efforts are now being made to improve matters by the construction of a new outfall sewer discharging into the sea beyond low water mark at a cost of £27,000. Improvements are badly needed in the western part of the District.

IMPROVEMENTS.

Extension of sewers in Duffryn Road, Port Talbot, and Taibach.
 Repairs and renovation of sewage works at Bryn.
 A new trunk sewer (started).
 Water extensions to new houses at Port Talbot and Taibach.
 Repairs to Oakwood and Hafod supplies, water meters, etc.
 Reinstated road slip at Ynysygwas Quarries.
 Making up and improving Morfa Road, Tydraw Hill.
 New footways at Trissent, Margam, and new steps, approach Constant Row.
 Widening and making Mynydd Bychan Road, etc.
 New footways, new abutments and walls, post tube and fencing, etc., to various parts of the District.

REQUIREMENTS.

Refuse destructor.
 Public slaughter house.
 Public mortuary.

MOUNTAIN ASH.

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

Area in acres, 10,493.

	1891.	1901.	1908.
Population	20,976	31,093	42,000 (estimated).
Birth-rate, 39·8.	Death-rate, 15·7.	Zymotic death-rate, 2·4.	Infant mortality-rate, 147.
	Phthisis death-rate, 0·61.	Respiratory diseases death-rate, 2·90.	

INFECTIOUS DISEASES.

251 cases were notified as compared with 1902 in 1907. These included *Diphtheria* and *Membranous Croup* (88 cases, 8 deaths); *Erysipelas* (28 cases); *Scarlet Fever* (106 cases, 2 deaths); *Enteric Fever* (26 cases, 1 death); and *Puerperal Fever* (3 cases, 2 deaths).

Scarlet Fever.—12 cases were notified in the first, 14 in the second, 26 in the third, and 54 in the fourth quarters respectively. This disease occurred in the epidemic form in the Ynysybwyl Valley in the fourth quarter, when the Trerobart Schools (all Departments) were closed, resulting in a check as to the spread of the disease. The Schools were thoroughly disinfected by the Sanitary Inspector.

Diphtheria.—88 cases occurred as against 49 in 1907. The disease almost assumed the epidemic form at Penrhiwceiber. In the majority of cases there was a common milk supply, and a sample of the milk was taken for bacteriological examination, but with negative result.

Enteric Fever.—26 cases were notified as against 11 in 1907. The 5 cases at Pontcynon were due to the drinking of contaminated water from two spouts by the roadside. Bacteriological examination of samples of the water indicated sewage contamination. These spouts were closed and no further cases occurred. The origin of the other cases notified was not traced.

Puerperal Fever.—3 cases were notified. The midwives in attendance on the patients were warned not to attend any other cases until the infection was over and until their clothes and instruments had been thoroughly disinfected, they were also suspended from practice for a month.

GENERAL CONDITIONS.

House Accommodation.—38 houses were certified as against 360 in 1907. The cellar dwellings in the District were inspected by the Medical Officer of Health and Inspector of Nuisances, and in most cases these were found not to be in accordance with the requirements of the Public Health Act, 1875. Notices were served for the necessary alterations, with the result that these premises were converted into single dwelling houses, and the under dwellings abandoned.

The house accommodation throughout the District is satisfactory.

Sewerage, Drainage, &c.—The sewers are fairly satisfactory. Steps are being taken to connect the drains of 46 houses at Carnetown with the main sewer; and application has been made to the Merthyr Borough Council for permission to connect the drainage of 17 houses at the Basin, Abercynon, with their sewers.

Subsidiary sewers have been relaid at Herbert and Gertrude Streets, Abercynon, upper portion of Penrhiwceiber Road, Penrhiwceiber, and some 250 yards at Cardiff Road, Mountain Ash.

Refuse Removal.—This is carried out daily, partly by the Council's workmen, and partly by contract. The work is done in a satisfactory manner.

Water Supply.—An abundant supply has been obtained from the seven reservoirs, which have a total capacity of over 46 million gallons. The samples of water that were periodically taken for chemical analysis and bacteriological examination gave good results.

Common Lodging Houses.—The premises in Duffryn Street are kept clean and in good order. Tower Buildings, Miskin, has also been recently altered, and is now registered as a common lodging house.

Slaughter Houses.—These are 10 in number, a new one having recently been erected at Abercynon. A public abattoir is advocated.

Unsound Food.—The following articles were condemned as unfit for human food:—Two carcases of tuberculous beef, weight 1,200 lbs., 1 box of apples, weight $\frac{3}{4}$ cwt., 1 bag of cockles, weight 1 cwt., and two boxes of fish, weight 12 stone. These articles were not exposed for sale.

Dairies, Cowsheds, and Milkshops.—There are 107 on the register. Great improvement has been effected in the lighting and ventilation of the cowsheds throughout the District.

During the second quarter of the year, Anthrax was reported to have occurred at a farmhouse called Pentwyn-isaf. Every precaution was taken, and the cowsheds were thoroughly disinfected by the Sanitary Inspector; the dead animals were buried in accordance with the requirements of the Board of Agriculture.

Nuisances.—1,200 notices were served, and only in *one* case was it necessary to take legal proceedings.

Infectious Diseases Hospital.—19 cases were removed to Hospital, viz. :—Diphtheria, 3; Scarlet Fever, 8; Enteric Fever, 5; and Erysipelas, 1. Only one death occurred.

Public Health (Tuberculosis) Regulations, 1908. The Medical Officer of Health recommends that leaflets of instruction should be printed and circulated throughout the District giving the provisions, etc., of this Act.

Small Pox Hospital.—The Medical Officer of Health urges the Council to acquire a site without delay, and proceed to erect the Hospital, in order to cope with any cases that may occur of this disease.

Medical Inspection of School Children.—A Medical Inspector has been appointed, and the work of inspection is being carried out in a satisfactory manner.

IMPROVEMENTS.

Pleasure ground for Penrhiwceiber.

Approach Road, Abercynon Cemetery.

New cemetery at Mountain Ash.

Private street works in various parts of the District.

The relaying of subsidiary sewers in parts of the District.

REQUIREMENTS.

A Small Pox Hospital.

Public Abattoirs for various centres.

NEATH BOROUGH.

Medical Officer of Health—J. M. MORRIS, M.A., M.B., D.P.H.

Area in acres, 1,161.

	1891.	1901.	1908.
Population	11,059	13,720	16,800 (estimated).
Birth-rate, 33.1.	Death-rate, 17.1.	Zymotic death-rate, 2.26.	Infant mortality-rate, 131.
	Phthisis death-rate, 1.25.	Respiratory diseases death-rate, 3.15.	

INFECTIOUS DISEASES.

62 cases were notified as compared with 60 in 1907. These included *Diphtheria* and *Membranous Croup* (14 cases, 5 deaths); *Erysipelas* (12 cases, 1 death); *Scarlet Fever* (25 cases); and *Enteric Fever* (11 cases, 3 deaths).

10 deaths occurred from *Measles*, 3 from *Whooping Cough*, 17 from *Diarrhœa*, and 1 from *Enteritis*.

GENERAL CONDITIONS.

Housing.—Good progress is said to be made with the erection of the hundred municipal houses contemplated in the Housing Scheme. In regard to the closing of insanitary property, some of the worst has already been dealt with, and it is intended to take further steps in the matter during the ensuing year.

65 new houses were built and completed by private enterprise, but there is still a need for dwellings to suit the ordinary workman.

Water Supply.—There was a constant supply except during July 5th, August 19th to 28th, when it was limited to the hours of 7 a.m. to 8 p.m. The water is stated to be of good quality.

Common Lodging Houses.—There is noted a good deal of improvement owing to the supervision by the Head Constable, but the condition of these houses still calls for reform; many of these houses are quite unsuited for the purpose.

Dairies and Cowsheds.—These have been duly inspected and found clean, although the cubic space is said to be limited in some cowsheds.

Factories and Workshops.—These have been inspected, and considerable repugnance to fresh air in workrooms is usually found.

Medical Inspection of School Children.—The Medical Officer of Health was appointed Medical Officer under the new Act, and he intends shortly to present a report to the Education Committee upon its working.

Public Health Acts Amendment Act, 1907.—Application has been made by the Council to the Local Government Board for the adoption of this Act, and sanction has been received.

Meat and Food Inspection.—The slaughter house was visited several times weekly by the Sanitary Inspector, and frequently by the Medical Officer of Health. Eight tuberculous carcasses were seized and destroyed by order of a Justice. Two prosecutions were taken, one against a fishmonger respecting decomposed fish, and one as to milk below the standard.

IMPROVEMENTS.

Additions to the Corporation Houses at Mount Pleasant.

Erection of sanitary conveniences for both sexes in the Victoria Gardens.

Early closing of shops.

REQUIREMENTS.

Replacing of iron conveniences by modern structures, especially required in the case of the one in Eastland Road.

Appointment of Health Visitor, to safeguard the lives of infants and mothers, with consequent adoption of the Early Notification of Births Act.

Consideration of suggested schemes for improving the recreation of the people, *e.g.*, the proposed bowling green, etc.

Additions to the byelaws referring to the back annexes of adjoining houses, and the removal of the insanitary glass "conservatories," along with the compulsory provision of back roads for all new roads.

Bye-laws for "Houses let in Lodgings" urgently required.

Improvement in the means of inspection of carcasses of animals slaughtered outside the Borough, but sold inside.

OGMORE AND GARW.

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

Area in acres, 17,926.

	1891.	1901.	1908.
Population	13,080	19,907	24,000 (estimated).
Birth-rate, 39·7.	Death-rate, 13·8.	Zymotic death-rate, 1·12.	Infant mortality-rate, 120.
	Phthisis death-rate, 0·75.	Respiratory diseases death-rate, 1·66.	

INFECTIOUS DISEASES.

132 cases were notified as compared with 139 in 1907. These included *Diphtheria* and *Membranous Croup* (59 cases, 5 deaths); *Erysipelas* (10 cases); *Scarlet Fever* (44 cases, 1 death); *Enteric Fever* (13 cases, 2 deaths); and *Puerperal Fever* (6 cases, 2 deaths).

Three deaths occurred from *Measles*, 3 from *Whooping Cough*, 13 from *Diarrhœa*, and 13 from *Enteritis*.

Scarlet Fever.—44 cases were notified, 20 in the Ogmores Division, and 24 in the Garw Division. Disinfectants were freely used in every case, and the children were prohibited from attending School for six weeks after the last case in each house.

Diphtheria and Membranous Croup.—22 cases occurred at Pontycymmer, 19 at Blaengarw, 11 at Bettws (Pontyrhyl)—a total of 52. 37 of these cases were removed to the Isolation Hospital, and the other 15 were treated at home. The milk supply was inquired into, but no cause of suspicion of its contamination could be discovered. In several of the streets where cases occurred defective ventilation of drains were found.

Enteric Fever.—4 cases occurred in the Ogmore and 9 in the Garw Division. The water and milk supply in these cases were inquired into and seemed to be satisfactory.

Isolation Hospital.—40 cases of Diphtheria and 5 of Typhoid Fever—out of 59 and 13 respectively—were treated at the Hospital during the year. 4 deaths occurred from Diphtheria, equivalent to a case-mortality of 8·8 per cent. of those admitted. The Enteric cases were discharged cured. The Medical Officer of Health strongly recommends the erection of a new block for the isolation of Scarlet Fever. Since the resolution was passed by the Council deciding to obtain Magistrates' Orders for the removal to Hospital of persons suffering from infectious diseases who could not be properly isolated at home, all reported cases have been removed to the Hospital. Swabs are taken from time to time from the throats of the Diphtheria patients and sent to the County Laboratory for examination, and when the result is negative the patients are discharged. The Hospital is in charge of a Matron, two Nurses, two maids, and the Medical Officer of Health acts as Medical Superintendent.

GENERAL CONDITIONS.

Water Supply.—The Gilfach supply was very intermittent during the summer weather and numerous complaints were received as to deficient and irregular supply. There is no means of storage, although it is stated that the same could be provided at a reasonable cost at the upper end of the brook.

The Garw supply is ample and wholesome, but complaints have been made of the water being turned off for repairs without sufficient notice of the fact being given the people.

Drainage.—This is said to be fairly well carried out, but the need of more ventilating shafts is emphasised.

House Accommodation.—The Medical Officer of Health remarks:—"The new houses which are constantly increasing in the District are built on approved plans, and are generally of good class cottages, each house drain being separately ventilated. The Council has not taken any action under the Housing of the Working Classes Act, but I find that private enterprise is coping very well with the housing requirements."

Slaughter Houses.—In September the Medical Officer of Health presented a special report upon the slaughter houses in the District. The Blaengarw structures are said to be the worst, being small and generally untidy, and one was filthy and stinking when inspected, besides having no proper partition between slaughter house and lair, so that animals were being slaughtered in full view of those in the lair. The Pontycymmer slaughter houses were better and kept fairly clean, but these are near houses and are not provided with cooling rooms. One of the Nantymoel slaughter houses is situated underneath a dwelling house, and the other two are in close proximity to dwellings; whilst the Ogmore Vale ones—four in number—although clean, adjoin dwellings, and will always be more or less a nuisance on their present site.

Dairies and Cowsheds.—These are periodically inspected, but though the Order has been adopted by the Council for some time, it is only recently that notices have been served upon the vendors to register themselves.

Schools.—Both the Sanitary Inspectors and Medical Officer of Health visited the Schools regularly, and found the Schools and latrines clean and well looked after. The medical inspection of School children has been the means of discovering several cases of impaired vision and defective hearing.

IMPROVEMENTS.

Shwt water supply.

Reconstruction of roads and bridges in various parts of the District.

Extension of the Ogmore outfall sewer to Bryncethin Farm (in hand).

Road improvement at Glynogwr.

REQUIREMENTS.

Public Abattoirs.

Completion of the sewerage scheme at Gilfach Goch.

Carrying of the Ogmore sewerage to the sewage farm, which for some reason is very slow in its progress.

The provision of refuse destructors in both Divisions, as the question of refuse disposal is becoming a serious one for the District.

A systematic carrying out of ventilating all house drains in the District.

The provision of hydrants throughout the District to supply watering carts and so prevent the possibility of polluting the water in the mains.

OYSTERMOUTH.

Medical Officer of Health—A. LLOYD JONES, M.R.C.S., D.P.H.

Area in acres, 2,615.

	1891.	1901.	1908.
Population	3,598	4,460	5,074 (estimated).
Birth-rate, 27.79.	Death-rate, 13.59.	Zymotic death-rate, 0.59.	Phthisis death-rate, 0.98.
	Respiratory diseases death-rate, 0.98.	Infant mortality-rate, 85.10.	

INFECTIOUS DISEASES.

25 cases were notified as compared with 10 in 1907. These included *Diphtheria* and *Membranous Croup* (6 cases, 1 death); *Erysipelas* (4 cases); *Scarlet Fever* (11 cases); *Enteric Fever* (2 cases, 1 death); *Puerperal Fever* (1 case); and *Cerebro-Spinal Meningitis* (1 case, 1 death).

GENERAL CONDITIONS.

Water Supply.—The Medical Officer of Health remarks: "The public supply of this District is in the hands of a private Company, and its waterworks consist of a pumping station in Caswell Bay, a reservoir at the summit of Newton Hill at an elevation of some 300 feet, and the distributing mains running eastward, and supplying the whole of the inhabited area. This water is supplied without filtration or softening, and the service is only intermittent during the working hours of the day. The pumping station is at the mouth of the Caswell basin, and is built in concrete over the opening of the subterraneous caverns that feed this inexhaustible well. The average flow is much augmented directly after rain, and very rarely has been sensibly diminished after drought. Owing to the formation underlying the greater extent of this watershed being fissured limestone, very little water is visible on the surface, except at the head of the tributary valleys. The pump occasionally draws water from the old well in Caswell Bay, but owing to impregnation with sea-water, this extra supply is practically abandoned. Of the sources, the Murton stream is the most unsatisfactory, as the adjoining farms and cottages necessarily pollute it with their household and farmyard drainage, and to this contamination is undoubtedly owing the discolouration of the well water directly following heavy floods.

This private water supply has now been in existence over 20 years, and on the whole has satisfied public wants remarkably well considering its intermittent character, excepting that in summer months the pumping is hardly equal to the increased household demands and to the drain of the dust-laying water carts. The water is quarterly analysed at the Cardiff and County Laboratory, chemically and bacteriologically and although pronounced to be not above suspicion as a drinking water, no known illness has been attributed to its use. If it should become a public water supply, its reservoir capacity will have to be quadrupled, and the water itself *filtered* and *softened*; then, and not till then, will it be a water above all suspicion, and be as good in quality and quantity as any in the County."

Sewerage and Drainage.—The sewerage of Newton was commenced seven years ago, but has not yet been connected with the main system discharging into the sea. In other parts than along the line of sewers the houses are served with their own cesspools.

Slaughter Houses.—There are four in the District, of which two only are registered and licensed under the Public Health Act, and these are stated to be well ordered.

Excrement and Refuse Disposal.—The cesspool sewage is aspirated into a hermetically sealed drum and distributed over agricultural land, as far removed as possible from human habitations. Privy excrement is mostly buried in the gardens of the occupiers, and where this is impossible it is carted away with the other household refuse and ash.

Dairies, Cowsheds, and Milkshops.—There are 28 persons registered in the District. Dairies and milkshops are supervised as regards their cleanliness only, and the sole check upon the character of the milk supplied is an occasional taking of samples for analysis by the County Police.

Factories and Workshops Act.—The retail bakehouses, of which there are five, come under this Act, and they all, so far, have complied with it. One underground bakehouse has been opened during the year, but it has not yet been registered.

Nuisances.—385 inspections were made, 89 informal notices, and in 268 instances the defects have been remedied.

Isolation Hospital.—This District is combined with the Gower Rural Sanitary Authority for the provision of isolating the infected sick. Progress is now being made in the selection of a site for a combined Isolation Hospital, and when erected, such a contingency will at last be provided for.

School closure was required owing to the prevalence of Measles.

One special report on Cerebro-Spinal Fever was presented.

IMPROVEMENTS.

The making up of Walters Crescent under the Private Street Works Act.

Extension of the lighting system.

Extensions of sewers.

Concreting of footpaths and replacing pebble gutters by concrete gutters.

The laying-out of the Promenade, and the erection of public conveniences thereon.

The provision of a mortuary.

Extension of sewerage system to Newton (in hand).

Laying of 18-inch outfall pipes (in hand).

Enlargement of tidal tank.

REQUIREMENTS.

Not specified.

PENARTH.

Medical Officer of Health—C. D. MUSGROVE, M.D.

Area in acres, 2,798.

	1891.	1901.	1908.
Population	12,200 ..	14,227 ..	16,000 (estimated.)
Birth-rate, 21.9.	Death-rate, 10.3.	Zymotic death-rate, 0.5.	Infant mortality-rate, 105.4.
	Phthisis death-rate, 0.7.	Respiratory diseases death-rate, 1.37.	

INFECTIOUS DISEASES.

92 cases were notified as compared with 120 in 1907. These included *Diphtheria* (39 cases, 2 deaths) ; *Scarlet Fever* (42 cases, 3 deaths) ; *Enteric Fever* (1 case) ; and *Erysipelas* (10 cases).

The number of notifications is considerably less than in the previous year, and it is worthy of note that the majority of cases were of a very mild type.

67 cases were treated at Hospital, also 4 cases were sent out to the Hospital for purposes of observation, and as these cases turned out "negative," they were not included in the list of cases for the year. There were 3 deaths, 1 from *Diphtheria* and 2 from *Scarlet Fever*.

GENERAL CONDITIONS.

Water Supply.—Samples were analysed four times during the year, and found to be "soft, and of great purity."

Milk Supply.—The dairies and cowsheds have been frequently inspected and found to be clean and wholesome.

Slaughter Houses.—These have been frequently inspected and found satisfactory.

Seamen's Lodging Houses.—These were inspected at intervals and found clean and well conducted.

A resolution has been passed by the Council that in future no licences for these will be granted unless the house has been fitted with a flushing tank for the w.c.

Factories and Workshops.—There are now 73 workshops on the register, all of which have been inspected by the Sanitary Inspector.

Cards have been drawn up by the Medical Officer of Health as to the "Care of the home," and he has started a course of lectures on the subject matter they contain.

IMPROVEMENTS.

Not stated.

REQUIREMENTS.

Not stated.

PONTYPRIDD.

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

Area in acres, 8,033.

	1891.	1901.	1908.
Population	19,971 (old area)	32,316.	38,674 (estimated).
Birth-rate, 35·8.	Death-rate, 15·8.	Zymotic death-rate, 2·9.	Infant mortality-rate, 181.
	Respiratory diseases death-rate, 2·4.	Phthisis death-rate, 1·03.	

INFECTIOUS DISEASES.

235 cases were notified as compared with 126 in 1907. These included *Diphtheria* and *Membranous Croup* (61 cases, 9 deaths); *Erysipelas* (10 cases, 1 death); *Scarlet Fever* (144 cases, 1 death); *Enteric Fever* (17 cases); and *Puerperal Fever* (3 cases).

One death occurred from *Measles*, 12 from *Whooping Cough*, 57 from *Diarrhœa*, and 6 from *Enteritis*.

Diphtheria and Membranous Croup.—61 cases were notified as compared with 43 in 1907. The case-mortality was 14·7, as compared with 6·9 in the previous year. 27 of the cases were treated at the Isolation Hospital.

Enteric Fever.—17 cases were notified as against 12 in the previous year. As in 1907, the District was free from an epidemic of the disease. Of the 17 sporadic cases notified, none proved fatal, hence the case-mortality was nil. 10 of the cases were treated at the Hospital.

Diarrhœa.—In consequence of the prevalence of this disease and the excessive mortality therefrom in certain Districts throughout the country during the third quarter of the year, a request was received from the Local Government Board for a report on the excessive mortality from *Diarrhœa* in the Pontypridd Urban area during the above period.

During the past 10 years severe outbreaks of summer *Diarrhœa* have taken place in this District. On four occasions during that time the deaths from *Diarrhœa* have exceeded 50 in number. The seasonal outbreak which was co-incident with the onset of the hot weather, may be said to have begun in the last week of July, and continued throughout August and in September up to the 18th of that month in a severe, virulent form, without abatement. From September 18th up to October 6th there were no deaths, but from the latter date until the 20th of the same month, a period of unusually hot weather at that time of the year, 7 more deaths occurred. Of the 57 deaths from *Diarrhœa*, 52 were those of children under one year of age. Of the 45 ascertained cases, five-sixths of the fatal cases occurred amongst artificially fed infants.

GENERAL CONDITIONS.

House Accommodation.—201 new dwellings were occupied during the year. The chief centres of activity in the building trade were the Rhondda and Treforest Wards.

Sewerage and Drainage.—There are still a few of the older premises unconnected to the sewerage system. These are being gradually reduced in number from year to year, and four were connected during the year.

Removal and Disposal of Refuse.—The removal of house refuse has been satisfactorily effected, but its disposal has been a matter of great difficulty owing to the absence of suitable tipping sites. It is satisfactory to note that the new refuse destructors will, at an early date, be complete and ready to deal with the refuse of the District. The new destructors will be capable of consuming 90 tons of refuse in 24 hours.

Water Supply.—The supply was adversely reported upon in April, July, and October. Complaints as to scarcity were numerous throughout the year. In July, in order that the Isolation Hospital should be supplied with water, it became necessary to shut off the whole of the supply of the District from Cilfynydd to Treforest, thus causing much inconvenience to a District of about 20,000 people. All the higher reaches of the District had to be put on short allowances in the summer. Numerous cases of plumbism occurred during the year, and dissolved lead equal to $\frac{1}{14}$ th of a grain per gallon was found in the water by the Analyst in July.

Plumbism.—On December 2nd, 1908, the Local Government Board desired to be furnished with information as to whether, in the Council's District, during recent years, cases of lead-poisoning have been ascribed to the water supply, and as to whether any action has been taken with a view to preventing plumbo-solvency of the water. The Medical Officer of Health explains in detail the steps taken by him in order to comply with the Board's request.

Dairies, Cowsheds, and Milkshops Order.—There are 48 cowkeepers and dairymen and 58 milk vendors engaged in the milk trade in the District.

The cowsheds and dairies were visited twice during the year. The general condition of the cowsheds and their surroundings are gradually improving. The farmers are now beginning to realise the necessity of better accommodation being provided for milch cows.

Bakehouses.—These number 20. They were regularly visited and inspected and were found to be kept in a good sanitary condition.

Slaughter Houses.—These were frequently inspected and found to be clean and satisfactory.

Common Lodging Houses.—There are 13 registered in the District. The Inspector (Deputy Chief Constable Cole) states in his report that they have been regularly visited and found to be periodically limewashed and otherwise cleansed.

The lodging house in Foundry Place was considerably enlarged, so as to afford further accommodation for 49 persons, making 119 beds in all. In February, the Medical Officer of Health reported to the Council that no provision was made for bathing at this lodging house, and suggested that at least five baths be fixed up for the convenience of lodgers, and that the new premises be not registered until this was carried out. Nevertheless, the whole of the premises were permitted to be registered. Bathing facilities are of the utmost importance as regards common lodging houses.

Medical Inspection of School Children.—Dr. E. J. Griffiths was appointed in May, 1908, to devote the whole of his time to the medical inspection of the school children. The work done in this direction is set out in a report which has been presented to the Education Committee and a copy sent to the Local Government Board.

IMPROVEMENTS.

New viaduct extending from Mill Street over the River Rhondda and Rhondda Road.

Improvements of the Rhondda Bridge.

Berw Bridge over the River Taff in ferro-concrete.

REQUIREMENTS.

Public lavatories and conveniences.

Public mortuary (site secured).

Refuse destructor (near completion).

Public baths.

Improved water supply.

PORTHCAWL.

Medical Officer of Health—J. D. ALEXANDER, L.R.C.P.E., &c.

Area in acres, 3,365.

	1891.	1901.	1908.
Population	1,673 ..	1,871 ..	3,425 (estimated).
Birth-rate, 13.0.	Death-rate, 8.0.	Zymotic death-rate, 0.29.	Infant mortality-rate, 65.
	Phthisis death-rate, 0.87.	Respiratory diseases death-rate, 1.16.	

INFECTIOUS DISEASES.

24 cases were notified as compared with 20 during 1907. These included *Diphtheria* and *Membranous Croup* (1 case, 1 death); *Erysipelas* (1 case); and *Scarlet Fever* (22 cases).

Scarlatina.—The 22 cases notified were of a mild type; the first 3 cases were contracted from visitors to Porthcawl. Owing to the cases being so slight, most of the children were allowed to attend School and thus spread the infection. 11 cases were removed to the Isolation Hospital (which was open to the Porthcawl Urban District patients for the first time during the year). All the patients treated at the Isolation Hospital speak very highly of the kindness and excellent treatment received.

Diphtheria.—1 case was notified after death, but it was not verified by bacteriological examination.

GENERAL CONDITIONS.

Water Supply.—The town main is supplied from the Craig-yr-Aber reservoir. The scheme generally is working satisfactorily and is much appreciated. In September last a Local Government Board Inquiry was held into the Council's application to borrow £2,500 for extra works and extensions of mains; the loan was sanctioned.

Two public wells were closed by Justices' Order.

Sewerage.—The sewage is disposed of by pumping into the sea. Extension of the sewer has been carried out at Mackworth Road, and a new sewer laid at the rear of John Street, the drains from the Sea Serpent sewer being diverted into the same.

Scavenging.—The street scavenging and house refuse collection is carried out by the Council by direct labour. The refuse of the town portion of the District is deposited in Mercies Quarry, New Road, situated about 240 yards from the nearest dwelling house, and is deodorized with lime. The Newton and Nottage refuse is deposited on fields, where it is worked on the land without creating a nuisance.

Drainage of Buildings.—29 houses situated within the statutory distance of the sewers remain unconnected. It is intended to serve notices on the owners of all premises unconnected with the sewers calling upon them to connect the same wherever possible.

Slaughter Houses.—There are four private ones, which have been periodically inspected and found fairly satisfactory. Only one notice was served as to the cleansing and limewashing of one of the slaughter houses.

New Buildings.—Plans were approved by the Council for 30 dwelling houses, 7 shops, 5 additions, 3 stables, and 1 road. During the year 43 occupation certificates were granted in respect of all buildings.

Camps.—Some 4,000 Territorials encamped on Lock's Common, and detachments of two Militia Regiments encamped at Newton. The Camps were under the Medical Officer of Health's supervision. All the scavenging and water supply arrangements were controlled by the Council, and necessitated the laying of about 2,000 yards of water service, together with the necessary fittings.

The Newport Church Naval Brigade and the Y.M.C.A. also encamped during the summer.

Nuisances.—33 preliminary and 10 statutory notices were issued, in addition to verbal instructions given to abate nuisances.

IMPROVEMENTS.

A combined sanitary convenience for men.

Tar dressing of roads extended to Newton and Nottage.

Erection of 12 additional street lamps.

A properly constituted and fully equipped Fire Bigade, consisting of 12 members, has been organized under the control of the Council.

Extension of Newton Beach Road (nearing completion).

REQUIREMENTS.

Further provision of sanitary conveniences.

RHONDDA.

Medical Officer of Health—J. D. JENKINS, M.D., B.S., D.P.H.

Area in acres, 23,884.

	1891.	1901.	1908.
Population	88,351	114,439	133,137 (estimated).
Birth-rate, 41.0.	Death-rate, 18.9.	Zymotic death-rate, 4.01.	Infant mortality-rate, 183.
	Phthisis death-rate, 0.72.	Respiratory diseases death-rate, 3.71.	

INFECTIOUS DISEASES.

862 cases were notified, an increase of 89 as compared with the previous year. These included *Diphtheria* and *Membranous Croup* (185 cases, 32 deaths); *Erysipelas* (51 cases, 1 death); *Scarlet Fever* (507 cases, 7 deaths); *Enteric Fever* (93 cases, 21 deaths); *Continued Fever* (3 cases); and *Puerperal Fever* (23 cases, 11 deaths).

Measles.—102 deaths occurred from this disease, equivalent to a death-rate of 0·77 per 1,000. The greatest number of deaths occurred in January and March, with 24 and 25 deaths respectively. During the month of January the Infants' Departments of several Schools were closed for varying periods owing to the Measles epidemic.

Scarlet Fever.—507 cases were notified, 7 of whom died, equivalent to a death-rate of 0·05 per 1,000. The type of this disease during the year seems to have been milder than at any time since the adoption of the Notification Act in 1894. The portion of the Hospital extensions designed for the accommodation of Scarlet Fever patients was approaching completion towards the end of the year, and it is expected that they will be available for use early in 1909.

Diphtheria.—185 cases were notified, and 32 died, equivalent to a death-rate of 0·24 per 1,000. The average number of occupants was greater in the infected houses than for the whole District, being 6·6 and 5·9 respectively.

Typhoid Fever.—Only 96 cases were notified, *the smallest number since 1894*. The proportion of secondary to primary cases was somewhat higher than usual. Out of the total of 96 cases, 24 or 25 per cent. were secondary. 70 cases, or 73 per cent., were removed to Hospital. The greatest number of notifications were received in January, which contributed 23. These included a large group of 7 cases which occurred almost simultaneously in one house at Blaenrhondda. During the rest of the year the District enjoyed comparative freedom from Typhoid Fever.

Diarrhœa.—319 deaths were recorded from this disease, as compared with 147 during 1907. In consequence of the great prevalence of this disease during the late summer and early autumn, a special report was presented to the Health Committee. The various contributory causes of this disease are discussed at length, and measures for its reduction are indicated.

Puerperal Fever.—23 cases were notified, and of these 11 died, equivalent to a death-rate of 0·08 per 1,000, or a case-mortality of 47·82 per cent.

GENERAL CONDITIONS.

Scavenging and Refuse Disposal.—The refuse, as hitherto, with the exception of about 16 tons which are daily burnt at the destructor situated at Ystrad, is deposited on about 12 tips, distributed more or less conveniently within the limits of the District. Nearly all of these tips are near dwellings, a very unsatisfactory condition of things, which the Council fully appreciate, and the Health Committee have given much time to the matter. For the purpose of assisting the Committee in dealing with the question, a Sub-Committee, accompanied by the Surveyor and Medical Officer of Health, visited a number of places throughout the country, at which several of the different forms of destructors were known to have been erected, and later they submitted a detailed report on destructors on the one hand and conveyance by means of ropeways to the hill-tops on the other. After much discussion, and finding that the capital cost of an aerial ropeway would be one-third that of a destructor, it was recommended that the Council endeavour to obtain land

for this purpose, and failing the acquisition of suitable land for a ropeway and tip, the alternative scheme for a destructor be adopted. Although the greater distance from dwelling houses at which it is intended to place the tips associated with ropeways, large masses of decomposing house and other refuse will serve as a breeding ground for myriads of flies, whose invasion of dwellings will certainly prove a nuisance, and may become a positive danger to the public health.

Sewerage.—Only some 468 house drains remained unconnected at the end of the year. Some of the groups of houses included in this number are too low to allow connection with existing sewers, others have no sewers within the statutory distance. With reference to the houses in Carolina Street, Blaenrhondda, the Council decided to lay the length of sewer necessary to make it possible to effectually drain this group and the contract for the work has been duly signed.

Water Supply.—The new Llyn Fawr scheme is well in hand, 2,000 yards of the tunnel have already been bored, and invitations for the construction of the reservoir (Llyn Fawr deepened and otherwise altered) were issued towards the end of the year. When completed, about 1911, the scheme will provide an additional storage capacity of 167,000,000 gallons. The total area supplied by the Council amounts to 15,182 acres, distributed over which are not only the 11,417 houses supplied by the Council, but other groups as well. 343 new services were laid in the course of the year, and the consumption per head of the population at 5.92 persons per house, amounted to 21.72 gallons for domestic purposes, an additional 0.62 gallon per head being used for trade purposes. Owing to the plumbo-solvent action of the water supplied by the Pontypridd Water Company, circulars were framed by the Medical Officer of Health and circulated within the affected area, instructing householders as to the precautions they should adopt with regard to the water.

House Accommodation.—829 new houses were passed for occupation during the year. The reconstruction of the Blaenllechau Huts (55 in number) by the Ferndale Colliery Company is nearly completed; cost about £700.

Common Lodging Houses.—These are six in number—four in Ystrad and two in Dinas. Regular inspections of these premises were carried out and they were found to be generally satisfactory. However, there still appears to be a great need for well-designed and well-managed houses of this character in several parts of the District.

Penrhys Isolation Hospital (Small Pox).—This Hospital has been completed. The buildings consist of an administrative block, one pavilion with accommodation for 16 beds, distributed in two wards of equal size, a small pavilion with accommodation for four beds in two wards with two beds in each, together with a laundry block, comprising a laundry, disinfecting-tank room, mortuary, ambulance shed, and coalhouse. Structurally the buildings are of the "temporary" kind, and are built of corrugated iron, with "Stonwood" floors. The total cost of the Hospital, excluding labour supplied by the Council, surface drainage, and material used in laying the foundations for the buildings and concrete for the "Stonwood" flooring in the administrative block and the two ward pavilions, amounted to £3,316 8s. 1d.

Employment of Children Act, 1903.—Bye-laws in pursuance of the provisions of this Act received the sanction of the Home Secretary in 1907. The Act has been since administered by the Police Authorities of the County of Glamorgan.

Factories and Workshops Act, 1901.—There are 1,178 workshops in the District. At present all known newly-established workshops and workplaces are inspected and the facts so ascertained are recorded. Revisits are paid as circumstances require, but periodical and systematic inspections of all workshops is not practicable with the present staff if other and more urgent work is to receive due attention.

Medical Inspection of Children in Elementary Schools.—The Medical Officer of Health was appointed as School Medical Officer to organise, superintend, and supervise the medical inspection of the children attending the Elementary Schools. A male Medical Inspector was appointed on 9th October, but he resigned on 4th December. Although an advertisement was immediately issued, it was not found possible to appoint another Medical Inspector until after the termination of the year, hence the work of medical inspection of school children was not commenced until 1909. The number of children on the registers of the Council's Schools on January 1st, 1909, was 30,244; these are taught in 40 Schools, sub-divided into 91 Departments, and it is estimated that in order to comply with the Board of Education's requirements, 5,349 children should be medically examined before July 31st, 1909, but such an achievement will be impracticable owing to the delay at the commencement caused as above indicated.

IMPROVEMENTS.

Not stated.

REQUIREMENTS.

A better system of refuse disposal (under consideration).

A better water supply (in hand).

RURAL DISTRICTS.

COWBRIDGE.

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

Area in acres, 40,015.

	1891.	1901.	1908.
Population	6,072	6,372	8,000 (estimated).
Birth-rate, 29.5.	Death-rate, 14.2.	Zymotic death-rate, 1.2.	Infant mortality-rate, 105.
	Phthisis death-rate, 1.37.	Respiratory diseases death-rate, 1.12.	

INFECTIOUS DISEASES.

68 cases were notified as compared with 34 in 1907. These included *Diphtheria* and *Membranous Croup* (29 cases, 4 deaths) ; *Scarlet Fever* (28 cases) ; *Erysipelas* (9 cases) ; *Enteric Fever* (1 case) ; and *Puerperal Fever* (1 case).

Measles.—An extensive outbreak occurred at Llanharan in January, followed by others at Llanmaes and Llantwit Major in July and November respectively ; 1 case proved fatal. At Llanmaes it was brought from Barry, and taken from there to Llantwit Major. In the two last places the disease assumed the hæmorrhagic form.

Scarlatina.—Of the 28 cases notified, 3 occurred in one family. Infection conveyed, it is thought, from Sigginstone to Llantwit, in October, resulted in 9 children contracting the disease there and 5 in the adjoining village of Boverton. School closure was resorted to for six weeks—until the end of the School term. No deaths occurred.

Typhoid Fever.—The man suffering from this disease at Llantwit Major had been previously lodging for some weeks in Cowbridge, but no source of infection could be traced.

Diphtheria.—As far as could be ascertained, the majority of the cases were of a mild type, and only 2 deaths occurred from the 29 cases notified.

GENERAL CONDITIONS.

Water Supply.—With the exception of Llandow, and (for a few days only) St. Donats, no complaints have been received as to any shortness of supply of water for drinking purposes. The Moor Road well at Treos is quite unfit for use in its present unprotected condition ; it should either be repaired and cleansed, or a notice affixed closing it for domestic purposes

The Llantwit Major supply has been abundant during the year and repairs have been effected to some of the street standpipes and to the cattle troughs. It is stated that there are a number of public water supplies in the district which require to be analysed at least once a year, where found unsatisfactory.

Houses.—Workmen's dwellings have been greatly improved of late years. All new houses are substantially built and old ones put into a fair condition of repair. Plans of 127 new houses—84 being at Coed Ely—and four miscellaneous buildings have been passed.

Drainage.—A portion of the sewer at River Row, Pontyclun, has been relaid, and the sewage tanks reconstructed and fresh clinker obtained for them, and also for those at Brynna. A portion of the sewer at Aberthyn has been relaid. It is proposed to instal septic tanks at the Coed Ely Colliery houses, and discharge the final effluent into the River Ely.

Dairies and Cowsheds.—22 are registered, and these have been inspected from time to time.

Factories and Workshops.—109 inspections have been carried out, leading to the discovery of some 19 defects. There are no underground bakehouses in the District, nor any "home workers."

IMPROVEMENTS.

Completion and opening of the Joint Isolation Hospital at Bridgend, with accommodation for 18 patients.

Improvements effected to public water supplies of Llantwit Major and 11 village wells.

Provision of public scavenging at Llantwit Major.

New drainage for a number of houses and inns and the cleansing of Chantry sewer outfall and a portion of the brook at Llantwit.

REQUIREMENTS.

Improved drainage for Brynna, Llantwit Major, and Chapel Row, Llanharan.

Veterinary inspection of meat and dairy cattle.

Improvement of the water supplies in many parts of the District.

Improved burial accommodation where required.

Provision of a portable disinfecting apparatus.

More care and attention to sewage works and outfalls.

GELLIGAER AND RHIGOS.

Medical Officer of Health—W. W. JONES, M.D., D.P.H.

Area in acres, 22,357.

	1891.	1901.	1908.
Population	13,715	18,316	29,774 (estimated).
Birth-rate, 40·3.	Death-rate, 16·7.	Zymotic death-rate, 1·7.	Infant mortality-rate, 158.
	Phthisis death-rate, 0·70.	Respiratory diseases death-rate, 3·08.	

INFECTIOUS DISEASES.

434 cases were notified as compared with 150 in 1907. These included *Diphtheria* and *Membranous Croup* (24 cases, 4 deaths); *Erysipelas* (10 cases, 2 deaths); *Scarlet Fever* (382 cases, 5 deaths); *Enteric Fever* (14 cases, 2 deaths); and *Puerperal Fever* (4 cases, 1 death).

26 deaths occurred from *Whooping Cough*, 10 from *Measles*, 3 from *Diarrhœa*, and 48 from *Enteritis*.

Scarlet Fever.—There were 382 cases, 5 of whom died, equivalent to a mortality of 1·3 per cent. of the cases notified. In the Bargoed and Gelligaer Wards, however, the disease appears to have been of a severe type, as 2 per cent. of the cases notified proved fatal.

Diphtheria.—24 cases were notified, 4 proved fatal, but in 3 cases anti-toxin was not used, as the cases were in *extremis* when first visited.

Enteric Fever.—14 cases were notified, 2 proved fatal. 7 of the cases were removed to the Penybanc Hospital. This disease is less prevalent than in past years, the cases were found to be sporadic, and due to local insanitary causes.

GENERAL CONDITIONS.

Water Supply.—The great bulk of the population obtains its supply from public mains, only a few outlying farms and groups of houses in Gelligaer having to depend upon springs and wells. In Rhigos, however, springs and wells are the rule. Although a scheme was contemplated for impounding water for the Pontwalby district, this has not been realised. In Gelligaer the water is supplied by two Companies, the Rhymney and Aber Gas and Water Co., and the New Tredegar Gas and Water Co., the latter Company supplying the Tirphil Ward.

Periodical analyses of the water, together with the bacteriological examinations of samples taken at different points during the year, show that the water is a good upland surface water, fairly soft, but always needing filtration. In fact, after heavy falls of rain, it has been supplied in a condition which was undrinkable and unfit for domestic use after the heavy storms of October, the water reached the consumers almost like black mud. The supply of the Company is better as regards quantity than it has been for some years past, but the villages of Fochriw and Gelligaer were without a sufficient supply. Steps, however, are now being taken to supply Fochriw from the Merthyr mains, and to adequately filter the whole of the supply from the Blaen Rhymney reservoir, the contract for the latter having been let.

The Medical Officer of Health remarks :—"The object aimed at by the Glamorgan County Council in their proposal to form a Water Board, namely, the conservation of the existing supplies of water in the County and its watersheds, is a sound and proper one, and commends itself to me as a Medical Officer of Health; whether the financial proposals are satisfactory is a question upon which I can express no opinion, but there can be no two opinions upon the question of steps being taken to ensure a proper water supply being available for these great industrial districts in the future."

Sewerage and Sewage Disposal.—With the exception of Gelligaer Village, Hengoed, Pengam, a low-lying part of Bargoed and small outlying groups of houses, *e.g.*, Pantywaun and Bute Town, every part of the Gelligaer Parish is sewered. In order to provide for the sewerage of Hengoed, Pengam, and Gelligaer (with the Cylla Valley) where building is proceeding apace, a scheme was prepared by the Council's Engineer, and inquired into by an Inspector of the Local Government Board. Later a London firm of engineers were engaged to draw up a comprehensive scheme, so as to provide for the reception and disposal of the whole of the sewage of the Rhymney Valley from Rhymney and Pontlottyn to Ystradmynach, on suitable land below Ystradmynach. This enlarged scheme would permit of the sewerage of the whole of the Deri Valley and of the low-lying parts of Bargoed. The matter is now being considered by the parties concerned.

The various bacterial tank systems continue to work well, and the results of analyses of the effluents were invariably good.

Refuse Removal.—All the scavenging in the District is done by contract, the scavenger having usually to find a suitable site for tipping the refuse upon. Much difficulty has been experienced in the past in finding suitable tipping sites, and in this respect the Medical Officer of Health states :—" It is true that a small beginning has been made by the Council in two or three places in leasing plots of ground sufficiently remote from the population, to which the contractor is required to bring the refuse ; but as long as I am Medical Officer of Health, I will not rest until the Council take this matter earnestly in hand and purchase or lease a suitable plot *for every village* for the reception of this noxious matter which is actually, in some cases, tipped near schools and open places where children play. I really do hope that I shall not require to revert in the future, as I have done year after year, to this matter, and that the Council will set itself earnestly to remove this blot on its administration, and also by doing the scavenging itself will make impossible the constant complaints of inhabitants that some streets are passed over day after day ; and, in the absence of *Refuse Destruction*, will support me in my desire to see that it is not tipped, as it is in some cases, almost in the middle of the villages. If it were realised how these heaps heat and ferment and become the breeding places of disease, they would not be tolerated for a day so near dwelling houses."

Slaughter Houses.—There are eight on the register, and one is in course of erection. Except one—at Bedlinog—with which constant difficulty is experienced, they are kept in a satisfactory manner. The difficulty of adequate meat inspection in the case of private slaughter houses is noted, and the abolition of the latter, and the substitution of public abattoirs is recommended. It is stated that three abattoirs would suffice, one at Tirphil, one at Bargoed, and one at Trelewis.

Unsound Food.—Inspector R. J. Davies seized as unfit for food the following articles :—8 pieces of pickled beef, 3 pieces of mutton, 1 rabbit, 2 pieces of bacon, 1 cask of fish, 2 baskets of tomatoes, 30 cabbages, 1 cow's liver, 1 basket of apples, and 30 faggots.

Bakehouses.—These are 29 in number, and are all kept in fair order. There are no underground bakehouses in the District.

Common Lodging Houses.—The nine registered are satisfactory, with the exception of the Thomas Court, Pontlottyn, ones, with regard to the closure of which steps are being taken. Better lavatory accommodation, and the provision of baths are desiderata.

Dairies and Cowsheds.—Of the 131 such premises in the District, many are very unsatisfactory. It is to be hoped that the increased (Urban) powers the Council will possess may result in a general if gradual improvement.

Factories and Workshops.—Some 361 visits of inspection were paid to these premises and 21 defects were noted, and remedied after notice, without any prosecutions being undertaken.

New Buildings.—391 plans of new buildings were passed, 315 being plans of proposed new houses, as compared with 282 in 1907.

Elementary Schools.—Some excellent Elementary Schools exist in the District, and they have been added to during the year at Bargoed, Bedlinog, and Pengam, while a good temporary building has replaced the old insanitary School at Pantywaun. Overcrowding is stated to exist at the Fochriw and Tirphil Schools, and other defects in some of the other Schools.

With regard to the medical inspection, the Medical Officer of Health remarks:—"The new system of medical inspection of Schools has enabled me to receive intimation of at least one instance in which scholars were attending an Elementary School while in an infectious state, the nature of the disease having apparently been overlooked until the child came under the observation of the School Medical Inspector."

Housing of the Working Classes.—5 houses were reported as unfit, 3 were closed, and 2 were structurally altered or rebuilt.

IMPROVEMENTS.

Repairs to mains, meters, etc.

Sewer extensions at Brithdir, Pengam, etc.

Street improvements in various parts of the District.

REQUIREMENTS.

Filtration of the general water supply.

Water supply to Gelligaer and Fochriw.

Sewerage of Pengam, Gelligaer, Hengoed, and Ystrad Mynach.

Provision of an Isolation Hospital.

Appointment of a Building Inspector.

The undertaking by the Council of the scavenging of the District.

The provision of proper means of sewage disposal at Deri and Pontlottyn.

The sanitation of Bute Town.

The provision of public abattoirs, beginning at Bargoed.

GOWER.

Medical Officer of Health—ALFRED E. MOLE, M.B., C.M.

Area in acres, 38,124.

	1891.	1901.	1908.
Population	7,432	7,266	7,266 (estimated).

Birth-rate, 28.6.	Death-rate, 14.3.	Zymotic death-rate, 0.82.	Infant mortality-rate, 100.
	Phthisis death-rate, 1.37.	Respiratory diseases death-rate, 1.51.	

INFECTIOUS DISEASES.

11 cases were notified as compared with 19 in 1907. These included *Diphtheria* and *Membranous Croup* (5 cases); *Erysipelas* (2 cases); *Scarlet Fever* (1 case); and *Enteric Fever* (3 cases).

Some of the Schools had to be closed for short periods owing to epidemics of infectious disease.

The site for building an Isolation Hospital has been decided upon.

GENERAL CONDITIONS.

Water Supply.—The water supply is fairly good except in one or two localities. Extensions have been made in parts of the District, whilst in others it is collected from the roofs of houses and stored.

Slaughter Houses and Cowsheds.—These have been visited and compliance with the bye-laws has been obtained to a very large extent. In the majority of cases the water supply, drainage, and sanitary condition generally is good.

Sewage Disposal.—The privy midden system chiefly obtains in the District; in some Districts earth-closets are in use, and in others there is no accommodation at all.

Bakehouses.—All the bakehouses have been inspected, and one, owing to its insanitary condition, has been closed.

IMPROVEMENTS.

Repairs to pumps and wells at Horton, Knelston, Llanmadoc, Bishopston, and Dunvant.

New pumps provided on Murton, Pyle, and Barland Wells, Bishopston.

REQUIREMENTS.

The adoption of building bye-laws.

Isolation Hospital.

LLANDAFF AND DINAS POWIS.

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

Area in acres, 65,469.

	1891.	1901.	1908.
Population	18,539 ..	23,504 ..	27,032 (estimated).

Birth-rate, 28.33. Death-rate, 11.83. Zymotic death-rate, 1.73. Infant mortality-rate, 99.
 Phthisis death-rate, 0.85. Respiratory diseases death-rate, 1.51.

INFECTIOUS DISEASES.

626 cases were notified as compared with 313 in 1907. These included *Diphtheria* and *Membranous Croup* (85 cases, 5 deaths); *Erysipelas* (10 cases); *Scarlet Fever* (90 cases, 2 deaths); *Enteric Fever* (6 cases); *Puerperal Fever* (3 cases, 1 death); and *Whooping Cough* (432 cases, 19 deaths).

Five deaths occurred from *Measles*, 19 from *Whooping Cough*, 12 from *Diarrhœa*, and 6 from *Enteritis*.

The death-rate from *Measles* was 0.18 per 1,000 of the population. The number of cases which occurred could not be ascertained, the disease being non-notifiable. The following Schools were closed on account of the disease—Tongwynlais and Dinas Powis (January), and Llancarvan (Mixed) and Heath (Infants) in Whitchurch Parish in March.

Scarlet Fever.—The mortality-rate was 0.07 per 1,000 population. The case-mortality was 2.22 per cent. 55 cases, or 61.11 per cent. of those notified were isolated at the Hospital.

The outbreak at Llancarvan was the result of a child having unrecognised illness on a holiday, and returning home in the desquamating stage.

Whooping Cough.—The case mortality was 4.39 per cent., and the death-rate was equal to 0.70 per 1,000 living. 66 of the cases were infants under one year old, of whom 10, or 15.15 per cent., died.

Diphtheria and *Membranous Croup*.—The case mortality was 5.88 per cent. The death-rate 0.18 per 1,000 living. 59, or 69.4 per cent. of the cases notified, were treated at the Hospital. The ages of the fatal cases ranged from 2 to 10 years, and the Medical Officer of Health remarks:—" . . . and I have not the slightest doubt that had the treatment of these cases with anti-diphtheric serum been commenced early enough all the lives would have been saved. The cause of the delay was due to the parents having regarded the disease lightly as one of 'cold.' Fortunately most, but not all, medical men are fully alive to the urgent need of the early use of the above infallible remedy."

GENERAL CONDITIONS.

Water Supply.—A Local Government Board Inquiry was held at Pentyrch on 19th May as to the Council's application for sanction to borrow £1,550 for the purposes of augmenting the water supply of Penygarn and Upper Pentyrch by providing additional storage, etc., but the Board's sanction has not yet been received.

Extension of the water mains are required for the houses on Penyturmpike Road, Dinas Powis. The extension of the mains to Lisvane should prove satisfactory.

Sewerage and Drainage.—Owing to complaints of nuisance arising from the Ely Sewerage Works, Dr. Rideal, of Westminster, was called in to inspect the works, and he found "no evidence of either aerial nuisance or river pollution, and that he doubted whether there could have been any of a serious character in the past."

The drainage of Creigiau, Pentyrch, has been improved, so that there is no longer any pollution of the brook.

A Local Government Board Inquiry was held at Ely on 26th August, as to the Council's application for sanction to borrow £6,481 for purposes of sewerage in Llandaff parish and extension of the Ely Sewage Disposal Works.

Scavenging.—This is stated to be carried out satisfactorily throughout the District. The Medical Officer of Health remarks:—"The question of building a refuse destructor at a central site for this (Whit-church) and Llandaff Parish is one that will have to be considered at no distant date by your Council, as a tipping ground is always very difficult to acquire."

Trade Nuisances.—The knacker's yard at Caerau is frequently visited and no nuisance complained of, nor has any nuisance from smoke been observed at Melingriffith Tinplate Works since structural alterations were carried out last year.

Dairies, Cowsheds, and Milkshops.—222 are registered, and their condition shows considerable improvement. The bye-laws as to ventilation of cowsheds are strictly enforced.

Slaughter Houses.—These are 17 in number, all licensed ones. Two of the older ones have been closed in No. 1 District. These have to comply with the bye-laws.

Factories and Workshops.—These were frequently visited and inspected, and the nuisances discovered were abated.

IMPROVEMENTS.

Extensions of water mains and repairs.

Storage tank for Little Mill cottages.

REQUIREMENTS.

Not stated.

LLANTRISANT AND LLANTWIT FARDRE.

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

Area in acres, 18,232.

	1891.	1901.	1908.
Population	8,509.	11,846	12,097 (estimated).
Birth-rate, 39.0.	Death-rate, 13.9.	Zymotic death-rate, 2.56.	Infant mortality-rate, 84.
	Phthisis death-rate, 1.23.	Respiratory diseases death-rate, 1.98.	

INFECTIOUS DISEASES.

187 cases were notified as compared with 74 in 1907. These included *Diphtheria* and *Membranous Croup* (16 cases, 2 deaths) ; *Erysipelas* (6 cases) ; *Scarlet Fever* (157 cases) ; *Enteric Fever* (6 cases, 1 death) ; and *Puerperal Fever* (2 cases).

12 deaths occurred from *Measles*, 2 from *Whooping Cough*, and 2 from *Diarrhæa*.

GENERAL CONDITIONS.

Water Supply.—The supply was fairly good throughout the District. In some few places still the water is obtained from wells, usually surface ones, which are always open to contamination. Owing to the water being soft and from a peaty watershed, it is plumbo-solvent ; to guard against this, however, the service-pipes are of tin-lined iron. No case of "lead-poisoning" has been known in the District through drinking water.

Houses Unfit for Human Habitation.—Many houses are unfit through lack of proper lighting and air space ; dampness, want of adequate drainage, and general dilapidation.

Slaughter Houses.—These are said to be, generally speaking, unfit for the purpose, and the provision of a public abattoir is strongly recommended.

Lodging Houses.—There are none registered within the District, although several "miserable" cottages are said to be "let in lodgings," and these are absolutely unfit for the purpose.

Overcrowding prevails in many localities.

Schools Closed.—Pontyclun and Tonyrefail owing to *Measles*, and Gilfach Goch owing to *Scarlatina*.

Disposal of Refuse.—A daily collection of house refuse takes place, which is in turn deposited on tips, generally far away from dwellings.

Isolation Hospital.—19 cases were treated as compared with 29 during 1907. 12 of these cases were *Diphtheria* and 7 of *Enteric Fever*.

IMPROVEMENTS.

Extensions of sewers at Mill and High Streets and Pretoria and Llantrisant Roads, Tonyrefail, and at Penrhiwfer and Pontyclun.

Extension of sewer outfalls at Llantrisant Common.

Sewerage of Blue Street, Llantrisant, and Tonteg sewerage (in hand).

Extension of water mains, pumps, and high level service tank at Tonyrefail, and extension of water mains to Llantwit Main, Gelliseren Road, and Glamnychudd Road Divisions.

REQUIREMENTS.

Not specified.

NEATH.

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

Area in acres, 33,507.

	1891.	1901.	1908.
Population	23,953 ..	27,343 ..	28,021 (estimated).
Birth-rate 44·8.	Death-rate, 19·3.	Zymotic death-rate, 1·35.	Infant mortality-rate, 128.
	Phthisis death-rate, 1·10.	Respiratory diseases death-rate, 2·78.	

INFECTIOUS DISEASES.

276 cases were notified as compared with 124 during 1907. These included *Diphtheria* and *Membranous Croup* (32 cases, 6 deaths); *Erysipelas* (15 cases); *Scarlet Fever* (166 cases); *Enteric Fever* (62 cases, 3 deaths); and *Puerperal Fever* (2 cases, 2 deaths).

12 deaths occurred from *Measles*, 15 from *Whooping Cough*, and 16 from *Enteritis*.

Diphtheria.—8 of the cases were notified in February from the Dulais Valley, they were of a mild type, and the children were found playing about the day after the receipt of the notification. A case which occurred at Baglan Lower was associated with a foul-smelling cesspool.

Enteric Fever.—A serious outbreak occurred at Onllwyn in September, 22 cases being notified simultaneously. On investigation the people were found to be drinking water from an old level (not their proper supply) which, upon analysis, was proved to be absolutely impure and unfit for use.

Owing to an epidemic of *Scarlet Fever* and *Influenza* at Tonna, the Schools were closed for a period, as were also those at Onllwyn on account of an epidemic of *Scarlet Fever*.

GENERAL CONDITIONS.

Water Supply.—Crynant has now been provided with an ample supply of water of excellent quality from the Gelly-benuchel springs. The yield of the springs during the dry season of last year was over 50,000 gallons per day. A storage tank of 30,000 gallons capacity has been erected close to the springs, from which the supply mains have been laid as far as Gotre Rhos, and 19 pillar-taps have been erected in convenient positions for the inhabitants.

The Parish Council have now decided to provide a temporary water supply for Glyn Neath. It is intended to lay a part of the future 6-inch distribution mains intended to be laid in distributing the supply from the Ystradfellte scheme from a point near Yniscymmer along the road as far as Maeshir, and also a 3-inch branch pipe from the junction of the road to Pont-Neath-Vaughan along the main road to Pontwalby Bridge in order to afford a pillar tap supply on the route. A great deal of work has been done in the extension of water mains and services in the high level district of Cwmavon.

Dairies, Cowsheds, and Milkshops.—There are 159 of these premises in the District. These were regularly visited and particular attention was paid to cleanliness and ventilation. Two cowsheds were condemned, one at Cilfrew and the other at Highland Farm, Neath Abbey.

Factories and Workshops.—These were regularly visited and inspected. Separate closet accommodation was provided for each sex.

IMPROVEMENTS.

Seven Sisters sewerage and sewage disposal works (in course of construction).

Onllwyn sewerage—237 feet of 6-inch sewers, with manholes and flushing chamber.

Melincrythan sewerage—71 feet of 6-inch sewers with manholes.

Skewen sewerage—110 feet of 9-inch sewers at Talbot Street and 66 feet of 6-inch sewers, with manholes, main road.

Extensions of water mains at Skewen, Onllwyn, and storage tank provided at Tonna.

Plans, sections and estimates ready for Resolven sewerage scheme.

Plans and estimates prepared for a public slaughter house.

Glyn Neath sewerage scheme. Plans are being prepared.

Penyard District of Skewen. Plans, sections, and estimates being prepared.

REQUIREMENTS.

A scheme of sewerage and sewage disposal works for Resolven.

A scheme of sewerage and sewage disposal works for Seven Sisters, Cwmavon, Glyn Neath, and Cadoxton.

Improved water supply for the District (in hand).

PENYBONT.

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

Area in acres, 41,134.

		1891.	1901.	1908.
Population	.. ..	13,194	.. 14,581	.. 16,502 (estimated).
Birth-rate, 35.08.	Death-rate, 17.21.	Zymotic death-rate, 1.57.		Infant mortality-rate, 110.
	Phthisis death-rate, 0.80.	Respiratory diseases death-rate, 2.96.		

INFECTIOUS DISEASES.

92 cases were notified as compared with 90 during 1907. These included *Diphtheria* and *Membranous Croup* (19 cases, 5 deaths); *Scarlet Fever* (28 cases, 1 death); *Enteric Fever* (19 cases, 2 deaths); *Puerperal Fever* (1 case, 1 death); and *Erysipelas* (25 cases, 1 death).

Eight deaths occurred from *Measles*, 4 from *Whooping Cough*, 7 from *Enteritis*, and 8 from *Diarrhœa*.

Diphtheria.—5 deaths occurred as against 1 in 1907. Most of the cases were associated with School life. The number of cases under 5 years were 8, between the ages of 5 and 15, 11 (58 per cent.), and of the other cases they were almost all, without exception, infected by the children who came home ill from School.

Scarlet Fever.—1 death was registered, as compared with none in 1907. The case-fatality was 3.51 per cent., and was 2.13 above the average annual fatality in the last 10 years.

Enteric Fever.—2 deaths occurred, being the same number as in 1907. The 19 cases which occurred were widely separated both in time and place, and not connected with any further outbreak. The local sanitary conditions were inspected in all cases, and any defects found reported.

Tuberculosis.—This disease is not notifiable in this District. The Medical Officer of Health recommends that the notification of Phthisis should be substituted for that of Erysipelas; also that rooms should be disinfected after the removal or death of persons suffering from this disease, if the Sanitary Inspector be informed of the case.

GENERAL CONDITIONS.

Water Supply.—A joint water scheme has been prepared for Pencoed and Coychurch Higher. The present position of the Pencoed scheme is that the Local Government Board have advised:—

- (a) That an expert Engineer should be consulted.
- (b) That the Council should use cast iron pipes instead of steel tubes, as proposed.
- (c) That terms should be made with the Cowbridge Rural District Council, because it is suggested, as possible that some of the springs which supply Llanharan might be intercepted.

The Penybont District Council have, up to the present, agreed with the first suggestion, but not with the others.

The Contracts have been given and the works are to be commenced at once for the water scheme to supply Pontrhydydyff, Llangynwyd, and Troedrhiwgarth, at a cost of £2,700. The water supplies are deficient at Pencoed and St. Brides Major.

Sewerage and Drainage.—Plans and estimates are under consideration for sewerage Cefn Cribbwr, Kenfig Hill, and Pyle; estimated cost, £13,500.

The contract for the Cwmfelin sewerage scheme has been placed, and the work will be in hand soon.

A sewerage scheme adapted for the following villages is urgently needed, viz., Coity, Coychurch, Pencoed and Penrsk, Southerndown, St. Brides Major, and Wick.

In other villages no system of drainage has been provided.

The reconstruction of defective privies would tend greatly to promote the health of the District.

The overflow from stables, pigstyes, and manure heaps continues to drain into the main roads. This still may be seen at Broughton, Wick, Coity, Coychurch, South Cornelly, Kenfig Hill, Corntown, Pencoed, Southerndown, and St. Brides Major.

Slaughter Houses.—The two slaughter houses at Kenfig Hill and three at Aberkenfig are said to be more satisfactory. The erection of an abattoir is said to be a prime necessity for Aberkenfig and neighbourhood. Legal proceedings were taken for slaughtering on unlicensed premises at Aberkenfig, and a penalty was imposed.

House Accommodation.—146 houses have been erected and occupied during the year; 93 are in course of erection; 14 were rebuilt. Seven houses were closed as unfit for occupation, and 11 are vacant.

Scavenging.—The scavenging arrangements at Aberkenfig have been improved; the streets are scavenged three days a week by contract. Some of the villages have dust-bins supplied, which are emptied by contract, or by a neighbouring farmer. Many of these dust-bins have been removed as causing a nuisance.

House-to-house scavenging has been adopted in parts of the parish of St. Brides Minor.

Bye-laws and Regulations.—Certain Bye-Laws (not enumerated) have been adopted and approved by the Local Government Board, so they can be enforced. These, however, are again under consideration and have been in some respects altered.

Regulations under the Dairies, Cowsheds, and Milkshops Order, 1885, have been adopted and enforced since April, 1907.

Factories and Workshops.—These have been inspected and the conditions found fairly satisfactory.

School Closure.—No Schools were closed on account of epidemic disease during the year, but the Schools are disinfected where infectious disease occurs during the absence of the children.

A special report has been presented *re* the Maesteg Urban District Council's sewerage outfall works at Cwmfelin.

IMPROVEMENTS.

Sewerage of Cefn Cribbwr, Kenfig Hill, Pyle (plans prepared).

Water scheme for Pontrhydydyff, Llangynwyd, and Troedyrhiwgarth (contract let).

Wells repaired at St. Brides Major and Wick and one cleaned at Coity.

Pump fixed on well at St. Brides Major.

REQUIREMENTS.

The appointment of a qualified Inspector of Meat and Other Foods.

The sewerage of Pencoed, Coychurch, Southerndown, Coity, St. Brides Major, Wick, and Tythegstone.

The reconstruction of all ill-constructed closets.

The closure or repair of dilapidated dwellings.

Improved water supply for Pencoed and St. Brides Major.

A public slaughter house at Aberkenfig.

THE COUNTY ASYLUM.

The County Asylum is situated in the Penybont District, and below are given the statistics having reference to it.

Area in acres, 284.5.

Density of population, 7.0.

Angelton, 82, Density 11.47.

Parc Gwyllt, 202.5, Density, 5.31.

				1891.		1901.		1908.
Population	..	..	..	1,137	..	1,983	..	1,993.

Birth-rate, 4.01; Zymotic death-rate, 1.50; Enteritis, 2.01; Influenza, 8.0; Phthisis, 16.06; other Tubercular Diseases, 2.01; Cancer, 2.01; Bronchitis, 1.50; Pneumonia, 5.0; other Respiratory Diseases, 0.50; Heart Disease, 82.53; Kidney Diseases, 9.02; Diseases of Blood Vessels, 5.52; Nervous, 30.61; Senile Decay, 11.54; Digestive Diseases, 1.50; and total deaths from all causes, 105.37.

PONTARDAWE.

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

Area in acres, 35,708.

	1891.	1901.	1908.
Population	17,375	20,931	26,131 (estimated).
Birth-rate, 36.6.	Death-rate, 15.5.	Zymotic death-rate, 1.3.	Infant mortality-rate, 141.
	Phthisis death-rate, 1.26.	Respiratory Diseases death-rate, 2.21.	

INFECTIOUS DISEASES.

61 cases were notified as compared with 84 during 1907. These included *Diphtheria* and *Membranous Croup* (21 cases, 3 deaths); *Erysipelas* (12 cases); *Scarlet Fever* (18 cases); *Enteric Fever* (4 cases); *Continued Fever* (2 cases); *Puerperal Fever* (3 cases, 3 deaths); and *Malignant Pustule* (3 cases, 1 death).

Four deaths occurred from *Measles*, 1 from *Whooping Cough*, and 26 from *Diarrhæa*.

Infantile Mortality.—The highest rate was in the Caegurwen locality, especially during the first and last quarters, and where Convulsions figured prominently as a cause of death. Reference is made to the fact that the Glamorgan County Council has appointed four School Nurses, part of whose duties will be to give lectures on the rearing of infants to the older girls in the Elementary Schools.

Enteric Fever.—4 cases were notified, 3 being removed to the Isolation Hospital. A case appeared at Ystalyfera in a house where a patient had suffered from the disease in 1907, and from which the serious epidemic of the year originated. As the water supply was free from suspicion, and the surroundings had been improved since the previous year, the Medical Officer of Health attributes this case to infection from the 1907 patient, who must have acted as "carrier."

Measles.—A severe outbreak took place in the beginning of the year at Clydach, and 4 deaths were registered. All the Schools at Clydach were closed owing to the outbreak.

Malignant Pustule.—3 cases were notified and 1 death occurred. During February Anthrax appeared in a herd of cattle at Ynysmudw and killed 11, and three men who had been handling the carcasses developed Malignant Pustule.

Epidemic Diarrhæa.—During the latter half of the year this disease was very prevalent, and is still prevalent in the Ystalyfera locality. The nature of the disease is explained at length and the contributory influences are fully discussed.

GENERAL CONDITIONS.

House Accommodation.—The following buildings were newly erected—44 at Pontardawe, 39 at Clydach, 32 at Ystalyfera, and 118 at Caegurwen. Four houses were closed as unfit for human habitation.

No action was taken during the year under Part I. of the Housing of the Working Classes Act. The Local Government Board has sanctioned the application of the Council for the adoption of the main sections of the Public Health Acts Amendment Act, 1907.

Water Supply.—This is stated to be both abundant and good, derived mainly from springs in the coal measures, and is supplemented by the Cray water from a mountain gathering ground.

Dairies, Cowsheds, and Milkshops.—There are 60 cowkeepers and purveyors of milk, to which 130 inspections were made. Notices were served where required and these were complied with.

The Medical Officer of Health is of the opinion that there is but little Tuberculosis among cattle in the District.

Slaughter Houses.—There are 34 on the register, many of which are unsuitable and are but seldom used. Periodical inspections were carried out, and some 18 nuisances were discovered and abated.

Schools.—The Clydach Schools were closed owing to Measles, and Garnswllt Schools were closed owing to Influenza.

Common Lodging Houses.—There is only one on the register, to which some 60 visits of inspection were paid. Plans have been submitted to the Council for the conversion of the disused Wern Schools, Ystalyfera, into a common lodging house.

Sewerage.—Pontardawe is the only part of the District that has a complete system of sewerage and sewage disposal works. The effluent from the sewage disposal works is very satisfactory. In the other Districts the pail system is in vogue, a weekly removal taking place.

Factories and Workshops.—There are 98 on the register, to which 140 visits of inspection were made, and all were found satisfactory.

Midwives.—The Medical Officer of Health draws attention to the scarcity of midwives in the District, which he believes will be accentuated in the near future. The nearest examining centre is Bristol, a knowledge of English being essential. The Medical Officer of Health remarks:—"Were there examining centres established in Wales and the option given to be examined orally and in Welsh, I am confident that in a short time there would be a plethora of candidates. I have yet to learn that the Welsh language has not the capabilities for training a woman to become a skilful midwife."

IMPROVEMENTS.

Water mains to Godre'rgraig, Heol-las, Ynysmudw, Neuadd Road, Gwauncaegurwen, Waunleyshon, Abernant, Cwmgorse, Railway Terrace, Alltwen, etc., etc.

Sewers at Gwauncaegurwen, Ystalyfera (Clare Street and Caersalem Lane).

One three-stall urinal at Pantteg, Ystalyfera.

One hand-pump to spring collected into covered tank at Craigcefnparc.

Street lamps at Glanrhyd Road, etc.

REQUIREMENTS.

Sewerage at Ystalyfera and Brynamman Road, Brynamman, and neighbourhood.

Improvement and widening of main road through Ystalyfera.

SWANSEA (Llandilo-Talybont Division).

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

Area in acres, 21,313.

	1891.	1901.	1908.
Population	17,643 ..	19,782 ..	24,580 (estimated).

Birth-rate, 32.2. Death-rate, 14.8. Zymotic death-rate, 0.81. Infant mortality-rate, 127.
 Phthisis death-rate, 1.13. Respiratory diseases death-rate, 2.60.

INFECTIOUS DISEASES.

137 cases were notified as compared with 203 in 1907. These included *Diphtheria* and *Membranous Croup* (59 cases, 6 deaths) ; *Erysipelas* (9 cases) ; *Scarlet Fever* (44 cases) ; *Enteric Fever* (22 cases, 1 death) ; and *Puerperal Fever* (3 cases).

Diphtheria.—59 cases were notified, viz., 6 in Llandilo-Talybont, 3 in Penderry, 6 in Swansea Higher, 19 in Loughor, and 25 in Gowerton ; of these, 6 proved fatal. 9 of the patients were removed to Hospital. The Gowerton cases were associated with insanitary conditions, and the spread of the disease was largely due to imperfect isolation.

One case in Swansea Higher occurred on a dairy farm. The patient was removed to Hospital and precautions were taken to protect the milk from contamination. No disease was found in the cows or any domestic animals, and no case of *Diphtheria* occurred amongst those who got their milk supply from this dairy.

Enteric Fever.—22 cases were notified, 1 of which proved fatal. 8 cases were removed to Hospital, 1 from a gipsy's tent. Most of the patients resided in houses whose sanitary surroundings were bad, owing to the want of drainage, etc.

Erysipelas.—9 cases were notified, but no deaths occurred.

Scarlet Fever.—44 cases occurred, and in addition to that number, 3 cases sent to Hospital as *Diphtheria* were found on admission to be suffering from *Scarlet Fever* as well. The cases of *Scarlet Fever* were distributed over the whole Division, but no deaths were recorded from this disease. Two cases of *Scarlet Fever* were removed to Hospital, one of them from a shop.

Whooping Cough.—An epidemic of this disease occurred simultaneously with that of *Measles*, and the School closure which had been adopted owing to *Measles* proved helpful in checking the spread of *Whooping Cough*. 1 death from *Whooping Cough* was recorded.

Measles.—During the first quarter of the year outbreaks of this disease occurred all over the District, necessitating School closure. 12 deaths were registered from this cause.

Tuberculosis.—Compulsory notification of all cases of Tuberculosis associated with discharges is recommended. Application was made by the Council some years ago to the Local Government Board for power to make notification compulsory in the District, though the Board stated that they were willing to sanction the payment of fees for voluntary notification.

Kingsbridge Small Pox Hospital.—This Hospital is still available but unused, as it is nearly seven years since a case of Small Pox has occurred in the District.

Garngoch Fever Hospital.—Only 20 cases were treated at this Hospital as compared with 123 in 1907. These comprised 9 cases of Diphtheria, 9 of Enteric Fever, and 2 of Scarlet Fever. No deaths occurred in Hospital during the year.

GENERAL CONDITIONS.

Water Supply.—The works for the supply of water to Gorseinon and Pontardulais from the Swansea Corporation's reservoirs were completed during the year, and most of the houses in these places have now had water laid on. As the water mains now pass through each of the five parishes of the Division, it will not be long ere the whole system is completed.

Sewerage and Drainage.—Gowerton is the only village which has a system of sewerage, but this system is stated to be a most incomplete one requiring very great extension. The Pontardulais sewer was begun during the year and will soon be completed. Considerable extensions of this will, however, be required as soon as the present scheme is completed. The drainage of Sketty, Treboeth, Caersalem, Tirdeunaw, Gorseinon, Fforestfach, and Loughor is urgently needed.

Scavenging and Disposal of Refuse.—The contents of pails and privies is removed once a week, and although this was, generally speaking, fairly well done, grave irregularities were said to frequently occur. The Medical Officer of Health recommends that the Council should keep a staff of scavengers and organise a proper cleansing department. A daily removal of house refuse by contractors is carried out in Gorseinon and Gowerton, and weekly in other villages.

Street cleansing is stated to be almost unknown in this Division, although it ought to be properly attended to in populous villages.

Housing of the Working Classes.—The erection of new houses goes on at a rapid rate, yet the supply is quite inadequate to the demand owing to the steady development of industries. 5 cases of overcrowding were abated. 31 houses were reported as unfit; of these, 3 were demolished, 12 rendered fit, whilst 9 are being repaired, and 7 have not yet been attended to. No legal proceedings were taken during the year.

Common Lodging Houses.—To meet the demands of the navvies engaged on the new G.W.R. extension, five common lodging houses have been provided. These are regularly inspected, and two of them are said to be models of cleanliness.

Slaughter Houses.—These are said to be kept satisfactorily with the exception of one or two.

Meat Inspection.—One diseased carcase and diseased portions of four others were destroyed during the year at the owners' request.

Dairies, Cowsheds, and Milkshops.—There are 132 dairies, 139 cowsheds, and 6 milkshops in this Division, and the very thorough supervision to which these are subjected has resulted in very considerable improvement in their condition.

Mr. Gladstone Davies, Veterinary Surgeon for Swansea Town, has been appointed as Veterinary Surgeon for the District, with regard to the regulation of milk and meat supplies.

IMPROVEMENTS.

Private street works in various parts of the District.

The appointment of a Veterinary Inspector.

Water supplies to various parts of the District.

Construction of the Pontardulais sewer (commenced).

REQUIREMENTS.

Sewerage works for various localities.

Improvement in the back lanes.

SWANSEA (Llangyfelach Division).

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

Area in acres, 9,803.

	1891.	1901.	1908.
Population	10,528	10,208	11,748 (estimated).
Birth-rate, 28.6.	Death-rate, 13.5.	Zymotic death-rate, 1.51.	Infant mortality-rate, 135.
	Phthisis death-rate, 0.91.	Respiratory Diseases death-rate, 2.29.	

INFECTIOUS DISEASES.

32 cases were notified as compared with 33 in 1907. These included *Diphtheria* and *Membranous Croup* (8 cases, 1 death); *Erysipelas* (10 cases, 1 death); *Scarlet Fever* (12 cases); and *Enteric Fever* (2 cases, 1 death).

Seven deaths occurred from *Measles*, 5 from *Whooping Cough*, 3 from *Diarrhæa*, and 3 from *Enteritis*.

Zymotic Diseases.—17 deaths were registered from these diseases as compared with 5 during the previous year.

Phthisis or Consumption.—10 deaths were registered from this cause, giving a death-rate of 0·91 per 1,000. The average for the past ten years was 1·26 per 1,000.

Cancer.—The death-rate in the Clase Parish is 0·06, whilst that of Llansamlet is 0·03 per 1,000.

GENERAL CONDITIONS.

Water Supply.—Cefn and Bonymaen, parts of the Llansamlet District, have been supplied with water. There now remain but two places without a proper water supply, viz., Pantlasse and that portion of the road leading from Llangyfelach to Morryston where recently several new houses have been built and where there are likely to be more built.

Factories and Workshops.—These have been frequently inspected. There are no underground bakehouses, nor outworkers in the District.

IMPROVEMENTS.

Extensions of mains to Cefn and Bonymaen in the Llansamlet District.

REQUIREMENTS.

A better water supply for Pantlasse, etc.

PORT SANITARY DISTRICTS.

CARDIFF.

Medical Officer of Health—E. WALFORD, M.D., D.P.H.

The Port Sanitary Authority of Cardiff was constituted in the year 1882, and the only portion of the Administrative County of Glamorgan under the jurisdiction of this Authority is Penarth Dock.

PENARTH DOCK.

All vessels are boarded on arrival, whether from foreign or coastwise, and enquiries made as to the health of the crew, and if there is or has been any sickness on the voyage, a copy of the Regulations as to Infectious Diseases is handed to every Master. In addition to tide work, the Inspector on day duty also visits and examines the ships in docks.

HOSPITAL ACCOMMODATION.

The Cardiff Port Sanitary Authority possess well-equipped Hospitals:—

- I. For *Small Pox* (within the Borough).
- II. The Flat Holm Island for *Cholera*, *Yellow Fever*, and *Plague*.

BARRY.

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

The Barry Port Sanitary Authority was constituted in 1893. The floating population is roughly estimated at 1,212 persons.

3,178 vessels were inspected ; 2,704 were found in a fair condition ; and 474 in a more or less defective or insanitary state. The systematic inspection of shipping was efficiently performed by the Chief Inspector and his three Assistants, and as a rule very little difficulty was experienced in obtaining compliance with the necessary requirements.

INFECTIOUS DISEASES.

On 23rd January, the Master of the s.s. "Hercules" reported that L. G., aged 50 years, was ill on board. Upon examination, he was found to be suffering from Erysipelas. He was isolated in a room from the crew, and was medically attended on board. The vessel sailed on the 26th inst. for Cardiff, and the Authorities of that Port were notified of the disease.

On 14th October, the Master of the s.s. "Ameland" reported that T. P., aged 25 years, was ill on board. Upon examination he was found to be suffering from Enteric Fever. He was removed to the Sanatorium. The forecastles and his effects were disinfected, and the fresh water tanks emptied and cleansed.

During the year one patient was admitted from the Port into the Hospital for Infectious Diseases belonging to the Barry Urban Sanitary Authority.

SWANSEA.

Medical Officer of Health—ALFRED HANSON, M.R.C.S.

Assistant Medical Officers of Health—

{	Dr. J. ARNALLT JONES, Aberavon.
	Dr. E. VERNON PEGGE, Briton Ferry.
	Dr. J. G. ALEXANDER, Porthcawl.

The Swansea Port Sanitary Authority has jurisdiction over the Ports of Neath, Port Talbot, and Porthcawl.

The following Table shows the number of vessels inspected and the number of nuisances and defects dealt with.

Districts.	Number of Vessels.			Number of Crew.	Nuisances Abated.
	Foreign.	Coastwise.	Total.		
Swansea	1,894	4,110	6,004*	74,130	1,803
Neath	251	667	918	9,394	73
Port Talbot	386	902	1,288	19,036	232
Porthcawl	—	3	3	14	—
	2,531	5,682	8,213	102,574	2,108

*Including steam trawlers inspected.

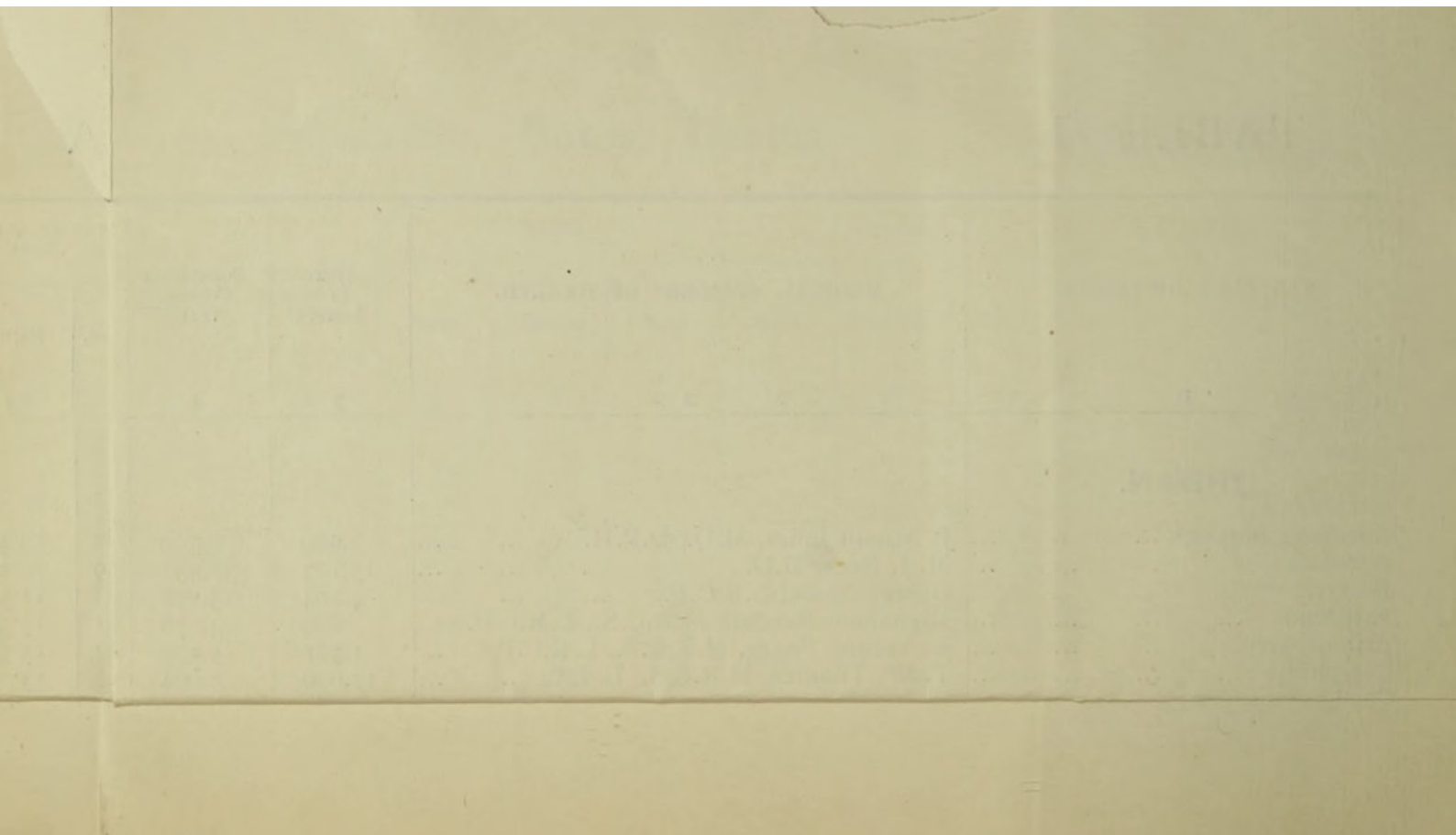
The number of cases of sickness or injury coming to the knowledge of the Officers was 179, and included Enteric Fever, 7; and Erysipelas, 1. All the other cases were non-notifiable.

TABLE I.

Area, Population, Births, Deaths.

SANITARY DISTRICTS.		MEDICAL OFFICERS OF HEALTH.				Area in Acres.	Population Census, 1901.	Population Census, 1901.	Estimated Population, 1908.	BIRTHS.		DEATHS.		ANNUAL RATES PER 1,000 OF ESTIMATED POPULATION.					Infant Mortality (Deaths in Children under 1 year per 1,000 Births).	Deaths in Public Institu- tions.	Deaths of Non- Resi- dents regis- tered in District.	Deaths of Resi- dents regis- tered beyond District.	DEATHS AT ALL AGES.			
										Males.	Females.	Total.	Males.	Females.	Total.	Birth Rate.	Death Rate.	Zygotie Death Rate.					Pneumia Death Rate.	Respirary Rate.	Number.	Rate.
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	J. Arnall Jones, M.D., D.P.H.	2,060	6,300	7,553	8,500	154	179	333	...	...	165	39.1	19.4	5.5	0.70	1.32	162	...	...	...	162	19.4
Aberdare	M. J. Rees, M.D.	15,127	38,431	43,305	47,334	821	801	1,622	...	...	959	34.2	20.2	3.6	0.99	1.90	212	17	...	...	959	20.2
Barry	George Neale, L.R.C.P.	4,104	13,278	27,030	31,202	328	436	964	210	179	389	29.0	11.7	1.5	0.60	2.01	135	14	6	...	383	11.53				
Bridgend	Wyndham Randall, M.R.C.S., L.R.C.P.	629	4,676	8,052	7,470	98	116	214	...	...	124	28.65	16.60	1.20	1.07	2.54	102	39	23	6	101	13.52		
Briton Ferry	E. Vernon Pegge, M.R.C.S., L.R.C.P.	1,381	5,778	6,973	8,000	...	...	243	...	...	124	30.3	15.5	2.12	0.75	1.25	160	...	...	...	124	15.5
Caerphilly	T. W. Thomas, M.R.C.S., L.S.A.	17,000	8,064	15,835	27,000	555	483	1,038	182	169	351	42.1	13.0	2.3	0.51	1.66	138	...	...	17	368	13.6		
Cowbridge Borough	R. M. Moynan, M.D.	84	1,377	1,302	1,302	7	12	19	...	...	14	15.8	11.6	...	1.6	2.4	52	...	...	...	14	11.6
Glyncorwg	H. Davies, M.B., C.M.	10,220	3,683	6,452	9,000	...	...	365	...	...	150	40.5	16.6	1.55	0.66	3.77	147	...	...	...	150	16.6
Maesteg	W. Kirby, L.R.C.P., L.R.C.S., D.P.H.	6,709	9,417	15,012	25,141	399	424	823	177	190	367	32.33	14.59	1.59	0.99	3.06	179	2	...	17	350	13.92				
Margam	J. H. Davies, M.D.	18,347	6,274	9,014	12,315	207	173	380	...	...	144	30.3	11.6	1.62	0.56	3.24	279	2	...	...	144	11.6
Mountain Ash	E. P. Evans, M.R.C.S., L.R.C.P.	10,554	17,826	31,093	42,000	825	847	1,672	...	...	661	39.8	15.7	2.4	0.61	2.90	147	...	...	15	661	15.7
Neath Borough	J. M. Morris, M.A., M.B., C.M., D.P.H.	1,439	11,113	13,720	15,800	...	...	356	...	...	388	33.9	14.7	2.26	1.25	3.15	131	29	17	...	271	16.1
Ogmore and Garw	D. J. Thomas, M.R.C.S., L.R.C.P.	17,996	13,800	19,907	24,000	...	...	953	...	...	333	39.7	13.8	1.12	0.75	1.66	120	...	...	...	333	13.8
Oystermouth	A. L. Jones, M.R.C.S., L.S.A., D.P.H.	2,615	3,675	4,461	5,074	...	...	141	...	...	79	27.79	13.59	0.59	0.98	0.98	85	...	...	...	79	13.59
Penarth	C. D. Musgrove, M.D.	2,507	12,424	14,228	16,000	...	...	351	...	...	165	21.9	10.3	0.5	0.7	1.37	105	...	...	...	165	10.3
Pontypridd	Howard Davies, M.R.C.S., L.S.A.	8,000	24,763	32,116	38,674	718	668	1,386	...	...	666	35.8	17.2	2.9	1.03	2.4	181	107	75	22	613	15.8		
Pontbawl	J. D. Alexander, L.R.C.P.E., L.F.P.S.	3,365	1,758	1,892	3,425	21	25	46	17	15	32	13.0	9.3	0.29	0.87	1.16	65	...	...	...	28	9.0	
Rhondda	J. D. Jenkins, M.D., D.P.H.	23,543	88,351	113,735	133,137	...	...	5,454	...	...	2,446	41.9	18.4	4.01	0.72	3.71	183	41	10	80	2,516	18.9
RURAL.																										
Cowbridge	C. Booth Mellor, M.R.C.S., L.R.C.P.	39,785	6,094	6,834	8,000	111	116	227	57	57	114	29.5	14.2	1.2	1.37	1.12	105	...	...	...	114	14.2	
Gelligaer and Rhigos	W. W. Jones, M.D., D.P.H.	23,985	13,718	18,181	29,774	617	565	1,202	285	216	498	40.3	16.7	1.7	0.70	3.08	138	...	...	3	501	16.8		
Gower	A. E. Mole, M.B., C.M.	50,275	7,432	7,266	7,266	...	...	208	...	...	104	28.6	14.3	0.82	1.37	1.51	100	7	...	...	104	14.3
Llanidfa and Dinas Powis	Richard Paschard, M.D., D.P.H.	64,469	18,539	21,047	27,032	...	...	766	...	...	320	28.33	11.83	1.73	0.85	1.51	99	...	...	...	320	11.83
Llantrisant and Llantwit Fardre	W. N. Davies, M.D.	18,232	9,370	11,845	15,097	...	...	472	...	...	174	39.0	14.3	2.56	1.23	1.98	84	...	...	...	169	13.9
Neath	T. P. Whittington, L.R.C.P., L.R.C.S.	52,844	21,931	27,343	28,021	676	583	1,259	261	282	543	44.8	19.3	1.55	1.10	2.78	128	...	...	...	543	19.3	
Penybont	Wyndham Randall, M.R.C.S., L.R.C.P.	40,023	14,331	16,564	16,502	...	...	571	...	...	284	34.6	17.21	1.57	0.80	2.96	110	210	206	6	284	13.56
Pontardawe	W. J. Lewis, L.R.C.P., L.R.C.S.	28,233	17,374	20,933	26,131	481	475	956	...	...	407	36.6	15.5	1.30	1.26	2.21	141	7	...	...	407	15.5
Swansea	E. Rice Morgan, M.R.C.S., L.S.A.	10,001	...	11,748	175	148	323	71	81	152	28.6	13.5	1.51	0.91	2.29	135	...	...	...	...	152	13.5
Llanidlo-tyllybont Division	Trafford Mitchell, M.D., D.P.H.	20,893	27,448	29,090	24,580	423	380	803	...	...	365	32.2	14.8	0.81	1.13	2.60	127	...	...	10	375	15.2

* The Parish of Gelligaer was created an Urban District on 1st October, 1908.



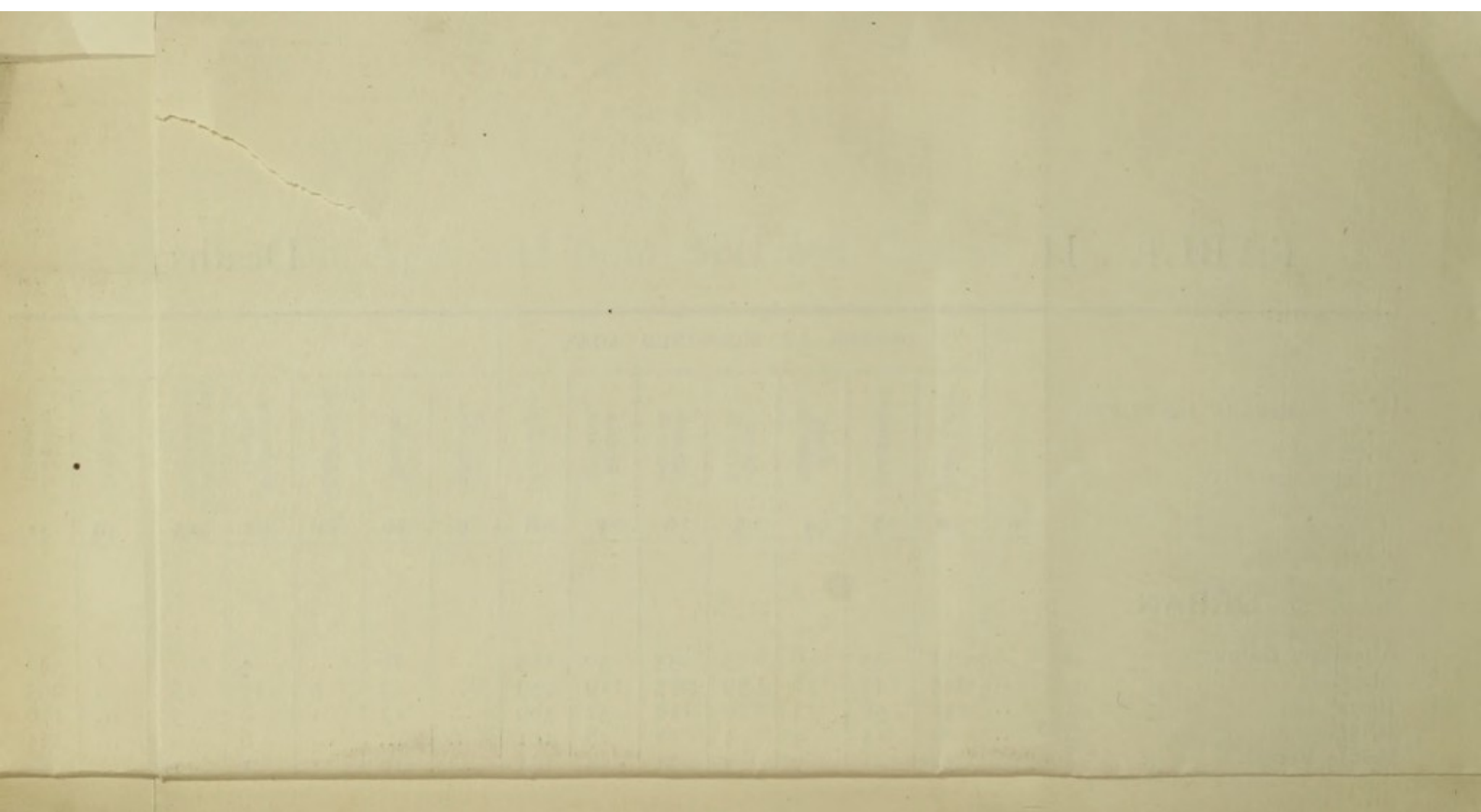


TABLE III.

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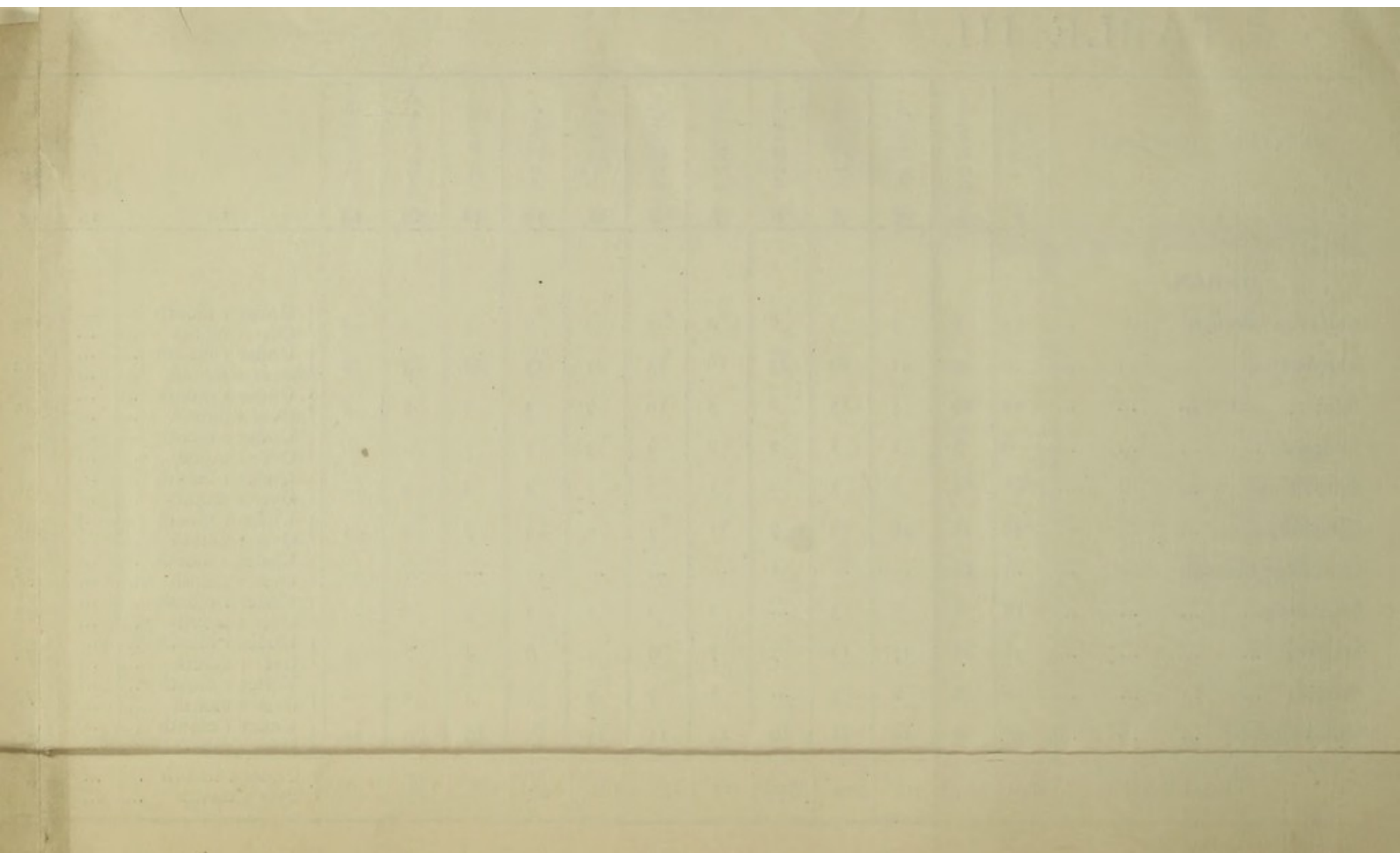


TABLE IV.

Notification and Isolation.

SANITARY DISTRICTS.	CASES NOTIFIED.											CASES REMOVED TO HOSPITAL.						
	Small Pox.	Scarlet Fever.	Diphtheria.	Membranous Croup.	FEVERS.				Erysipelas.	Measles.	Whooping Cough.	Small Pox.	Scarlet Fever.	Diphtheria.	Enteric Fever.	Erysipelas.	Malignant Pusule.	Cerebro-Spinal Fever.
					Typhus.	Enteric.	Continued.	Puerperal.										
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19
URBAN.																		
Aberavon Borough	1	...	...	8	...	...	5	...	...	...	...	...	...	...	...	...
Aberdare	...	191	115	...	...	25	...	10	64	...	...	...	...	...	...	...	...	...
Barry	...	45	50	...	...	10	1	...	39	...	...	...	...	1	2	...	...	...
Bridgend	...	1	4	5	...	3	...	...	3	...	...	1	...	...	1	...	...	...
Briton Ferry	84	16	...	2	...	2	4	...	...	...	...	...	...	...	...	...
Caerphilly	...	168	34	...	...	14	...	...	12	...	...	...	...	...	...	...	...	...
Cowbridge Borough
Glyncorwg	...	26	7	...	...	23	...	...	3	...	...	...	...	...	...	...	...	...
Maesteg	...	52	9	...	...	16	...	2	7	...	...	10	...	...	4	...	...	...
Margam	...	20	25	...	...	9	...	...	29	...	...	12	10	2	...	...	...	...
Mountain Ash	...	106	88	...	...	26	...	3	28	...	...	8	5	5	1	...	...	...
Neath Borough	...	25	14	...	...	11	...	...	12	...	...	1	...	1	...	...	...	...
Ogmore and Garw	...	44	59	...	...	13	...	6	10	...	...	...	...	...	...	...	...	...
Oystermouth	...	11	6	...	...	2	...	1	4	...	...	...	...	...	...	...	...	1
Penarth	...	42	39	...	...	1	...	...	10	...	...	33	33	1	...	...	...	...
Pontypridd	...	144	61	...	...	17	...	3	10	...	...	...	27	10	...	...	...	...
Porthcawl	...	22	1	...	...	...	...	...	1	...	...	11	...	...	...	...	...	...
Rhondda	...	507	185	...	...	93	3	23	54	...	...	...	...	50	70	...	...	...
RURAL.																		
Cowbridge	...	28	29	...	...	1	...	1	9	...	...	...	...	...	...	...	...	...
Gelligaer and Rhigos	...	382	24	...	...	14	...	4	10	...	...	...	4	1	7	...	...	...
Gower	...	1	5	...	...	3	...	...	2	...	...	...	...	...	...	...	...	...
Llandaff and Dinas Powis	...	90	85	...	...	6	...	3	10	...	432	...	55	59	3	1	...	...
Llantrisant and Llantwit Vardre	...	157	16	...	...	6	...	2	6	...	...	...	2	...	...	...	...	...
Neath	...	166	32	...	...	62	...	1	15	...	...	...	...	1	...	...	...	...
Penybont	...	28	19	...	...	19	...	1	25	...	...	...	...	...	...	...	...	...
Pontardawe	...	18	21	...	...	4	2	1	12	...	...	...	6	...	3	...	3	...
Swansea—
Llangyfelach Division	...	12	8	...	...	2	...	...	10	...	...	...	...	...	1	...	...	...
Llandilo-Talybont Division	...	44	59	...	...	22	...	3	9	...	...	...	2	9	8	...	...	...

