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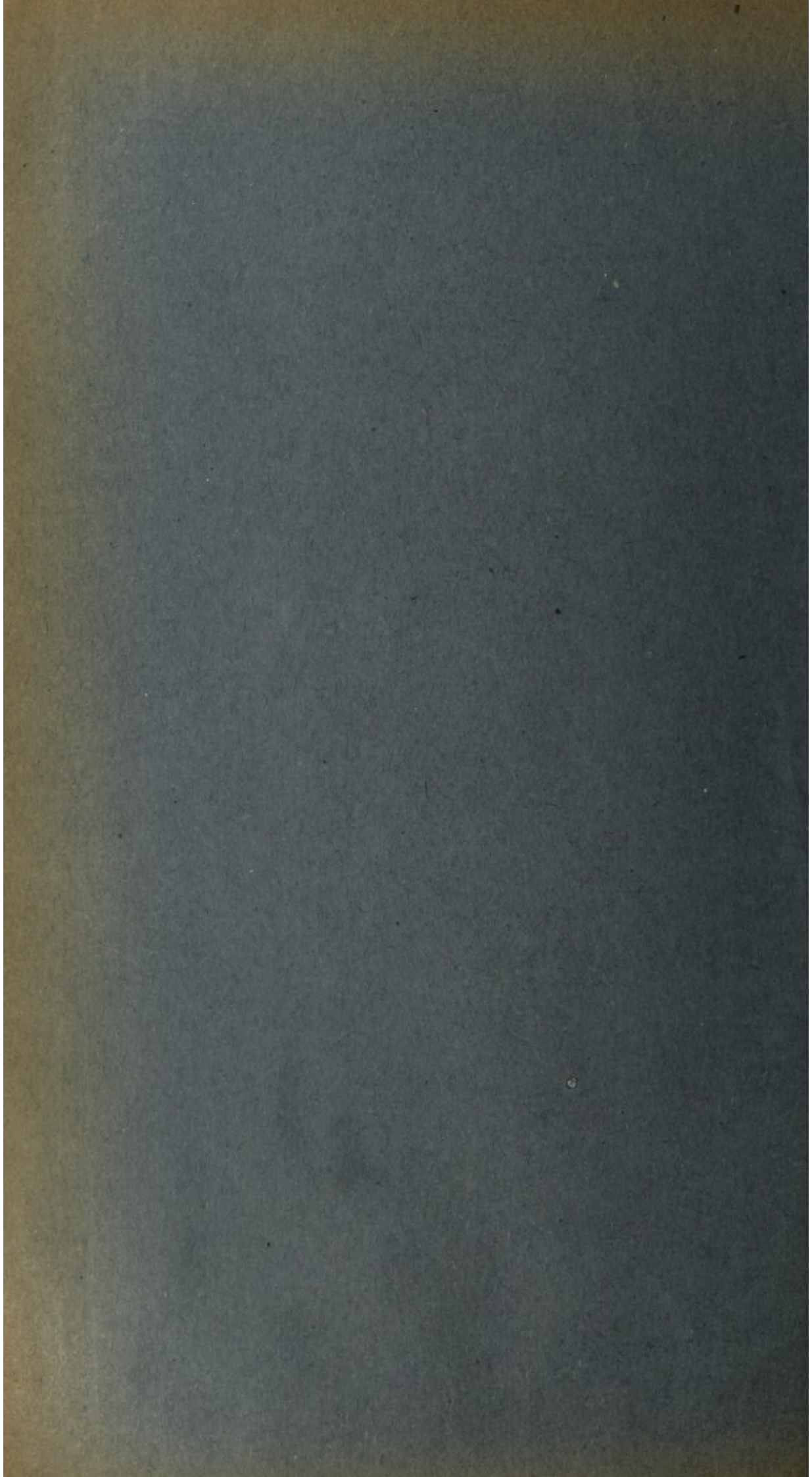


ANNUAL REPORT
OF THE
MEDICAL OFFICER OF HEALTH
FOR THE
CITY OF CARDIFF
FOR THE YEAR 1906.

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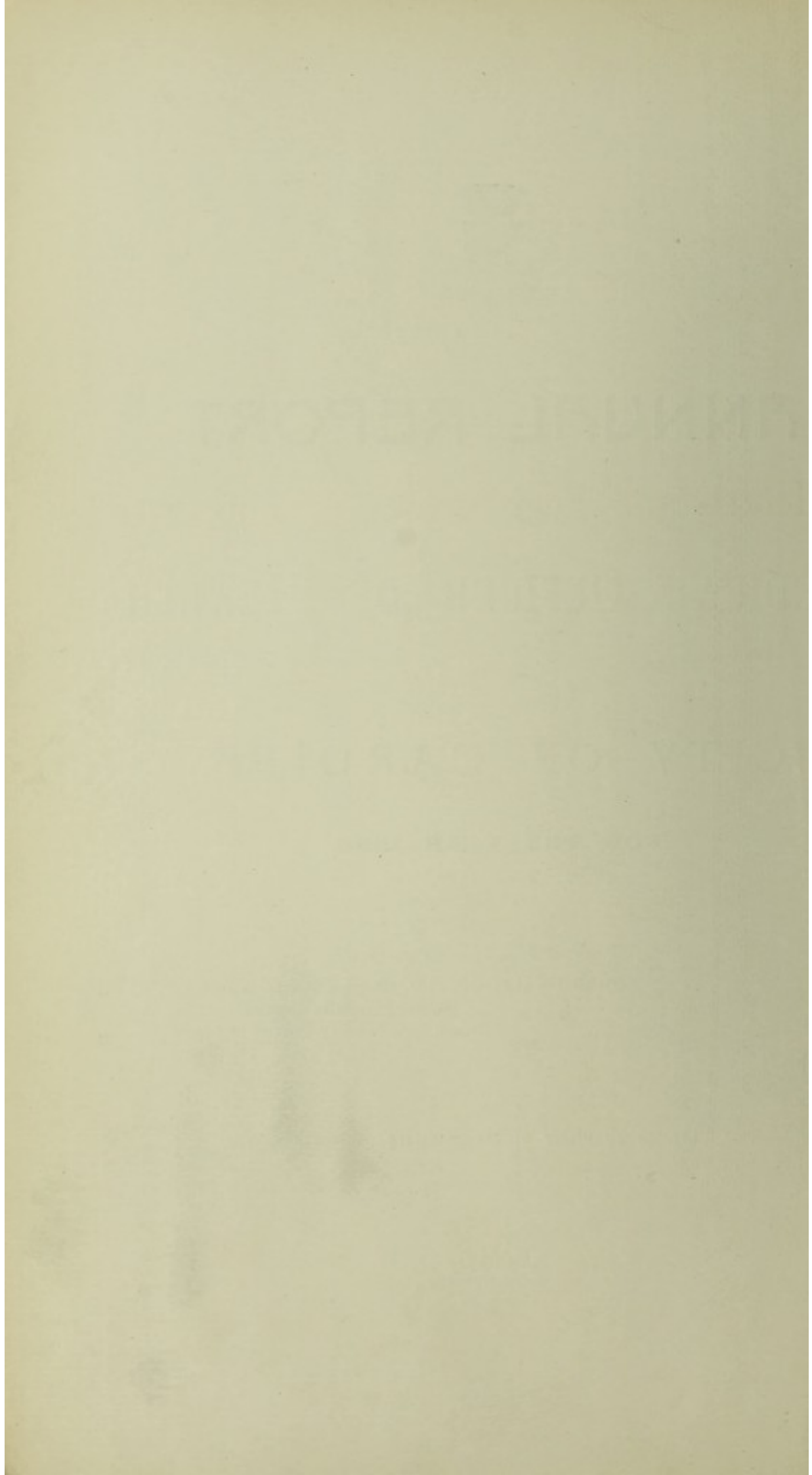


ANNUAL REPORT
OF THE
MEDICAL OFFICER OF HEALTH
FOR THE
CITY OF CARDIFF,
FOR THE YEAR 1906.

EDWARD WALFORD, M.D. (Durh.), D.P.H. (Camb.),
MEDICAL OFFICER OF HEALTH,
CITY AND PORT SANITARY DISTRICT OF CARDIFF.

Printed by Order of the Sanitary Authority.

CARDIFF:
WESTERN MAIL, LIMITED.
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1907.



CITY OF CARDIFF.

Health and Port Sanitary Committee.

Lord Mayor :

COUNCILLOR W. S. CROSSMAN, J.P.

Chairman :

ALDERMAN T. WINDSOR JACOBS, J.P.

ALDERMAN P. W. CAREY, J.P.

„ JOHN JENKINS, J.P., M.P.

ROBERT HUGHES, J.P.
(*Deputy Chairman*).

COUNCILLOR LEWIS MORGAN.

„ JOHN CHAPPELL, J.P.

„ JAS. ROBINSON.

COUNCILLOR F. G. L. DAVIS.

„ R. J. SMITH.

„ W. H. RENWICK, J.P.

„ JOSEPH STANFIELD.

„ JABEZ A. JONES.

„ W. JENKINS.

CITY OF CARDIFF.

Medical Officer of Health's Department.

Medical Officer of Health :

EDWARD WALFORD, M.D., D.P.H.

Chief Inspector of Nuisances :

D. VAUGHAN.

District Inspectors :

T. W. WARREN.*||

W. FISHER.*

S. EVANS.*

J. STRANGE.*

F. GLOVER.*

S. JEFFERY.*

Inspectors of Infectious Diseases :

GEO. THOMAS.*

A. F. MALE.*

T. CHANT.*

Inspector of Lodging Houses :

J. W. HOLDEN.*

Inspector under Shop Hours Acts, and Inspector of Workshops :

J. ASHMAN.*

Inspector of Cowsheds, and of Meat and other Foods :

G. M. MCGREGOR.*†

Woman Inspector :

Miss A. HOYLE.*‡

Disinfectors at Disinfecting Station :

W. THOMAS.

W. WEBSTER.

Disinfectors :

F. DAVEY.

Clerks :

W. H. ALDERMAN.

F. HOWELL.

* Cert. Roy. San. Inst. † Cert. Meat Insp.

‡ Cert. Central Midwives Board.

|| R. P. C.

INDEX.

	PAGE.
Health and Port Sanitary Committee.. .. .	3
Staff of Medical Officer of Health's Department	4
Local Government Board Order, March, 1891.. .. .	7
Physical Features of District	8
Parks and Open Spaces	9
House Accommodation	9
Census Table, Inhabited Houses, &c... .. .	10
Density of Population, 1897-1906	10
Houses and Shops, Plans passed since 1894	10
Proceedings under Housing of Working Classes Act	11
Water Supply	11
Bacteriological and Chemical Examination of Water	12
Meat Inspection	12-17
Sale of Food and Drugs Acts	18-22
Factories and Workshops	22-26
Shop Hours Acts	27
Midwives Act, 1902	28-29
Seamen's and Common Lodging Houses	29-30
Inspection of Schools	30-38
Cardiff and County Public Health Laboratory.. .. .	38
Mortuary	39
Vital Statistics, Population.. .. .	39-40
Summary of Vital Statistics, 1906	40
Marriages	41
Births	41-42
Birth-rates in Towns	43
Deaths	44
Death-rates in Towns	45
Analysis of Births and Deaths	46
Chart showing Deaths in 1906	Between 46 & 47
Infant Mortality	47
Mortality in Streets	48-57
Infectious Diseases	58
Death-rates from Zymotic Diseases, 1878-1906.. .. .	58
Notification of Infectious Diseases, 1890-1906	59
Disinfection	59
Measles	59
Scarlet Fever	59-60

INDEX—Continued.

PAGE,

Diphtheria and Membranous Croup..	..	..	..	..	..	..	..	60-61
Enteric Fever ..	..	..	..	..	..	..	..	62
Small-pox ..	..	..	..	..	..	..	..	63
Vaccination Return, 1906 ..	..	..	..	..	..	..	..	63
Diarrhœa ..	..	..	..	..	..	..	..	63-65
Tuberculosis ..	..	..	..	..	..	..	..	66-67
Chart showing Weekly Notifications of Infectious Diseases	..	..	..	..	..	..	Between 67 & 68	
Cardiff Sanatorium ..	..	..	..	..	..	..	..	68
Work performed by staff of Inspectors	..	..	..	..	..	..	..	69
House Inspection..	..	..	..	..	..	..	..	70-73
Report of Chief Inspector ..	..	..	..	..	..	..	..	74
Dairies, Cowsheds and Milkshops ..	..	..	..	..	..	..	..	74
Canal Boats ..	..	..	..	..	..	..	..	75
Magisterial Proceedings ..	..	..	..	..	..	..	..	75
Appendix :—								
Statistical Tables ..	..	..	..	..	..	..	..	76-80
Meteorological Tables ..	..	..	..	..	..	..	..	81-82
Rainfall, 1876-1906 ..	..	..	..	..	..	..	..	83-86
Table showing Deaths from Specified Causes.								
Chart showing Meteorological Observations.								
Report on Infant Mortality.								

CITY OF CARDIFF.

CITY HALL,
CARDIFF,
MAY, 1907.

TO THE CHAIRMAN AND MEMBERS OF
THE HEALTH AND PORT SANITARY COMMITTEE.

GENTLEMEN,

I have the honour of submitting to you my Report for the year 1906, made in accordance with Article 18 (Section 14) of the Local Government Board's Order of March, 1891, which specifies the information to be contained in the Annual Report of the Medical Officer of Health, as follows :—

“ He shall make an annual report to the Sanitary Authority, up to the end of December in each year, comprising a summary of the action taken, or which he has advised the Sanitary Authority to take, during the year for preventing the spread of disease, and an account of the sanitary state of his district generally at the end of the year. The report shall also contain an account of the inquiries which he has made as to conditions injurious to health existing in the district, and of the proceedings in which he has taken part or advised under any Statute, so far as such proceedings relate to those conditions ; and also an account of the supervision exercised by him, or on his advice, for sanitary purposes over places and houses that the Sanitary Authority have power to regulate, with the nature and results of any proceedings which may have been so required and taken in respect of the same during the year. The report shall also record the action taken by him, or on his advice, during the year in regard to offensive trades, to dairies, cowsheds, and milk shops, and to factories and workshops.

“ The report shall also contain tabular statements (on forms to be supplied by us, or to the like effect) of the sickness and mortality within the district, classified according to diseases, ages, and localities.”

Under Section 132 of the Factory and Workshop Act, 1901, the Medical Officer of Health is also required to report annually on the administration of this Act in workshops and workplaces, and to send a copy of his annual report, or so much of it as deals with this subject, to the Secretary of State. The report should also include an account of the action with respect to factories, workshops and workplaces taken under the Public Health Acts, as well as under the Factory and Workshop Act, 1901, and should contain a record of any certificates of suitability which have been granted by the Sanitary Authority during the year with respect to underground bakehouses in use at the passing of this Act.

In a memorandum issued by Mr. W. H. POWER, C.B., the Medical Officer of the Local Government Board, dated November, 1906, the subjects concerning which the Board desire to obtain information are enumerated as follows :—

Physical features and general character of the district.

The chief occupations of the inhabitants, and the influence of any particular occupation on public health.

House accommodation, especially for the working classes : its adequacy and fitness for habitation. Sufficiency of open space about houses, and cleanliness of surroundings. Supervision over erection of new houses. Action under the Housing of the Working Classes Act.

Sewerage and drainage : its sufficiency in all parts of the District. Condition of sewers and house drains. Method or methods of disposal of sewage. Localities where improvements are needed.

Pollution of rivers and streams in the District : the sources and nature of such pollution, and any action taken to check it.

Excrement disposal : system in vogue ; defects, if any.

Removal and disposal of house refuse—whether by public scavenger or occupiers : frequency and method.

Water supply of the District or of its several parts : its source (from public service or otherwise), nature (river water, well water, upland water, etc.), sufficiency, wholesomeness, and freedom (by special treatment or otherwise) from risks of pollution.

Places over which the Council have supervision, *e.g.*, lodging houses, slaughterhouses, dairies, cowsheds, and milkshops, bakehouses, factories and workshops, and offensive trades.

Schools, especially public elementary schools : sanitary condition of, including water supply ; action taken in relation to the health of the scholars and for preventing the spread of infectious disease.

Byelaws : steps taken for their enforcement ; and need of amendment or of further byelaws.

Nuisances : proceedings for their abatement—any remaining unabated.

Methods of dealing with infectious diseases : notification, isolation hospital accommodation and its sufficiency ; disinfection.

PHYSICAL FEATURES OF DISTRICT.—An account of the geology of the district was inserted in the report for the year 1903, it will therefore be unnecessary to repeat in detail the information upon this subject given therein.

The City of Cardiff comprises 6,373 acres of land and inland water, exclusive of foreshore and tidal water, and is situated upon impervious strata, consisting for the most part of new red marl ; resting upon this formation are the more superficial deposits of river gravel, more or less saturated with water. A gradual rise in the gravel takes place towards the north, so as to attain a level of nearly 40 feet above Ordnance Datum in Queen Street and the Newport Road, and 50 feet at Cathays, where, resting on the red marl, it forms a deposit to a depth varying from 8 to 20 feet of good building land, upon which the greater part of the north-east side of the town is constructed. The part of the town situated on the west of the River Taff is, in the Northern or Canton district, on an alluvial deposit of clay, sand and gravel ; the southern or Grangetown ward being on the estuarine mud—a stiff blue clay of marine origin, which forms also the soil in the neighbourhood of the Docks and South Splott. This low-lying part of the town is now protected from the sea and tidal waters by banks, and has in many parts been raised by the deposit of made soil composed of ashes and house refuse collected by the public scavengers. The southern part of the town therefore consists of alluvial land at a very slight elevation above the ordinary sea level near the mouths of the Rivers Rhymney, Taff, and Ely.

The Rhymney and Ely, at the points at which they enter the Bristol Channel, form respectively the eastern and western limits of the City ; the Taff flowing in a southerly direction forms a natural division of the town into east and west, each having a separate drainage system.

The area of the City is distributed in Registration Sub-districts as follows :—East Cardiff, 481 acres, Central Cardiff, 3832 acres, and West Cardiff, 2,060 acres ; and into ten Municipal Wards, containing the civil parishes of Canton, Roath, St. John, and St. Mary.

Cardiff is well provided with parks and open spaces, forming admirable recreation grounds and breathing spaces for the inhabitants of the crowded parts of the town. Those places, which belong to the public and are under the control of the Cardiff Corporation, comprise a total area of over 300 acres, as follows :—

					Acreage, Exclusive of Roads.		
					A. R. P.		
Roath Park (part of)	..	..	..	..	103	0	0
Victoria Park	..	..	..	..	19	2	36
Canton Park	..	..	..	..	6	1	36
Loudoun Square	..	..	..	..	1	1	37
Howard Gardens	..	..	..	..	1	0	36
Adamsdown Square	..	..	..	..	0	1	26
Plasturton Gardens	..	..	..	..	0	3	0
Dispenser	..	..	..	..	0	3	19
Clare	..	..	..	..	0	0	39½
Moorland	..	..	..	..	1	2	13
Grangetown	..	..	..	..	3	0	14
Llanbleddian	..	..	..	..	0	0	37
Ruthin	..	..	..	..	0	0	27
Senghenydd	..	(North)	..	..	0	1	6
"	..	(South)	..	..	0	0	12½
Windsor Esplanade Gardens	..	..	..	..	0	1	37
Roath Village Green	..	..	..	..	0	0	28
Roath Open Space	..	..	..	..	3	0	0
Splott Recreation Ground	..	..	..	..	18	0	0
Llandaff Fields	..	..	..	..	70	0	0
Cathays Park	..	..	..	..	60	0	0
Allen's Bank Crescent Open Space	..	..	..	..	0	1	16
Grangetown Recreation Ground	..	..	..	..	9	2	0
Total	..	..	..	..	301	0	20

In addition to the above named open spaces the public has, through the generosity of the owners, free access to the following parks and fields :—

					A.	R.	P.
Sophia Gardens	..	..	..	..	41	3	0
Sir David's Field	..	..	..	..	9	0	0
Cardiff Arms Park	..	..	..	..	21	2	0

HOUSE ACCOMMODATION.—The following Table gives the number of houses within each Municipal Ward in the City of Cardiff, as shown by the enumeration made in June, 1906, by the Inspectors in the Department of the Medical Officer of Health.

TABLE I.

WARDS.	Area in Acres.	HOUSES.						POPULATION
		Inhabited.	Uninhabited.		Building.	Total.		
			In occupation	Not in occupation				
Central	473	1,937	256	140	—	2,333	11,234	
South	519	1,788	49	98	—	1,935	10,370	
Cathays	369	3,768	7	59	39	3,873	21,854	
Adamsdown	1,570	2,063	20	156	—	2,239	11,965	
Riverside	313	3,112	20	111	1	3,244	18,049	
Canton	449	4,190	6	93	40	4,329	24,302	
Grangetown	1,905	3,460	1	62	—	3,523	20,068	
Roath	766	2,784	7	113	35	2,939	16,147	
Park	533	4,466	34	70	85	4,655	25,902	
Splott	1,454	2,924	21	74	13	3,032	16,959	
Totals	*8,351	30,492	421	976	213	32,102	176,850	

* Including inland water and foreshore.

TABLE II.

The following Table, taken from the Census returns, shows the number of inhabited houses and population in Registration Sub-districts in 1891 and 1901 :—

Registration Sub-Districts,	Area in Statute Acres Land and Inland Water	Inhabited Houses.		Enumerated Population.		Increase or Decrease of Population between 1891 and 1901	
		1891.	1901.	1891.	1901.	Increase.	Decrease.
East Cardiff ..	481	5,838	9,297	35,294	52,585	17,291	—
Central Cardiff ..	3,832	8,102	8,835	53,824	54,316	492	—
West Cardiff ..	2,060	6,536	9,843	39,797	57,432	17,635	—

The following Table shows the density of the population, or the average number of persons per acre of ground, within the City :—

TABLE III.

*DENSITY OF POPULATION DURING THE PAST TEN YEARS.

Year.	Persons per Acre.			
1897	23.5
1898	24.1
1899	24.7
1900	25.3
1901	25.9
1902	26.5
1903	27.0
1904	27.6
1905	28.1
1906	28.8

* Calculated on the basis of the revised population, and on area of 6,373 acres.

From an inspection of the district made in June, 1906, it was found that there were 976 vacant houses, and that 213 were in the process of building. There is, therefore, at the present time no lack of house accommodation in the town. Large block tenemented artisans dwellings, so objectionable on account of the overcrowding on a limited area, do not exist in Cardiff. Most of the working class families occupy separate dwellings, with an open space in the back and front, and sub-let one or two rooms to lodgers or other small families. Private building companies have, in some quarters of the town, i.e., Grangetown and Adamsdown, provided single tenement cottages, in which no lodgers are taken, at a rental of about 5/- per week. These houses provide excellent accommodation, containing usually four rooms in each house, and are seldom unoccupied for any length of time. The number of houses and shops in the City, for which plans have been passed in each year since 1894 is shown in the following table :—

TABLE IV.

From August, 1894 to August, 1895 ..	1,507
" " 1895 " " 1896 ..	1,196
" " 1896 " " 1897 ..	1,247
" " 1897 " " 1898 ..	1,258
" " 1898 " " 1899 ..	624
" " 1899 " " 1900 ..	267
" " 1900 " " 1901 ..	230
" " 1901 " " 1902 ..	185
" " 1902 " " 1903 ..	398
" " 1903 " " 1904 ..	225
" " 1904 " " 1905 ..	389
" " 1905 " " 1906 ..	291

There are no large insanitary areas in the City which could be conveniently dealt with for the purposes of an improvement scheme under Part I. of the Housing of the Working Classes Act, 1890, but a considerable number of houses have been closed as unfit for human habitation, under the provisions of Part II. of the Act. Amongst the dwellings which have been permanently closed (since 1890) either by a closing order, as provided by Sec. 32 of the Act, or by the voluntary action of the owner, after initial proceedings by the Sanitary Authority, may be mentioned:—Mill Lane Court, 34 houses in Stanley Street, 12 houses in Leckwith Road, Kettle Court, Evans' Court, Union Buildings, Sandon Court, Dalton Court, Rising Sun Court, Jones' Court (Womanby Street), The Tunnel (Queen Street), Temperance Terrace (Working Street), Queen's Place, Masons' Arms Court, Love Lane Court, Castle Court, Moulders' Arms Court, Bryant's Court, Matthews' Court, Stacey Court, Picton Cottages, Stag Terrace, Jenkins' Court, Gullivers' Court, Evans' Court, Jonathan's Court, Spring Garden Court, and Hodges' Row.

Some difficulty occasionally occurred in the administration of this Act, as it was necessary in all cases, before applying to the Court of summary jurisdiction for a closing order, to serve a notice upon the owner or occupier of the house to abate a nuisance and to place the premises in a good sanitary condition, although it was obvious that this notice could not be complied with. This difficulty has now been overcome by the passing of the Housing of the Working Classes Act, 1903, which amends the procedure for closing orders, and enables the Local Authority to apply for a closing order although such notice has not been served.

From the Table of House Inspection contained in this report, it will be seen that a large number of sanitary defects have been discovered by the Inspectors during the year. These were remedied for the most part either at the written request of the Inspector of Nuisances, or upon the service of a preliminary notice. In some few cases it was necessary to proceed for the abatement of the nuisance in accordance with the provisions of the Public Health Act.

The erection of new houses, together with the construction of their drainage, is under the control of the City Engineer and Surveyor. All such dwellings are constructed subject to the new Building Bye-laws, which came into force on the 21st March, 1900.

WATER SUPPLY.—Cardiff is provided with an abundant and pure supply of soft water, obtained from the Taff Fawr Watershed of the Brecon Beacons. To Mr. C. H. Priestley, M.I.C.E., Waterworks Engineer, I am indebted for the following information. The gathering ground is situated to the north of the South Wales Coalfield, on the old red sandstone formation, about 35 miles from Cardiff. The watershed consists of 10,400 acres of mountain pasture land, and the water is conveyed by gravitation from the storage reservoirs down the Taff Valley to the reservoirs at Lisvane and Llanishen; balancing reservoirs being placed at suitable situations along the line of the main conduit, with filter beds of sand, etc., at Rhubina and the Heath. At the latter place one battery of 4 Candy's Polarite filters have been fixed in addition to the existing filter beds.

The capacity of the storage reservoirs is as follows:—

Beacons Storage Reservoir, Taff Fawr	..	345,000,000 gallons.
Cantreff	..	323,000,000 ..
Llanishen	..	317,000,000 ..
Lisvane	..	80,000,000 ..

Besides the storage reservoirs, the works comprise several smaller service reservoirs and filter beds. The average annual rainfall at the Beacons Reservoir for the 22 years, 1885-1906, was 75.57 inches. The average consumption of water per head per day within the limits of the area of supply during the year 1906 was 26.26 gallons.

In previous reports the desirability of purchasing the Storey Arms Inn has been alluded to; the object being to remove all possible danger of pollution to the Beacons Reservoir from the drainage of these premises. The purchase of these premises is now complete, and steps will be immediately taken to remove this source of danger.

Bacteriological examinations and chemical analyses of the Cardiff Water Supply are made at the Public Health Laboratory, and the results are submitted to the Waterworks Committee at their monthly meetings. The following tables give the most recent results of these examinations :—

BACTERIOLOGICAL ANALYSIS OF SAMPLES OF CARDIFF WATER.

Date Collected.	Description of Sample.	Number of Organisms per c.c.		REMARKS.
		At 37°C.	At 20°C.	
1906				
October 2	Beacons Reservoir ..	10	58	B. Coli present in 10 c.c. ; not in 2 c.c.
" 2	Cantref Reservoir ..	284	352	B. Coli present in 2 c.c. ; not in 0.5 c.c.
" 3	Lisvane Reservoir ..	4	68	B. Coli present in 10 c.c. ; not in 2 c.c.
" 3	Llanishen Reservoir ..	6	424	B. Coli present in 10 c.c. ; not in 2 c.c.
" 3	Rhubina Filter ..	104	liquefied	B. Coli present in 40 c.c. ; not in 10 c.c.
" 3	Heath Filters ..	2	4	B. Coli absent from 40 c.c.

CHEMICAL ANALYSIS OF SAMPLES OF CARDIFF WATER.

All results are stated in parts per 100,000.

Sample	Date collected	Reaction	Hardness	Chlorine	Ammonia		Nitrogenous Nitrates	Oxygen absorbed, 4 hours, 80° F.
					Free	Albuminoid		
Beacons Reservoir ..	1906, October 2	Faintly Alkaline	2.85°	.75	.0032	.0096	Less than .01	.147
Cantref Reservoir ..	October 2	Faintly Alkaline	2.8°	.75	.0012	.0096	Less than .01	.191
Llanishen Reservoir	October 3	Faintly Alkaline	2.9°	.8	.0012	.0074	No appreciable trace	.123
Lisvane Reservoir ..	October 3	Faintly Alkaline	2.9°	.8	.0012	.0058	No appreciable trace	.070
Heath Filter ..	October 3	Alkaline	3.4°	.75	.0010	.0042	No appreciable trace	.095
Rhubina Filter ..	October 3	Alkaline	3.7°	.75	.0010	.0046	No appreciable trace	.099

MEAT INSPECTION.—The inspection of meat and other articles of food has been carried on as usual during the year. As all the slaughtering within the limits of the City is done in the Public Abattoirs belonging to the Corporation, it is comparatively easy to exercise an efficient inspection of meat, and to detect conditions which render it unfit for food before it is exposed for sale.

Under these circumstances, when unsound meat is discovered and is voluntarily surrendered by the owner, no proceedings are taken under Sections 116 and 117 of the Public Health Act, 1875, and no order for destruction is in such cases made by the magistrates, but the meat is destroyed under the supervision of the Inspector of the Sanitary Authority.

Mr. P. J. Mullane, M.R.C.V.S., Veterinary Surgeon to the Corporation, acts as the Chief Inspector of Meat. By arrangement between the Health Committee and the Property and Markets Committee, Mr. N. Rees, the Superintendent of the Roath Abattoir, and four of his Assistants, are appointed to assist in the inspection of meat at the Public Slaughter Houses. A special Inspector, Mr. G. M. McGregor, who was formerly a butcher, acts as Inspector of Foods in Shops.

In each case of suspected tuberculosis or other disease in any carcase, specimens of the morbid deposit are forwarded to the Public Health Laboratory for examination by Dr. Schölberg.

The following table gives the amount of meat, in pounds, found by the Medical Officer of Health to be unfit for food, and destroyed either with the consent of the owner or by an order of a Magistrate, in each year during the period 1896—1906.

Year						Meat
1896	..	..	..	..	..	3,896 lbs.
1897	..	..	..	..	..	10,824 „
1898	..	..	..	..	..	9,929 „
1899	..	..	..	..	..	14,205 „
1900	..	..	..	..	..	21,217 „
1901	..	..	..	..	..	33,696 „
1902	..	..	..	..	..	43,675 „
1903	..	..	..	..	..	41,710 „
1904	..	..	..	..	..	41,606 „
1905	..	..	..	..	..	41,212 „
1906	..	..	..	..	..	48,909 „

During the year 1906 the number of animals slaughtered in the Public Slaughter Houses in the City was as follows:—

			Road Abattoir	Canton Abattoir
Beasts	..	..	5,632	1,020
Sheep	..	..	38,365	5,610
Calves	..	..	4,486	260
Pigs	..	..	18,672	3,538
Totals	..	..	67,155	10,428

UNSOOUND MEAT SEIZED OR SURRENDERED.

Place of Seizure					Number of Carcases	Number Condemned by Magistrates	Number Destroyed by arrangement with Owner	Total Weight in lbs. of whole and part Carcases.
Road Slaughter House	..	..	..	..	94	1	93	27,802
Canton	..	..	..	..	14	—	14	5,189
Totals	..	..	..	..	108	1	107	32,991

The cause of seizure in each case was as follows:—

Tuberculosis	..	..	44 beasts.	Dropsy	..	..	..	1 sheep.
„	..	..	41 pigs.	Jaundice	..	..	..	1 pig.
Injuries	..	..	6 pigs.	Peritonitis	..	..	..	2 pigs.
„	..	..	7 sheep.	Suffocation	..	..	..	1 pig.
Decomposition	..	..	4 sheep.	Inflammation	..	..	..	1 pig.

OTHER ARTICLES OF FOOD SEIZED OR SURRENDERED.

Place of Seizure	Description of Articles Seized	Condemned by Magistrate	Destroyed by arrangement with Owner	Total weight in lbs
Central Market ..	7 pieces of veal	1	—	25
	2 quarters of lamb	—	1	13
	1 piece of beef	—	1	20
	Quantity of pork	—	1	142
Ice House	1 bag of cockles	—	1	84
	4 quarters of beef	—	1	850
	6 pieces of beef	—	1	1,070
	2 boxes of fish	—	1	224
	38 rabbits and 5 pigeons	—	1	86
	3 hind quarters and loin of chilled beef	—	1	650
	6 hares, 1 goose, 1 turkey	—	1	40
	25 geese, 1 turkey, 1 calf's head, and 2 rabbits	—	1	208
	15 hares	—	1	45
	60 ox tails	—	1	40
Public Street	Box of fish	—	1	14
Railway Station ..	2 bags of meat	—	1	170
	39 boxes of fish	—	1	1,120
	79 boxes of fish	—	1	3,080
Shops	1 barrel of pork	—	1	250
	2 livers	—	1	17
	3 pigs heads	—	1	78
	Quantity of pork	—	1	402
	5 baskets of fruit	—	1	40
	Quantity of beef	—	1	371
	8 pieces of meat	1	—	42
	5 pieces of tripe	1	—	3
	43 tins of sardines	1	—	45
	Quantity of mutton	—	1	40
	16 pieces of bacon	—	1	97
	4 pots of brawn	—	1	16
	25 tins of preserves	—	1	21
	15 tins of fruit	—	1	30
	32 packets of dates	—	1	60
	Quantity of salt fish	—	1	56
	4 rabbits, 1 fowl, 1 heart	—	1	22
	62 tins of preserved food	—	1	160
	Quantity of bananas	1	—	20
Stores	30 boxes of fish	—	1	2,294
	Beef	—	1	186
	8 tins of brawn	—	1	130
	Veal	—	1	70
	13 bags of fish	—	1	1,456
	253 boxes and tins of tomatoes	—	1	1,406
	9 boxes of haddock	—	1	320
	2 trays of bloaters	—	1	40
	1 box of red herrings	—	1	28
	2 tins of prawns	—	1	36
	120 tins of apricots	—	1	300
Totals		5	43	15,918

As most of the meat dealt with as unfit for food is condemned in consequence of tubercular deposits on the carcase or in the organs, it may be as well to enclose a copy of a circular letter from the Local Government Board, and to point out that the procedure in this district is in accordance with the principles laid down in the Board's letter; and, further, as there are no private slaughter-houses in the City, the condition of the meat is usually discovered by the Meat Inspectors at the

Municipal Abattoirs, immediately after slaughter, and if found to be diseased, the meat is surrendered voluntarily, and such cases are not taken into Court.

Although the danger of transmitting tuberculosis through the medium of meat may not be very great, it is felt that in the interests of the consumer the inspection should be as complete and as thorough as possible. Within the City this inspection meets all reasonable requirements, but, at the same time, it affords an insufficient protection against the introduction of diseased meat from without the urban district.

The difficulties of inspecting meat in rural districts, in which there is a large number of private slaughter-houses, are considerable, but I fear that no great efforts are made to overcome these difficulties. In some continental cities, meat stations have been established for the examination of all carcasses slaughtered outside the urban districts. To introduce this method into this district, it would be necessary to obtain powers in a Local Act of Parliament, a step which is now under the consideration of your Authority.

Circular letter relating to the seizure and condemnation of tuberculous meat, received from the Local Government Board:—

SEIZURE AND CONDEMNATION OF TUBERCULOUS MEAT.

Local Government Board.

Whitehall, S.W..

7th September, 1904.

Sir,

I am directed by the Local Government Board to state that they have had under consideration the Report of the Select Committee of the House of Commons on the Tuberculosis (Animals) Compensation Bill 1904, in which reference is made (a) to the variety of practice alleged to exist with regard to the amount of tubercular deposit, the existence of which in a carcass is held to justify its total condemnation; and (b) to complaints made by butchers as to the injury caused to them by their prosecution in open court for having tuberculous meat upon their premises.

With regard to (a) it appears to the Board to be most desirable that there should be uniformity in the practice of Meat Inspectors in dealing with the carcasses of cattle; and they have already on two occasions, viz., in their circular letters of the 11th March, 1899, and 6th September, 1901, set out and urged the observance of the principles laid down by the Royal Commission on Tuberculosis in their report of 1898 with respect to the degree of tubercular disease which should cause a carcass or part thereof to be seized. The Royal Commission stated as follows:—

“We are of opinion that the following principles should be observed in the inspection of tuberculous carcasses of cattle:—

- | | |
|---|--|
| (a) When there is miliary tuberculosis of both lungs. | } The entire carcass and all the organs may be seized. |
| (b) When tuberculous lesions are present on the pleura and peritoneum. | |
| (c) When tuberculous lesions are present in the muscular system, or in the lymphatic glands embedded in or between the muscles. | |
| (d) When tuberculous lesions exist in any part of an emaciated carcass. | |
| (a) When the lesions are confined to the lungs and the thoracic lymphatic glands. | } The carcass, if otherwise healthy, shall not be condemned, but every part of it containing tuberculous lesions shall be seized.” |
| (b) When the lesions are confined to the liver. | |
| (c) When the lesions are confined to the pharyngeal lymphatic glands. | |
| (d) When the lesions are confined to any combination of the foregoing, but are collectively small in extent. | |

The Board are of opinion that, at the present time, measures more stringent than those advocated by the Royal Commission are not called for; but they would impress upon the Council the expediency and desirability of insisting upon those of their officers who are employed as Meat Inspectors acting in strict accordance with the principles thus laid down, if this is not already the case.

With regard to (b) the Select Committee express their view that, if a butcher who is in possession of tuberculous meat has notified the fact to the proper authority as soon as he could be reasonably expected to be aware of it, the case should not be taken into Court.

The Board understand that in some districts the course recommended by the Committee is followed now, but where this is not so, the Board suggest that, having regard to the serious consequences which may result to a butcher from prosecution in open Court for being in possession of tuberculous meat, the Council should act upon the view expressed by the Select Committee in cases where such possession is voluntarily and promptly disclosed by the owner.

I am, Sir,

Your obedient Servant,

S. B. PROVIS,

Secretary.

A further and second interim report has recently been issued by the Royal Commission appointed to inquire into the relations of Human and Animal Tuberculosis.

The conclusions arrived at, as the result of prolonged investigations and experimental research, will doubtless have an important bearing upon any future legislation relating to food inspection. The main problems which required solution at the hands of the Commission were :—(1) Whether tubercular disease in animals and man is one and the same. (2) Whether animals and man can be reciprocally infected with it. (3) Under what conditions, if at all, the transmission of the disease from animals to man takes place, and what are the circumstances favourable or unfavourable to such transmission.

In attempting to decide the first question it was necessary to inquire whether the bacillus of bovine tuberculosis was identical with the bacillus of human tuberculosis, and whether the pathological changes brought about in a living body by the one were identical with those brought about by the other. For this purpose, it was necessary to introduce the bacillus of human tuberculosis into the bovine body, and to compare the changes set up by that introduction with the changes set up in the bovine body by the bacillus of bovine tuberculosis. Investigations were therefore made into the effects produced in the bovine body by the introduction of the bacillus of human tuberculosis, and into the effects produced in the bovine body by the introduction under similar conditions of the bacillus of bovine tuberculosis. These parallel investigations were carried on at two separate farms, and Jersey calves were in the great majority of cases the animals experimented on.

The chief methods adopted for introducing the bacillus of bovine tuberculosis into the body of the calves were, (1) feeding, (2) injection into the tissues. The results obtained by the introduction of the bacillus of bovine tuberculosis subcutaneously into the bovine animal were briefly as follows :—(1) A fatal generalised progressive tuberculosis; or (2) a limited retrogressive tuberculosis; or (3) effects intermediate between the above two. The chief factor determining the amount of disease produced being the dose. The greater effect being produced by the larger number of bacilli introduced. The experiments made with the object of ascertaining the effects of feeding calves with the bacillus of bovine tuberculosis showed that the disease in its acute, progressive, and generalised form was not so readily produced as by subcutaneous injection. The results were considered parallel to the effects of the subcutaneous injection of very small doses. Other animals than calves were experimented upon, in particular, monkeys and anthropoid apes, and it is pointed out in the report, "that the fact that the bacillus of bovine tuberculosis can readily be fed, as well as by subcutaneous injection, give rise to generalised tuberculosis in the anthropoid ape, so nearly related to man, has an importance so obvious that it need not be dwelt upon."

The effects of introducing into the bovine animal the bacillus from cases of human tuberculosis, differed according to the virulence of the material used. When the most virulent material was used, it was found that the effects were in every respect one and the same as the effects produced by the introduction of the bacillus of bovine tuberculosis; acute, generalised, and fatal tuberculosis was produced. When the less virulent material was used the effects were much less marked, and in some cases no effects at all were produced; generally only limited, circumscribed, and retrogressive local lesions were found. The difference, however, in virulence appeared to be one of degree only.

The Commissioners state "that taking all these several facts into consideration, we feel justified in asserting that, regard being had to the differences which present themselves according to the extent of disease produced, and the phase in which the disease exists at the time of examination, the tuberculosis set up by the bacillus of human source is, so far as its anatomical and histological features are concerned, one and the same as the tuberculosis set up by the bacillus of bovine source."

The conclusions arrived at by the Commission may be summarised as follows:—"There can be no doubt but that in a certain number of cases the tuberculosis occurring in the human subject, especially in children, is the direct result of the introduction into the human body of the bacillus of bovine tuberculosis; and there can also be no doubt that in the majority of these cases the bacillus is introduced through cow's milk. Cow's milk containing bovine tubercle bacilli is clearly a cause of tuberculosis, and of fatal tuberculosis, in man

"A very considerable amount of disease and loss of life, especially among the young, must be attributed to the consumption of cow's milk containing tubercle bacilli. The presence of tubercle bacilli in cow's milk can be detected, though with some difficulty, if the proper means be adopted, and such milk ought never to be used as food. There is far less difficulty in recognising clinically that a cow is distinctly suffering from tuberculosis, in which case she may be yielding tuberculous milk. The milk coming from such a cow ought not to form part of human food, and indeed, ought not to be used as food at all.

"Our results clearly point to the necessity of measures more stringent than those at present enforced being taken to prevent the consumption of such milk."

It may be pointed out here in connection with this recommendation of the Royal Commission, that the only powers which your Authority possess at present are contained in the Dairies, Cowsheds, and Milkshops Order of 1899, which enacts that when disease of the udder of a cow is certified by a Veterinary Surgeon to be tubercular, the milk from such cow (*a*) shall not be mixed with other milk, and (*b*) shall not be sold or used for human food.

It will be noticed that there is nothing to prevent such milk being used for the food of other animals, and the introduction of tuberculosis in this way; and that milk from cows suffering from generalised tuberculosis, provided the udder is not affected, may be used to any extent for human food.

It is clear that further legislation is required in the direction indicated by the Royal Commission. It is to be noticed that with respect to the inspection of meat, and the condemnation of tubercular carcasses, no further recommendations are made.

The principles laid down by the Royal Commission on tuberculosis in their report of 1898 will therefore be observed as heretofore.

SALE OF FOOD AND DRUGS ACTS.—Samples of food and drugs taken in the City of Cardiff during the year 1906, and submitted to the Public Analyst, Mr. Thomas Hughes, F.I.C., F.C.S. :—

Samples obtained.	Number of Samples.	Number of Genuine Samples.	Number of Samples Adulterated.	Fines.
Milk	345	317	28	£10 and costs; £5 and costs; £5; £4 and costs (2); £3 and costs (2); £1 including costs (3); 10/- including costs (5); 5 including costs; 5 cases fined cost 4 cases dismissed; 1 case withdrawn; no action taken in 2 cases.
„ (Unofficial) ..	2	1	1	No action taken.
Butter	24	23	1	Case dismissed.
„ (Unofficial) ..	16	16	—	
Margarine	31	31	—	
Flour	16	16	—	
Cornflour	14	14	—	
Beer	12	12	—	
Demarara Sugar ..	10	10	—	
Sweets	17	17	—	
Baking Powder ..	18	18	—	
Rice	8	8	—	
Coffee	12	12	—	
Arrowroot	4	4	—	
Tea	12	12	—	
Sulphate of Soda ..	8	8	—	
Pepper	12	12	—	
Lard	3	3	—	
Cheese	3	3	—	
Tinned Meat	12	11	1	
(Unofficial)				
Ginger	9	9	—	
Sago	1	1	—	
Cream	1	1	—	
Bread	3	3	—	
Oatmeal	3	3	—	
Bicarbonate of Soda ..	1	1	—	
Precipitated Sulphur ..	3	3	—	
Totals	600	569	31	£39 15s. 0d. and costs.

The following circular letter relating to “Preservatives in Milk” was received from the Local Government Board :—

PRESERVATIVES IN MILK.

LOCAL GOVERNMENT BOARD,
WHITEHALL, S.W.,
11TH JULY, 1906.

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 the 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 shew 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 one 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.

Additional copies of this Circular are enclosed for transmission to the public analyst and for use by executive officers under the Sale of Food and Drugs Acts. The circular will be placed on sale and copies can then be obtained from Messrs. Wyman & Sons, Limited, 109, Fetter Lane, Fleet Street, London, E.C., either directly or through any bookseller.

I am, Sir,

Your obedient Servant,

S. B. PROVIS,

Secretary.

Acting in accordance with the suggestion of the Board, all milk dealers were notified that action would be taken under the Sale of Food and Drugs Acts in instances where preservatives are reported in milk.

The following is a summary of a report submitted to the Sanitary Authority during the year 1906:—

The tables show (1) that the number of samples submitted for analysis in Cardiff per 1,000 of the population is above the average of the large towns (2) that the percentage proportion of adulterated samples is much below the average.

In view of the fact that only one Inspector besides the Chief Inspector is now competent to take samples under the Sale of Food and Drugs Acts, and that he is probably well-known to most tradesmen, the suggestion of the Committee that some of the other Inspectors in the Medical Officer of Health's Department be appointed to do this work would seem to be a wise one.

The provisions of the Act (Sec. 13) require that the person procuring a sample of food for analysis must be either a Medical Officer of Health, an Inspector of Nuisances, an Inspector of Weights and Measures, an Inspector of a Market, or any Police Constable, and that such person must be directed to take samples and be paid by the Local Authority. The Inspector of Nuisances is also required by the General Order of the Local Government Board, March, 1891, which defines his duties, to submit samples of food and drugs for analysis, when directed by the Sanitary Authority. You can therefore direct him to take samples under the terms of his appointment as Inspector of Nuisances. The General Order does not, however, impose this duty upon the Medical Officer of Health.

Your Inspector of Nuisances, Mr. D. Vaughan, has been directed to take samples, and he does so at the present time. If the Assistant Inspectors are appointed to assist in this work, they must also be appointed either Inspectors of Markets or Police Constables. As I presume that you do not wish these Inspectors to act under the direction of the Head Constable, it follows that they must be appointed Inspectors of Markets or Provisions under Sec. 20 of the Markets and Fairs Clauses Act, 1847, and they may be required to act under the direction of the Medical Officer of Health, who would then be in a position to direct any of his staff so appointed to take samples of food at any time in any part of the town.

The Inspectors appointed may in certain cases send a deputy into a shop to take samples, but they must be at hand themselves to enter the shop immediately afterwards, as it is only the person purchasing who can submit samples for analysis. A sample taken in course of delivery, at the Railway Station, &c., and in pursuance of any contract, cannot be taken by deputy, but must be taken by the Officer appointed by the Local Authority.

There would be some advantage in appointing the Inspectors under the Markets and Fairs Clauses Act, as they would then also have power to inspect provisions in markets and to seize unwholesome food.

Statement showing the number of samples of all kinds examined under the Sale of Food and Drugs Acts in 61 large provincial towns and in the County of Glamorgan during 1905:—

	Estimated Population Middle of 1905.	Total Number of Samples Examined.	Samples per 1000 of the Population.	Number of Samples Adulterated.	Percentage Adulterated.
Croydon	147,704	356	2.41	36	10.1
West Ham	294,997	995	3.37	114	11.4
Hastings	66,826	154	2.30	7	4.5
Brighton	127,183	503	3.95	56	11.1
Portsmouth	201,975	1059	5.24	89	8.4
Bournemouth	66,168	300	4.53	42	14.0
Southampton	114,897	425	3.69	40	9.4
Reading	77,674	163	2.09	23	14.1
Northampton	92,441	223	2.41	22	9.8
Ipswich	70,802	60	0.84	4	6.6
Great Yarmouth	52,353	100	1.91	21	21.0
Norwich	116,741	195	1.67	34	17.4
Plymouth	116,000	236	2.03	9	3.8
Devonport	76,864	89	1.15	2	2.2
Bristol	358,515	802	2.23	119	14.8
Hanley	64,667	153	2.36	1	0.6
Burton-on-Trent	52,424	85	1.62	5	5.8
Wolverhampton	99,456	261	2.62	13	4.9
Walsall	92,998	105	1.12	14	13.3
West Bromwich	67,823	140	2.06	3	2.1
Birmingham	542,959	1233	2.27	123	9.9
Coventry	75,134	201	2.67	12	5.9
Leicester	228,132	338	1.48	15	4.4
Grimsby	68,153	155	2.27	12	7.7
Nottingham	251,671	604	2.39	71	11.7
Derby	122,207	115	0.94	15	13.0
Stockport	98,320	305	3.10	18	5.9
Birkenhead	116,035	110	0.94	9	8.1
Liverpool	730,143	2101	2.87	205	9.7
Bootle	62,758	241	3.84	14	5.8
St. Helens	89,843	201	2.23	9	4.4
Wigan	86,581	306	3.53	8	2.6
Warrington	68,301	210	3.07	22	10.4
Bolton	178,111	400	2.24	17	4.2
Bury	58,594	114	1.94	7	6.1
Manchester	631,185	2713	4.29	110	4.0
Salford	231,514	801	3.45	28	3.4
Oldham	140,225	244	1.74	13	5.3
Rochdale	86,390	177	2.04	11	6.2
Burnley	101,682	343	3.37	14	4.0
Blackburn	133,067	249	1.87	11	4.4
Preston	115,721	270	2.33	17	6.2
Barrow-in-Furness	60,306	125	2.07	11	8.8
Huddersfield	94,888	199	2.09	14	7.0
Halifax	108,419	164	1.51	12	7.3
Bradford	286,799	762	2.65	21	2.7
Leeds	456,787	589	1.28	118	20.0
Sheffield	440,414	660	1.49	73	11.0
Rotherham	59,794	146	2.44	10	6.8
York	82,362	127	1.54	5	3.9
Hull	258,127	921	3.56	28	3.0
Middlesbrough	98,369	232	2.35	16	6.8
West Hartlepool	71,313	93	1.30	4	4.3
Sunderland	152,761	166	1.08	25	15.0
South Shields	109,360	150	1.37	16	10.6
Gateshead	120,620	115	0.95	10	8.6
Newcastle-on-Tyne	264,511	597	2.25	66	11.0
Tynemouth	53,595	46	0.85	13	28.2
Newport (Mon.)	72,880	150	2.05	20	13.3
CARDIFF	180,054	642	3.56	15	2.3
Swansea	96,384	330	3.42	16	4.8
Glamorgan (County jurisdiction)	*601,092	982	1.63	59	6.0

* Census, 1901.

Number of samples of milk examined and the percentage of adulterated samples in 9 large towns and in the County of Glamorgan during 1905:—

	Estimated Population middle of 1905	Milk Samples Examined	Adulterated	Percentage Adulterated
Brighton	127,183	286	37	12.9
Portsmouth	201,975	540	71	13.1
Bournemouth	66,168	108	22	20.3
Southampton	114,897	237	16	6.7
Bootle	62,758	125	8	6.4
Manchester	631,185	1256	83	6.6
Hull	258,127	278	23	8.2
CARDIFF	180,054	388	14	3.6
Swansea	96,384	141	12	8.5
Glamorgan (County jurisdiction)	*601,092	539	38	7.0

* Census, 1901.

After giving the matter due consideration, it was decided to appoint 11 Assistant Inspectors in the Department of the Medical Officer of Health to take samples of food and drugs under the Acts.

INSPECTION OF FACTORIES AND WORKSHOPS.—The Factory and Workshop Act of 1901 makes considerable alterations in and additions to the duties hitherto falling upon Medical Officers of Health. Under Section 132, the Medical Officer of Health is required in his Annual Report to deal specifically with the administration of the Act (so far as the matters under the charge of the Sanitary Authority are concerned), and to send a copy of this report to the Secretary of State.

The work carried out during the year 1906 is shown in the subjoined tables.

Sec. 101 of the Act imposes important duties on Sanitary Authorities in regard to underground bakehouses. The Section provides that no underground bakehouse shall be used as such unless it was so used at the time of the passing of the Act, *i.e.*, August 17th, 1901, and further, that after the 1st of January, 1904, no underground bakehouse (whenever established), may be used unless the Sanitary Authority is satisfied that it is suitable for the purpose in regard to construction, light, ventilation, and in all other respects, and have given it a certificate of suitability. A definition of the term "underground bakehouse" is given for the first time in this Act:—"A bakehouse is to be deemed an underground bakehouse if any room used for baking or for any process incidental thereto, is so situate that the surface of the floor is more than three feet below the surface of the footway of the adjoining street, or of the ground adjoining or nearest to the room." The question of the conditions under which these certificates should be granted is one of some difficulty, as no detailed instructions are given in the Act.

The matter is left entirely to the discretion of the Sanitary Authority, subject to the general principle that all underground bakehouses must be suitable as regards construction, ventilation, light, and in all other respects.

This section of the Act was apparently framed with the intention of encouraging the total abolition of underground bakehouses, and there can be no doubt that it would have this effect if Sanitary Authorities throughout the country were to adopt a high standard of suitability. On the other hand, as these certificates are not subject to periodical renewals, the practical working of this part of the Act may, unless extreme care is taken, result in the prolonged use of unsuitable premises.

In Cardiff there were only seven underground bakehouses at the time of the passing of the Act. Four of these have since been abolished as entirely unsuitable for the purpose.

Three certificates have been granted to the occupiers of underground premises after the completion of extensive structural alterations as required by the Sanitary Authority.

The following information is set forth on the form supplied by the Secretary of State, a copy of which was forwarded to the Home Office in January of the present year.

INSPECTION OF FACTORIES, WORKSHOPS, LAUNDRIES, WORKPLACES AND
HOMEWORK.

I.—INSPECTION.

PREMISES	NUMBER OF	
	Inspections	Written Notices
Factories (including Factory Laundries)	102	12
Workshops (including Workshop Laundries)	1,512	193
Workplaces (other than Outworkers' premises included in Part 3 of this Report)	26	7
Total	1,640	212

2.—DEFECTS FOUND.

PARTICULARS	NUMBER OF DEFECTS		
	Found	Remedied	
Nuisances under the Public Health Acts :—			
Want of cleanliness.. .. .	83	83	
Want of ventilation.. .. .	13	13	
Overcrowding	2	2	
Other nuisances	54	54	
*Sanitary accommodation .. {	insufficient	8	8
	unsuitable or defective	52	52
	not separate for sexes.. .. .		
Total	212	212	

* Section 22 of the Public Health Acts Amendment Act, 1890, adopted. Standard according to Order of Secretary of State under Section 9, Factory and Workshop Act, 1901.

3.—HOME WORK.

[illegible]

4.—REGISTERED WORKSHOPS.

Workshops on the Register, (S. 131), at the end of the Year.								Number.
Bakers	..	..	..	..	..	..	..	174
Tailors	..	..	..	..	..	..	..	255
Dressmakers	..	..	..	..	..	..	..	278
Other	..	..	..	..	..	..	..	480
Total number of Workshops on Register								1,187

5.—OTHER MATTERS.

CLASS.	NUMBER.
Matters notified to H.M. Inspector of Factories :—	
Failure to affix Abstract of the Factory and Workshop Act (Sec. 133) ..	47
Action taken in matters referred by H.M. Inspectors as remediable under the Public Health Acts, but not under the Factory Act :—	
Notified by H.M. Inspector	37
Reports (of action taken) sent to H.M. Inspector	37
Other (Sec. 127, Sub. Sec. 3)	133
Underground Bakehouses in use at the end of the year	3

INSPECTION OF FACTORIES AND WORKSHOPS.

FACTORY AND WORKSHOP ACT, 1901, SHOP HOURS ACTS, 1892-95-1904, AND THE SEATS FOR SHOP ASSISTANTS ACT, 1899.

During the year 1906, a large number of factories and workshops have been inspected. The results of these inspections are given in the annexed Tables :—

Nature of Factories and Workshops Inspected.	Number on Register.			Number of Inspections.
	Workshops.	Factories.	Total.	
Bakers	174	16	190	736
Sugar Boilers	3	3	6	3
Tailors	255	—	255	469
Dressmakers	278	—	278	99
Milliners	70	—	70	31
Corset Makers	1	—	1	—
Shirt and Hose Manufacturers	2	—	2	—
Bootmakers	99	—	99	30
Saddlers	13	—	13	2
Oilskin Manufacturers	4	—	4	—
Umbrella Makers	3	—	3	—
Laundries	18	10	28	23
Carpenters	31	—	31	31
Cabinet Makers	24	2	26	17
Upholsterers	22	—	22	2
Picture Frame Makers	10	—	10	2
Coopers	2	—	2	2
Pattern Makers	3	—	3	—
Bottlers	—	24	24	8
Packers	28	—	28	15
Tinsmiths	5	—	5	—
Blacksmiths	20	—	20	18
Plumbers	18	—	18	—
Engravers	2	—	2	—

INSPECTION OF FACTORIES AND WORKSHOPS.—Continued.

Nature of Factories and Workshops Inspected.	Number on Register.			Number of Inspections.
	Workshops.	Factories.	Total.	
Printers	—	24	24	21
Bookbinders	—	2	2	—
Paper Bag Makers	11	—	11	3
Box Makers	—	4	4	1
Watchmakers	8	—	8	—
Dentists	1	—	1	—
Blue Factory	—	1	1	2
Tent and Sail Makers	5	—	5	—
Basket Makers	2	—	2	—
Blind Makers	6	—	6	12
Mat Makers	1	—	1	1
Truss Makers	1	—	1	—
Bed Makers	1	1	2	1
Mattress Makers	1	1	2	—
Tobacco Pipe Makers	—	1	1	—
Musical Instrument Makers	6	—	6	—
Sewing Machine Makers	1	1	2	—
Perambulator Makers	1	—	1	—
Cycle Repairers	9	4	13	3
Electro Platers	—	2	2	2
Electricians	—	3	3	—
Cigar Manufacturers	—	1	1	3
Cigarette Manufacturers	2	3	5	4
Firewood Cutters	1	2	3	2
Cork Cutters	—	1	1	—
Stable Yards	—	—	—	26
Coach Builders	9	5	14	4
Engineers	—	30	30	4
Brass Workers	—	4	4	—
Wire Workers	1	—	1	—
File Works	—	1	1	—
Scale Makers	3	—	3	4
Oil and Colour Works	—	2	2	—
Rope Manufacturers	—	2	2	—
Hairdressers	4	—	4	—
Photographers	5	—	5	10
India Rubber Works	2	—	2	—
Aerated Water Manufacturers	—	3	3	—
Stone Masons	6	—	6	10
Cement Works	—	1	1	—
Asphalte Works	—	3	3	—
Rag Sorters	4	—	4	32
Plaster Moulders	3	—	3	—
Biscuit Works	—	2	2	2
Flour Mills	—	4	4	—
Furrier	1	—	1	1
Tanner	—	1	1	—
Jam Factory	—	1	1	2
Boat Builders	5	—	5	1
Saw Mills	—	10	10	1
Brick and Tile Works	—	1	1	—
Patent Fuel Works	—	1	1	—
Chemical Works	—	1	1	—
Copper Works	—	1	1	—
Milk Sterilizers	—	1	1	—
Optician	1	—	1	—
Heating Apparatus Fitting	1	—	1	—
Totals	1,187	180	1,367	1,640

NUISANCES IN FACTORIES AND WORKSHOPS.

	Bakers.	Tailors.	Dressmakers.	Carpenters.	Coach Builders.	Cabinet Makers.	Blind Makers.	Printers.	Blacksmiths.	Saddlers.	Laundries.	Bottlers.	Bootmakers.	Photographers.	Picture Framers.	Mat Makers.	Stone Masons.	Packers.	Sugar Boilers.	Stable Yards.	Hag Sorters.	Jam Makers.
W.c. accommodation provided	...	1	...	...	1	...	2	1	1	...	1	...	...	...	...	...	1	...	...	...	...	...
Drains trapped and repaired	...	7	2	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Flushing apparatus provided	...	2	2	2	1	1	...	1	...	...	1	...	...	...	...	...	...	...	...	...	...	...
W.c.'s cleansed and repaired	...	4	...	2	...	2	...	2	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Limewashing	...	6	2	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Workrooms ventilated	...	9	1	...	...	...	1	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Paving, roofs, &c., repaired	...	10	2	1	1	...	...	1	...	1	...	...	...	...	...	...	...	...	...	...	...	...
W.c. removed from workroom	...	1	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Defective smoke stacks	2	...	...	...	1	...	...	...	...	...	...	...	...	...	...	...
Accumulations	...	2	2	...	...	2	1	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Workrooms overcrowded
Stables paved and drained	1	...	...	...	...	...	...	...	...	...
Floors cleansed
Inside w.c.'s ventilated	1	...	...	...	...	...	...	...	...	...	...	...
Water in cellar	1	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Water put on	1	...	...	...	...	...	...	...	...	...
Manure pit provided
Totals	95	42	9	6	3	5	6	5	1	1	8	1	3	4	1	1	2	4	2	7	5	1

SHOP HOURS ACT, 1904.—This Act, which came into operation during the year 1904, enables Local Authorities to make Closing Orders, fixing the hours of closing on the several days of the week, either in the entire area of the district of the Local Authority or in any specified part thereof. The Closing Order may apply to all shops, or to shops of any specified class.

The Act requires that the occupiers of shops desirous of promoting early closing should apply to the Local Authority, who may then take further steps in accordance with the provisions of the Act.

Number of shops and persons affected by Closing Orders made under the Shop Hours Act, 1904:—

No. of Order.	Trade.	Number of shops.	Approximate number of persons.
1 ...	Barbers	181	400
2 ...	Bootmakers	38	64
3 ...	Bootsellers	42	118
4 ...	„	107	182
5 ...	„	48	90
Totals		416	854

SHOP HOURS ACT, 1904.

PROSECUTIONS.

Shops kept open during prohibited hours	..	..	2
Not exhibiting notices	..	..	17
Total	..	..	19

RESULTS.

Fined 20/- and costs 5/6..	..	..	1
„ 10/- ..	..	..	1
„ 5/- ..	..	..	1
„ costs (5 at 5/6, 1 at 7/6)	..	..	6
Cautioned	..	..	9
Dismissed	..	..	1
Total	..	..	19

SHOP HOURS ACTS.

Nature of Shops Inspected.					Number of Inspections.	Employing Young Persons.	Employing Females.	Seats Provided.
Drapers	..	..	..	..	85	76	85	85
Grocers	..	..	..	..	60	55	..	..
Butchers	..	..	..	..	46	39	..	..
Hairdressers and Tobacconists	..	..	..	..	1,252	80	98	98
Newsagents and Stationers	..	..	..	..	60	47	52	52
Public Houses..	..	..	..	..	21	1	21	21
Boot Dealers	..	..	..	..	668	49	65	65
Confectioners	..	..	..	..	35	18	35	35
Fancy Dealers	..	..	..	..	36	18	35	35
Outfitters	..	..	..	..	3	1	..	..
Ironmongers	..	..	..	..	3	3	..	..
Chemists	..	..	..	..	5	5	..	..
Jewellers	..	..	..	..	2	1	..	..
Totals ..					2,276	393	391	391

MIDWIVES ACT, 1902.—This Act came into operation on the 1st April, 1903, when the Council of the City of Cardiff was constituted the Local Supervising Authority within the City. Section 8 of the Act provides that "The Local Supervising Authority may delegate, with or without any restrictions or conditions as they may think fit, any powers or duties conferred or imposed upon them by or in pursuance of this Act, to a Committee appointed by them, and consisting either wholly or partly of members of the Council, and the provisions of Sub-sections (1) and (2) of Section 82 of the Local Government Act, 1888, shall apply to every Committee appointed under this Section and to every Council appointing the same, and women shall be eligible to serve on any such Committees."

Under the powers of this Section, the Local Supervising Authority delegated to the Health and Port Sanitary Committee all the powers and duties conferred or imposed upon them, and appointed the Medical Officer of Health Executive Officer, in accordance with the suggestion contained in the Memorandum of the Central Midwives Board.

The object of the Act is to secure better nursing and the better supervision of midwives, by the establishment of a system of certification and enrolment of women qualified to act in that capacity. The Act provides that from and after the 1st April, 1905, no woman may call herself a midwife unless she is certified under the Act, and that after the 1st April, 1910, no woman shall habitually, and for gain, attend women in child-birth, otherwise than under the direction of a qualified medical practitioner, unless she is so certified. It provides also for the certification of existing midwives who have been in practice for at least one year prior to the 31st July, 1902, provided they apply for certification not later than the 1st April, 1905. After that date, certification can only be obtained after a course of study, and by passing an examination in accordance with the Rules of the Central Midwives Board. The course of training before admission to the Board's examination requires attendance at not fewer than twenty labours, and the nursing of twenty lying-in women, and the attendance of a sufficient course of theoretical instruction extending over a period of not less than three months.

The authorities of the University College of South Wales and Monmouthshire, in Cardiff, have established a course of training, in accordance with the Regulations of the Central Midwives Board, for those women who intend to present themselves for the Board's examination. Dr. E. J. Maclean, the Lecturer on Midwifery at the College, who gives the instruction, informs me that during the year 1906, 88 pupil midwives attended the course; of these, 38 were resident in the City of Cardiff. The Local Supervising Authorities of Cardiff, and of the administrative County of Glamorgan, contribute towards the expenses of this course, and have the privilege of nominating a certain number of women each term for free studentships in midwifery. The Committee of the Queen's Nursing Institute have also established a Maternity Department, and are taking pupils for the practical training of midwives. Both the theoretical training at the College, and the practical course in connection with the Nursing Institute, have been recognised by the Central Midwives Board as qualifying for admission to their examination.

The first duty which devolved upon the Authority was to give notice to the effect of the Act, so far as practicable, to persons at present using the title of midwife. This was done by advertisement in the local newspapers, by large printed notices, and by small handbills left at the residence of the midwife.

The Midwives Act confers upon the Local Supervising Authority extensive and responsible duties in connection with the supervision of all midwives certified under the Act, and practising within the area of their jurisdiction. These duties are as follows:—

- (1) To exercise general supervision over all midwives practising within their area, in accordance with the rules laid down under the Act.
- (2) To investigate charges of mal-practice, negligence, or misconduct on the part of any midwife practising within their area, and, should a *prima facie* case be established, to report the same to the Central Midwives Board.

- (3) To suspend any midwife from practice, in accordance with the rules under the Act, if such suspension appears necessary in order to prevent the spread of infection.
- (4) To report at once to the Central Midwives Board the name of any midwife practising in the area convicted of an offence.
- (5) During the month of January of each year to supply the Secretary of the Central Midwives Board with the names and addresses of all midwives who during the preceding year have notified their intention to practise within their area, and to keep a current copy of the roll of midwives, accessible at all reasonable times for public inspection.
- (6) To report at once to the Central Midwives Board the death of any midwife or any change in the name or address of any midwife in their area, so that the necessary alteration may be made in the roll.

In addition to the above powers and duties of the Local Supervising Authority, they are authorised to prosecute any offences under the Act punishable on summary conviction.

Miss Hoyle, the Woman Inspector, who has obtained the certificate after examination by the examiners appointed by the Central Midwives Board, visits the residences of the certified midwives in the district and supervises their practice, in accordance with the rules of the Board. During the year 536 visits have been paid by her. The following table will show the extent to which the midwives in the district have complied with the regulations of the Board as regards appliances, &c. :—

Certified Midwives.	Case Book.	Record Book.	Washable Dresses.	Bag.	Appliances.
85	85	85	85	85	85
8	8	8	—	8	8
8	8	8	—	—	—
5	5	5	5	—	—
4	4	—	4	—	—
4	—	—	—	—	—
3	—	—	3	3	3
117					

NUMBER OF CERTIFIED MIDWIVES, WITH THEIR QUALIFICATIONS :—

<i>Bona-fide</i>	..	..	..	..	..	95
Obstetrical Society of London	..	..	..	..	..	12
Rotunda Hospital	..	..	..	..	..	1
Examination of Central Midwives Board	..	..	..	..	..	9
Total	..	..	..	..	..	117

SEAMEN'S LODGING HOUSES.

Total number on register	..	..	..	..	..	..	123
Registered rooms	..	..	..	..	..	..	275
Number of persons certified to accommodate	..	..	..	..	..	..	1,355

INSPECTION OF SEAMEN'S LODGING HOUSES DURING 1906.

Day inspections	..	..	..	..	..	..	2,025
Night inspections	..	..	..	..	..	..	154

NATURE OF SANITARY DEFECTS FOUND, AND OF IMPROVEMENTS EFFECTED :—

W.c.'s. supplied with water	18
Defective water closets and drains	86
Defective paving in yards	48
Defective bedroom ventilation	43
Houses with walls and roofs out of repair	52
Houses limewashed	277
Accumulations of refuse	31
Additional w.c.'s provided	4
Soil pipes ventilated	11
Infectious disease discovered	2
Legal proceedings taken	1

COMMON LODGING HOUSES.

Total number on register	33
Registered rooms	160
Number of persons certified to accommodate.. .. .	811

INSPECTION OF COMMON LODGING HOUSES DURING 1906.

Day inspections	2,766
Night inspections	73

NATURE OF SANITARY DEFECTS FOUND, AND OF IMPROVEMENTS EFFECTED :—

W.c.'s cleansed and repaired.. .. .	18
Special ventilation provided to rooms	49
Lime-washed	90
Repaired	40
Accumulations removed	28
Yards paved	38
Infectious disease discovered	2

INSPECTION OF SCHOOLS.—There are thirty-seven Public Elementary Schools within the City of Cardiff. Of these, 19 are Council Schools and 18 Non-provided Schools, providing a total accommodation for 34,443 scholars, distributed as follows :—25,399 in the Council Schools and 9,044 in the Non-provided Schools.

In the year 1903, acting upon the instructions of the Education Committee, I made an inspection of the Non-provided Schools within the district of the Authority and reported upon their sanitary condition.

Some of these schools are comparatively old, and although recognised by the Board of Education as Public Elementary Schools, their sanitary state differed widely from the Board's requirements in the case of the new schools of the present day, as set forth in their most recent Building Rules. It became evident, therefore, as the inspection proceeded, that no alterations short of reconstruction would bring these old schools up to the standard of modern ideas of sanitation. In many cases, all that could be hoped for was an improvement in the existing structural arrangements. My attention was directed chiefly to the following points : (1) The drainage, water closet and urinal accommodation (2) Water supply. (3) Heating, Lighting, and Ventilation. (4) General Cleanliness. The following is a summary of the report :—

(1) ST. MARY'S NATIONAL (MISSION) SCHOOL, North Church Street, consists of two departments, with accommodation for 146 in the mixed and for 146 in the infants' departments. The drainage and water closets appear to be in good order, but the number of closets is insufficient. One urinal has defective flushing arrangements.

(2) TREDEGARVILLE NATIONAL SCHOOL has three departments—boys, girls, and infants—with accommodation for 211, 201, and 222 respectively. These schools are not well lighted or ventilated, and the heating arrangements are unsatisfactory. In some of the class rooms, iron stoves with pipes through wall being used. The trough closets are not well constructed or managed, and the urinals are without proper water supply. The drains are not efficiently disconnected from the main sewer, and are in some places defective, as shown by smoke test. The water closet accommodation for girls and infants is insufficient.

(3) ST. PETER'S R.C. SCHOOL consists of three departments—boys, girls and infants—with accommodation for 225, 225, and 259 scholars respectively. The old class rooms are imperfectly heated with iron stoves through walls and gas stoves without flues. The new schoolrooms are in every way satisfactory. The drainage of the whole school, which has recently been re-constructed, is satisfactory and is properly disconnected from main sewer and is ventilated.

(4) ST. ANDREW'S NATIONAL SCHOOL consists of two departments—mixed and infants—the former has accommodation for 179 and the latter for 181. The drainage and water closet accommodation is defective. Some of the closets are without any water supply, the others are in a dirty and neglected condition. The drains are not properly disconnected from main sewer. Urinals without water supply and of defective construction, and the lavatories are in a bad condition. The ventilation and heating of the class rooms are defective.

(5) ST. MONICA'S NATIONAL SCHOOL contains a mixed and an infants' department; the former has accommodation for 198 and the latter for 155 scholars. The ventilation and lighting of the school and class rooms is fairly good, and the heating by hot water pipes satisfactory. The construction of the drains seems good, and the disconnection from main sewer properly carried out. A slight defect near one of the water closets was detected by smoke test. The urinals were without proper water supply.

(6) CROFTS STREET NATIONAL SCHOOL (INFANTS) has accommodation for 236 scholars. The school and class rooms are well lighted and ventilated and the heating arrangements seem satisfactory. The drainage is in good order and the drains are disconnected from main sewer. One rain water pipe discharges directly into drain.

(7) ST. ALBAN'S R.C. SCHOOL contains a mixed and an infants' department, with accommodation for 245 in the former and 280 in the latter. The school and class rooms are imperfectly ventilated and heated, and a badly lighted and ventilated cloak room is used as a class room. The trough closets are in a bad condition and the urinals have defective water supply. The drains are not properly disconnected from sewer, and were found defective in several places by smoke test.

(8) METAL STREET NATIONAL SCHOOL. Boys' department with accommodation for 236 scholars, girls 236, and infants 257. The infants' class room is imperfectly lighted and ventilated, the windows being narrow and with insufficient openings. Building formerly used as a church. The girls class room is imperfectly heated, a small gas stove without flue is used. The boys' class room on upper floor is badly ventilated and heated, a small gas stove without flue is used. The staircase is badly lighted and ventilated. The water closet accommodation for girls and infants is insufficient. The drains are not properly disconnected from sewer, and several rain water pipes discharge directly into drain. The urinals are provided with defective flushing apparatus.

(9) ST. MARY'S NATIONAL SCHOOL, Mount Stuart Square, consists of two departments—mixed and an infants' department. The former has accommodation for 240 and the latter for 125 scholars. The lighting, heating, and ventilation of all the class rooms in these schools are defective. The water closet accommodation is bad and insufficient. The drainage is not properly ventilated and disconnected from main sewer. The playground is totally insufficient in size.

(10) GRANGETOWN NATIONAL SCHOOL consists of a mixed and an infants' department. The former has accommodation for 215, the latter for 99 scholars. The heating and ventilation of the class rooms are defective. Iron stoves are used without air inlets. The urinals are not supplied with water. A sink in cloak room discharges within the building

(11) **ST. CUTHBERT'S R.C. SCHOOL** consists of a mixed and an infants' department, with a total accommodation for 150 scholars. The water closets and drainage are in good condition. The urinals are without water supply. The heating arrangements are defective, iron stoves being used.

(12) **ST. PATRICK'S R.C. SCHOOL**, Saltmead, consists of two departments—mixed and infants. The former with accommodation for 347, and the latter with accommodation for 220 scholars. The connection of one section of the drainage with the main sewer is not properly carried out. One of the urinals is without water supply. The heating is defective, iron stoves without proper air inlets and with improper flues being used.

(13) **ST. PAUL'S R.C. SCHOOL**, Tyndall Street, consists of a mixed and infants' department. The former having accommodation for 253, and the latter for 252 scholars. The heating and ventilation of the school and class rooms are defective. The drains are not properly disconnected from sewer, and were found defective by smoke test.

(14) **ST. DYFRIG'S NATIONAL SCHOOL** consists of one mixed department, with accommodation for 173 scholars. The water closet accommodation is insufficient and defective. The urinals are without proper water supply, and the drains are not efficiently disconnected from main sewer by ventilation or trapping. A rain water pipe discharges directly into drain.

(15) **ST. MARY'S NATIONAL SCHOOL**, Bute Terrace, contains three departments—boys, girls and infants—with accommodation for 262, 179, and 153 scholars respectively. The water closets in all three departments are insufficient, defective in construction and badly situated. The drainage is defective in every respect, and the ventilation of the class rooms is imperfect.

(16) **ST. DAVID'S R.C. SCHOOLS**. There are three departments in this School—boys, with accommodation for 314, girls 378, and infants 230. The old school and class rooms used for boys are badly heated with iron stoves with pipes through walls, and the lighting and ventilation is imperfect. The ventilation, lighting, and general sanitary condition of the new school and class rooms are excellent and the appliances are of the best. This part of the school is used for girls and infants, and is in by far the best sanitary condition of any voluntary school in Cardiff.

(17) **ST. JOHN'S NATIONAL SCHOOL**, Queen Street. This school has three departments, with the following accommodation for scholars: Boys 328, girls 170, infants 206. The water closet accommodation is insufficient in all three departments and is in a bad condition. The heating, lighting, and ventilation of class rooms are defective.

(18) **CANTON NATIONAL SCHOOL** consists of two departments—girls, with accommodation for 284 scholars, and infants with accommodation for 170. The playground of this school, being undrained and made of improper material, is in wet weather unfit for use. The water closet accommodation in girls' department is insufficient, and the urinals are without water supply. The drains are not properly disconnected from the main sewer. The arrangements for opening windows provides in the summer sufficient ventilation. Permanent openings should be made more efficient. The heating arrangements in some of the class rooms are defective, unsuitable iron stoves being used.

(19) **ST. MARY'S R.C. SCHOOL**, Canton, contains mixed and an infants' department, the former with accommodation for 282, and the latter for 161 scholars. The drains of the school premises are not properly disconnected from main sewer, and some of the rain water pipes discharge directly into drain. The ventilating and heating arrangements are not efficient, and in some of the class rooms the lighting is bad.

After many delays, most of the requirements were carried out, and generally the Managers of these Schools showed themselves desirous of complying with the improvements required by the Education Authority.

At the present time, a systematic inspection of all the Public Elementary Schools in the City takes place, in accordance with the following resolution of the Education Authority, dated 9th October, 1905: "That the Medical Officer of Health be requested to supervise the sanitary condition of the Council and Non-provided Schools in the Borough, and to make a weekly systematic inspection of them, and to report upon their condition at each monthly meeting of the Building and Sites Committee."

Reports upon the sanitary condition of several schools are therefore presented at each meeting of this Committee. These reports form a continuous record of the condition of and the improvements effected in the several schools.

No schools were closed on account of the prevalence of infectious disease during the year 1906, but a considerable number of scholars were excluded who were suffering from such diseases, and many children, although not suffering themselves, were excluded from infected houses.

The number of notices for exclusion from Public Elementary Schools amounted to 1,482, as follows:—

Name of School.	Number of Notices.
Severn Road Council School	107
Lansdowne Road Council School	95
Albany Road Council School	92
Sploott Road Council School.. .. .	91
Adamsdown Council School.. .. .	86
Court Road Council School.. .. .	86
Radnor Road Council School	81
Marlborough Road Council School	71
Grangetown Council School.. .. .	67
Virgil Street Council School	66
Crwys Road Council School.. .. .	56
Stacey Road Council School.. .. .	54
St. German's National School	47
Roath Park Council School.. .. .	41
St. Patrick's Roman Catholic School.. .. .	38
Moorland Road Council School	35
Gladstone Council School	31
St. John's National School (Canton).. .. .	31
Municipal Secondary School	29
St. John's National School (Queen Street)	28
St. David's Roman Catholic School	26
St. Peter's Roman Catholic School	25
St. Monica's National School	25
St. Andrew's National School	22
Crofts Street National School	22
Wood Street Council School	18
Grangetown National School	18
St. Alban's Roman Catholic School	14
St. James' National School.. .. .	13
Intermediate School for Boys	10
Eleanor Street Council School	8
Intermediate School for Girls	8
St. Mary's Roman Catholic School	7
St. Cuthbert's Roman Catholic School	5
Ely Council School	5
Llandaff National School	5
St. Paul's Roman Catholic School	4
St. Mary's National School (North Church Street)	4
South Church Street Council School.. .. .	3
St. Mary's National School (Bute Terrace)	3
Allen's Bank Council School	2
Maindy Council School	2
School for Deaf and Dumb.. .. .	1
Total	1,482

The Inter-Departmental Committee on Physical Deterioration recommended a systematic medical inspection of school children, to be undertaken on behalf of the Education Authority.

For some years past, this inspection has been carried out in certain large towns. In London, Glasgow, Manchester, Liverpool, Bradford, and other places, much good work has already been done in this direction. Doubtless, most of the large towns will soon take advantage of the administrative facilities offered by the provisions of the Education Act of 1902, to organise some system of medical inspection of scholars. The clause in the Education Bill of 1906, providing for the medical inspection of children in Elementary Schools was lost with the rest of the Bill. This clause by itself, as a private member's Bill, awaits its third reading, and it is understood that the Government has already introduced a Bill which contains a similar clause.

In most places this work is carried on under the direct supervision of the Medical Officer of Health, acting as the Medical Officer to the Education Authority, to whom a qualified Medical Assistant is given, and in the recent memorandum issued by the Medical Officer of the Local Government Board, relating to the annual reports of Medical Officers of Health, information is specifically required as to the "action taken in relation to the health of scholars," and as to the "sanitary condition of elementary schools."

The sanitary and medical supervision of schools and scholars would generally comprise the following points :—(1) The provision of instruction of school teachers in the laws of health and in school hygiene. (2) The better attention to the details of sanitation in the construction of new schools, especially with respect to the ventilation, warming, and drainage of the school buildings. (3) The maintenance of the existing schools in a good sanitary condition. (4) The systematic medical inspection of schools, with a view to the promotion of the health and physical development of the scholars, and to the prevention of the spread of infectious and other diseases in schools, and to securing special attention to those scholars showing signs of mental and physical weakness or abnormality.

The routine and systematic medical inspection would be generally directed to the following objects :—

- (a) To ascertain and certify as to the cause of absence from school on account of illness of pupils or teachers.
- (b) To confer with the head teachers at the schools on the general state of health of the teachers and scholars, and particularly as to the condition of children considered to be physically or mentally weak, and to report to the Local Education Authority the result of such conference.
- (c) To take the necessary steps for excluding from school attendance children suffering from any communicable disease.
- (d) To keep under observation all children known to have recently been in contact with persons suffering from infectious disease, and to take the necessary measures in such cases.

The important bearing of the medical inspection of school children upon the physical welfare of the nation is sufficiently obvious, and in this connection it may be well to quote the words recently spoken by Sir Lauder Brunton at a meeting at the Mansion House, London, with the object of promoting the interests of the second International Congress on School Hygiene, to be held in London, in August, 1907. Alluding to the Bill before Parliament, relating to the medical inspection of school children, Sir Lauder Brunton remarks that "it is most fervently hoped that the Bill will soon become law, for medical inspection is the ground work upon which the superstructure of school hygiene must be built. Without it no proper system of physical education is possible, unless we are to run the risk of permanently damaging the hearts of weak children, by exercises which are perfectly proper and wholesome for the strong. Without it we can have no system of properly feeding children who are starving, because starvation does not merely mean want of food. It may mean want of power to utilize it; and children

may be starving in the middle of plenty because their digestive powers are inadequate. It is upon medical inspection that we must depend for assigning to their proper classes the children who are defective in mind or body, for detecting deficient eyesight or decayed teeth, or defective hearing, the first signs of phthisis, or the symptoms which indicate infective disease, and in this connection it may be pointed out that by this means the earlier cases in a possible outbreak of infective disease may be picked out and isolated, and the necessity for school closure avoided. But in all these cases the medical inspector will require help from the teachers, who must receive instructions in hygiene. Nor is it only the teachers who should be instructed in the laws of health; the children also must be taught, not only for their own sakes, but for the sake of the generation that is to come, for the boys and girls of to-day are the fathers and mothers of fifteen or twenty years hence. But the health of the teacher needs to be cared for also, and this forms an important section. For both teachers and taught it is necessary that schools should be thoroughly hygienic, well-ventilated, and well-lighted, that the eyes shall not be strained by the type in the books that they have to read, that they shall not be chilled by draughts or choked by stuffy rooms. . . . We are awakening to the fact that one of our most important assets is our population, and that it will not pay us in the end to allow this asset to deteriorate. To prevent such deterioration, we must have medical inspection, we must have feeding of children where it is necessary, and we must have also physical training."

From the foregoing remarks it will be seen that it is practically impossible to draw any distinct line where the ordinary public health administrative work ends, and the general medical inspection of school children begins, and the concentration of these allied departments under one head would tend to simplification, economy, and efficiency. Without attempting to lay down any hard and fast lines, or to formulate a definite scheme of organization, it may be well to mention that in some districts, the appointment of a woman health visitor, or school nurse, acting under the direction of the Medical Officer has been found to work well. The services of such a woman, well-trained in her work, and having tact and discretion, could with the co-operation of the teachers be utilized in the first instance in bringing to the notice of the Medical Officer any signs of ill-health or physical inefficiency in the scholars, and in dealing with various conditions, such as scabies, pediculosis, and ringworm, the result of dirt and neglect.

From the experience which I have already obtained in visiting the various elementary schools under the Education Authority, I have every reason to anticipate the cordial co-operation of the teachers in all matters pertaining to the health and physical welfare of the scholars under their control.

A special report upon the medical inspection of school children was submitted to the Education Authority during the year, as follows :—

The following extract from the minutes of your Committee, dated February 1st, 1906, has been forwarded to me :—

Resolved : "That the question of children attending school from houses where there are cases of whooping cough, chicken pox, mumps, &c., be referred to the Medical Officer of Health for him to report thereon."

In accordance with the terms of the above resolution, I beg to report as follows :—

It would, I think, be in accordance with the spirit of the resolution, if not with the exact terms, if I were to include in the report all communicable diseases not notified to the Medical Officer of Health under the provisions of the Infectious Disease Notification Act, in which exclusion from school of apparently healthy children residing in houses, in which cases of such diseases exist, or have recently occurred, is at times desirable, with a view of checking the spread of infection. This list includes the following :—Measles, chicken pox, whooping cough, mumps, the disease commonly known as German measles, and such chronic and contagious diseases as ringworm, itch, lice on body or head, and ophthalmia.

Up to the present time there has been considerable difficulty in obtaining exact information of the nature of the disease causing absence from school, unless it came under the operation of the Notification Act. The school attendance officers or teachers received some sort of information from the parents or relatives of the scholar, which may or may not be correct. To overcome

this initial difficulty in dealing with these cases, I would advise the following plan to be carried out under your direction :

(1) That school teachers be instructed to report immediately to the Medical Officer, the name and address of any child absent from school, and supposed to be suffering from any disease not notified to the Medical Officer of Health.

(2) That the school attendance officers forward to the Medical Officer a copy of the weekly return of absentees from school ; the list to contain information as to the supposed cause of absence.

(3) That a certificate be obtained, either from the medical attendant, if any, or from your Medical Officer, of the nature of the disease.

(4) That your Medical Officer decide in each case whether it is necessary to exclude children from school, who are apparently well, and who reside in houses in which any of the above mentioned diseases exist.

It was formerly the custom to advise the exclusion from school of all children residing in infected houses, but recently, and perhaps more particularly in consequence of evidence submitted to the Inter-Departmental Committee on Medical Inspection of School Children, some modification of this measure has been adopted in many places with respect to diseases marked (b) in the appended instructions to teachers, and the exclusion has been required only in the case of children attending the infants departments, and in the case of children in departments for older scholars who have not previously suffered from the diseases in question, all other children being allowed to attend school as usual. This plan, which I would advise your Committee to adopt, is attended with less interruption to the education of the older children, and is found to be as efficient as that formerly adopted, as epidemics of the above mentioned diseases are almost entirely confined to the children in the infant classes.

I have drawn up the appended instructions, which, subject to your approval, I would recommend be distributed to the head teachers of all the schools under your control, from which they will be able to judge of the necessary period of exclusion in each case. It has been found in practice that a considerable number of children absent from school on account of illness, or supposed illness, have not been attended medically. This refers particularly to cases of ringworm and to verminous conditions of the head, and in a lesser degree to children suffering from measles, whooping cough, and from mild forms of other infectious diseases. In such cases, unnecessarily prolonged absence from school results, and some other steps might, I think, be taken by your Medical Officer, with a view of improving the attendance at school, by advising prompt medical treatment in such cases, and by warning the parents of the consequences of neglecting the health and the education of their children. Parents who obstinately refuse to have their children treated for these disorders might, I presume, be dealt with by the school attendance officers.

The above methods would entail a certain amount of visitation to those children notified by the teachers or attendance officers to be absent from school, and to those found to be physically unfit for school on medical inspection at the school. The plan that has been adopted with advantage in many large towns, is for the Education Authority to engage the services of a qualified woman health visitor, or nurse, to act under the instructions of the Medical Officer. Sometimes this has been effected by engaging the partial services of one of the nurses of the Queen's Jubilee Nursing Institute ; at other times the nurse or visitor has been engaged entirely by the Education Authority. Her duties, in either case, would be somewhat as follows :—On receiving a list of absentees from the Medical Officer, she would visit the scholar's residence, and ascertain the cause of absence. If, on visiting the residence, she finds that no medical man is in attendance, she would urge the parents to obtain medical attendance, or, failing this, would offer assistance, under the direction of your Medical Officer. She would, when necessary, give instructions in cleanliness and personal hygiene.

The question of the attendance at school of very young children is closely associated with that of the spread of infectious disease, as it is amongst infants that these diseases are most prevalent and fatal. It is for your consideration, whether it is worth while admitting children under the age of five years into school. There seems to be a general consensus of opinion amongst educational experts that there is little or no advantage from an educational point of view. From a health point of view there are disadvantages. The Board of Education has now recognised the importance of this question, and has given Local Education Authorities power (under Article 53 of the Code of 1905) to refuse the admission of children under five years of age, and in the Prefatory Memorandum to that Code the following remarks occur :—"Children under five years of age are not required by law to attend school, and there is reason for believing that the attendance of such children is often accompanied by danger to health. There is also a mass of evidence pointing to the conclusion that a child who does not attend school before six years of age or more will, in general, compare favourably, at a later age, with a child whose attendance began at an earlier age. On the other hand, there is no doubt that parents in certain areas desire that their children should attend school as soon after the age of three as possible, or even before that age. The extent to which parents in any locality desire that very young children should attend school, and the weight which should be attached to the wishes of the parents in this matter, are no doubt sufficiently well-known to the Local Education Authority to enable them to deal on their own responsibility with the question

of admitting or excluding children under five years of age. In these circumstances, the Board will now give the Local Education Authority complete discretion on this point, and it will be held under Article 53 that a direction of the Local Education Authority to the effect that children under five shall be refused admission to any particular school or schools is a reasonable ground for excluding such children from the school or schools concerned. If the Local Education Authority so wish, different parts of their area may be treated differently in this respect."

The exclusion of these young children might also in some cases, by providing further accommodation, be the means of relieving the overcrowding which sometimes occurs in the class rooms of the older children. In the very poorest districts of the town it is, however, probable that very young children are under more favourable conditions in school than at home, but this does not apply generally to the majority of infants attending the elementary schools.

There are, of course, other matters which might with advantage be comprised within a complete system of medical inspection of schools, such as those which relate to defective vision, insufficient clothing and food, defective teeth, unhealthy conditions of the throat and air passages, enlarged glands, tuberculosis, defective mental capacity, deafness, &c., but I do not understand from the resolution referred to, that your Committee desires that I should touch upon these points in the present report.

CARDIFF EDUCATION AUTHORITY.

INSTRUCTIONS TO TEACHERS AND PARENTS FOR DEALING WITH INFECTIOUS DISEASES.

Period of Exclusion from School of Children suffering from any of the following Diseases.		Period of Exclusion from School of Children who are not ill, but who reside in Infected Houses.
SCARLET FEVER OR SCARLATINA	At least six weeks, and until there is no discharge from the throat, nose, or ears, and no peeling of the skin. A certificate will be given by the Medical Officer of Health after the disinfection of infected premises.	Eight days from last exposure to infection when case is removed to Isolation Hospital. In other cases until Medical Officer of Health gives certificate of disinfection.
DIPHTHERIA ..	Until throat is reported healthy. Bacteriological examination desirable. A certificate of disinfection will be given by the Medical Officer of Health.	Eight days from last exposure to infection when case is removed to Isolation Hospital. In other cases until Medical Officer of Health gives certificate of disinfection.
SMALL POX ..	Until scabs have gone and skin is healthy. A certificate of disinfection will be given by Medical Officer of Health.	Eighteen days from last exposure to infection, and until Medical Officer of Health gives certificate of disinfection.
ENTERIC or TYPHOID FEVER	Until certificate of disinfection is given by Medical Officer of Health.	Until Medical Officer of Health gives certificate of disinfection.
MEASLES, or GERMAN MEASLES	Three weeks from appearance of rash.	Sixteen days from last exposure to infection.
CHICKEN POX ..	Until scabs have gone and skin is healthy.	Eighteen days from last exposure to infection.
WHOOPING COUGH	Until cough is completely gone—at least five weeks	Twenty-one days from last exposure to infection.
MUMPS ..	At least three weeks.	Twenty-one days from last exposure to infection.

These diseases are notified to the Medical Officer of Health. All children from houses in which there is any such disease must be excluded from school.

These diseases are not notified to the Medical Officer of Health. Children must not attend an infants' school from a house where there is a case of any such disease, but children in departments for older scholars, who have previously suffered from the disease in question, need not be excluded under similar circumstances.

PERIOD OF EXCLUSION FROM SCHOOL OF CHILDREN SUFFERING FROM ANY OF THE
FOLLOWING DISEASES.

RINGWORM.—Until no broken off or diseased hairs can be seen, and until a microscopical examination reveals no evidence of the presence of ringworm fungus.

ITCH (Scabies).—Until all pimples or itching have disappeared.

LICE IN HEAD (Pediculosis Capitis).—Until all vermin have been removed.

OPHTHALMIA.—Until the eyes have been free from discharge for at least a month.

CARDIFF AND COUNTY PUBLIC HEALTH LABORATORY.

The Laboratory forms part of the buildings of the University College, Cardiff, and is used for teaching purposes in connection with the Public Health and Bacteriological Departments of the College. It is maintained jointly by the Glamorgan County Council and the Corporation of the City of Cardiff, and the Medical Officers of Health of these Authorities act as Directors of the Laboratory having the use of it for any bacteriological or chemical investigation connected with their administrative work. The Laboratory is under the immediate supervision of the Bacteriologist, H. A. Schölberg, M.B. (Lond.), D.P.H. (Camb.), and J. H. Sugden, M.Sc. (Vict.), F.I.C., acts as Chemist and Assistant Bacteriologist.

The following tables show the work which has been carried on in the Laboratory during the year 1906.

SPECIMENS AND SAMPLES EXAMINED.

BACTERIOLOGICAL EXAMINATIONS:—

Suspected Diphtheria	477
Suspected Typhoid Fever (Serum Diagnosis)	297
Sputum for Tubercle Bacilli	274
" " " (Notified Cases)	67
Milk Examinations (Bacteriological)	45
" " for Tubercle Bacilli	4
Examinations of Pus	32
" " Diseased Meat	29
Anthrax Diagnosis (Animals)	19
" " (Human)	1
Ankylostomiasis	1
Other Examinations	29
	1,275

CHEMICAL AND PATHOLOGICAL EXAMINATIONS:—

Urinalyses	108
Morbid Growths	22
Milk Examinations (Chemical)	34
Examinations of School Air	47
Other Examinations	16
	227

DRINKING WATER:—

(a) Bacteriological Examinations	239
(b) Chemical—General Examination	145
(c) " —for plumbo-solvent action	44

SEWAGE AND SEWAGE EFFLUENTS:—

(a) Bacteriological Examinations	58
(b) Chemical Examinations	76

TRADE EFFLUENTS:—

Chemical Examinations	101
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663

Total 2,165

COMPARISON OF THE RECORDS OF 1905 AND 1906 :—

Nature of Examination.	1905.	1906.	Increase.	Decrease.
Suspected Diphtheria	291	477	186	—
Suspected Typhoid Fever	169	297	128	—
Sputum of Tubercle Bacilli	369	341	—	28
Waters—Bacteriological	280	239	—	41
„ —Chemical.	209	189	—	20
Diseased Meat	20	29	9	—
Anthrax	9	20	11	—
Milk Examinations	130	83	—	47
Sewages and Effluents	222	235	13	—
Other Examinations	331	255	—	76
Totals	2,030	2,165	347	212
			Increase .. 135	

The figures show an increase of 135 for the year 1906. This is due to the increase in the number of suspected Diphtheria and Typhoid fever cases sent for examination.

MORTUARY.—The new public mortuary recently constructed by the Cardiff Corporation has been freely used during the year. A post-mortem room with all the most modern and suitable appliances has also been provided in connection therewith. The caretaker is provided with a residence in the immediate neighbourhood. The following return applies to the year 1906 :—

Number of bodies removed to Mortuary	67	{ 53 males. 14 females.
Number of Inquests held by Coroner	65	
Number of Post-Mortem Examinations	26	

VITAL STATISTICS, POPULATION, &c.—The population of the City, according to the Census enumeration of April, 1901, amounted to 164,333 persons, being an increase of 27.5 per cent. since the Census of 1891; the rate of increase being considerably less than that of the preceding inter-censal period, which slightly exceeded 55 per cent. The population of the City, estimated in accordance with the method adopted by the Registrar General, to the middle of the year 1906, was 183,823, and the birth and mortality rates contained in this Report have been calculated on the basis of this estimate. This method of estimating the population of towns at the middle of each year since the last preceding Census is based on the assumption that the same rate of annual increase has continued as during the decennial period ending at the time of that Census. The estimates of population obtained by this method are, of course, only approximately true, and they generally exhibit considerable divergence from the actual truth in the years most remote from the Census. It is probable, however, that the annual estimates of populations in Cardiff since 1901, will be much more accurate than those immediately preceding that year, as they are calculated on the more moderate rate of increase of 27.5 per cent.

In order to check, to some extent, the accuracy of the official estimate of the population, a local enumeration is made annually, in June, of inhabited houses in the district. This number is multiplied by 5.8, the average number of inmates per house, as given in the last Census. The estimated population, based on this method, is given in Table I.

The following Table gives the population of Cardiff, at various ages, estimated to the middle of 1906, in accordance with the method adopted by the Registrar-General.

TABLE V.

AGES.	PERSONS.	MALES.	FEMALES.
All ages	183,823	91,283	92,540
Under 5 years	23,164	11,418	11,746
5 and under 10 years ..	21,181	10,598	10,583
10 .. 15	19,031	9,489	9,542
15 .. 20	18,149	8,776	9,373
20 .. 25	18,192	8,549	9,643
25 .. 30	16,823	8,289	8,534
30 .. 35	14,665	7,413	7,252
35 .. 40	13,074	6,683	6,391
40 .. 45	10,677	5,633	5,044
45 .. 50	8,240	4,325	3,915
50 .. 55	6,655	3,412	3,243
55 .. 60	4,850	2,458	2,392
60 .. 65	3,697	1,809	1,888
65 .. 70	2,489	1,130	1,359
70 .. 75	1,602	736	866
75 .. 80	845	367	478
80 years and upwards ..	489	198	291

The following is a summary of the vital statistics for the year 1906 :—

Estimated population	..	..	..	..	183,823
Number of births	..	..	..	..	5,001
Number of deaths	..	..	..	..	2,618
Birth-rate per 1,000 persons living	..	..	..	..	27.2
Death-rate per 1,000 persons living	..	..	..	..	14.2
Number of deaths under one year per 1,000 births	..	..	..	..	134
Death-rate from principal zymotic diseases	..	..	..	..	1.34
				Number of Deaths	Death-rate per 1,000
Measles	..	..	..	2	0.01
Scarlet Fever	..	..	..	3	0.01
Diphtheria	..	..	..	13	0.07
Enteric Fever	..	..	..	13	0.07
Diarrhoea	..	..	..	151	0.82
Whooping Cough	..	..	..	66	0.35
Respiratory Diseases	..	..	..	437	2.37
Phthisis	..	..	..	222	1.20
Other Tubercular Diseases	..	..	..	95	0.51

Analysis of mortality in England and Wales as compared with that of Cardiff during the year 1906 :—

TABLE VI.

	Annual rate per 1,000 living.										Deaths under one year to 1,000 births
	Births.	Deaths.	Principal Epidemic Diseases.	Small-Pox.	Measles.	Scarlet Fever.	Diphtheria.	Whooping Cough.	Fever.	Diarrhoea.	
England and Wales ..	27.0	15.4	1.73	0.00	0.27	0.10	0.17	0.23	0.09	0.87	133
76 Great Towns ..	27.9	15.9	2.24	0.00	0.40	0.12	0.19	0.28	0.09	1.16	145
142 Smaller Towns ..	26.5	14.5	1.71	..	0.22	0.09	0.17	0.20	0.09	0.94	138
England and Wales, less the 218 Towns ..	26.3	15.1	1.18	0.00	0.14	0.08	0.16	0.19	0.09	0.52	116
CARDIFF ..	27.2	14.2	1.34	..	0.01	0.01	0.07	0.35	0.07	0.82	134

MARRIAGES.—The total number of marriages registered during the year 1906, was 1,769, corresponding to a rate of 19.2 persons married per 1,000 living.

The return of the number of marriages in the City of Cardiff during the years 1897—1906, together with the rate of persons married per 1,000 of the population, is given below :—

TABLE VII.

YEAR.	NUMBER OF MARRIAGES.	RATE PER 1,000 PERSONS LIVING.
1897	1,687	22.4
1898	1,525	19.8
1899	1,719	21.8
1900	1,706	21.1
1901	1,641	19.8
1902	1,677	19.8
1903	1,668	19.3
1904	1,563	17.7
1905	1,650	18.8
1906	1,769	19.2

BIRTHS.—During the year 1906 the births registered in the City were 5,001 ; of these, 2,552 were males, and 2,449 females. The number of births corresponded to an annual birth-rate of 27.2 per 1,000 persons living, as compared with 27.0, the birth-rate in England and Wales, and with 27.9, the rate in the 76 large towns, for the same period.

The average annual birth-rate in Cardiff during the ten years 1896—1905 was 32.4 per 1,000 persons living.

The following table indicates the gradual and progressive decline which has taken place in the birth-rate in Cardiff since 1891.

The birth-rate, which averaged 41 per 1,000 during the ten years ending 1890, commenced to decline soon after that year, as follows :—

YEAR.	BIRTH-RATE.
1891	36.5 per 1,000
1892	35.3
1893	36.0
1894	34.4
1895	34.1
1896	34.3
1897	31.1
1898	31.1
1899	28.6
1900	35.2
1901	31.4
1902	31.2
1903	30.5
1904	29.5
1905	28.5
1906	27.2

Throughout the country the birth-rate has of late years declined in a marked manner, as will be seen in the following Table. The decline commenced about the year 1880. The rate which averaged 35.5 per 1,000 of the population from 1861 to 1880 fell as follows :—

Decline in the birth-rate in England and Wales :—

PERIOD.								BIRTH-RATE.
1881—1885	..	..	..	..	..	..	..	33.5 per 1,000
1886—1890	..	..	..	..	..	..	..	31.4 "
1891—1895	..	..	..	..	..	..	..	30.5 "
1896—1900	..	..	..	..	..	..	..	29.3 "
1901	..	..	..	..	..	..	..	28.5 "
1902	..	..	..	..	..	..	..	28.6 "
1903	..	..	..	..	..	..	..	28.4 "
1904	..	..	..	..	..	..	..	27.9 "
1905	..	..	..	..	..	..	..	27.2 "
1906	..	..	..	..	..	..	..	27.0 "

TABLE VIII.

Showing the number of legitimate and illegitimate births, male and female, and the number of deaths amongst children under one year of age in each Ward, and in the Union Workhouse, during the year 1906 :—

WARDS			Legitimate		Illegitimate		Total		Total	Deaths under one Year
			M	F	M	F	M	F		
Central	Ward	..	132	95	7	2	139	97	236	50
South	" "	..	108	153	5	3	113	156	269	43
Cathays	" "	..	341	317	7	—	348	317	665	66
Adamsdown	" "	..	198	165	4	4	202	169	371	57
Riverside	" "	..	198	178	2	3	200	181	381	42
Canton	" "	..	361	306	10	7	371	313	684	81
Grangetown	" "	..	353	394	7	4	360	398	758	115
Roath	" "	..	208	195	4	3	212	198	410	47
Park	" "	..	263	268	8	11	271	279	550	54
Splott	" "	..	280	304	6	4	286	308	594	87
Union Workhouse		..	8	4	42	29	50	33	83	33
TOTALS			2,450	2,379	102	70	2,552	2,449	5,001	675

TABLE IX.

Shows the annual birth-rate per 1,000 in some of the large towns in England and Wales for the 10 years 1897 to 1906, inclusive:—

LARGE TOWNS.	Annual birth-rate per 1,000 living.									
	1897	1898	1899	1900	1901	1902	1903	1904	1905	1906
London	30.0	29.5	29.4	28.6	29.0	28.5	28.5	28.0	27.1	26.6
Vest Ham	32.2	30.6	29.7	28.6	35.2	34.1	33.7	32.1	30.5	30.5
Croydon	25.0	25.4	25.1	24.9	26.4	26.1	26.3	26.1	26.4	25.7
Brighton	24.7	24.8	24.9	23.6	24.2	24.3	24.3	23.5	22.9	22.3
Portsmouth	26.9	26.7	26.2	25.7	27.9	27.1	27.9	28.2	27.7	28.6
Plymouth	28.5	29.7	29.8	28.4	26.8	27.0	25.5	25.3	25.6	23.9
Bristol	27.8	28.6	29.2	27.8	27.0	27.5	27.4	26.0	26.9	25.8
Wansea	29.4	28.9	27.7	26.7	30.1	31.1	32.0	30.5	30.9	31.9
Wolverhampton	35.1	35.8	35.3	33.5	31.7	31.6	30.5	29.8	28.7	27.4
Birmingham	33.3	34.0	34.3	32.7	32.1	31.8	31.8	31.5	29.2	29.2
Coventry	30.5	29.9	29.1	28.4	28.4	27.9	27.9	27.6	27.2	26.0
Leicester	30.6	29.6	29.4	28.2	29.0	29.1	27.4	26.6	25.8	25.3
Nottingham	28.9	28.9	28.9	27.7	28.4	27.8	28.3	27.8	26.5	26.5
Derby	27.1	27.4	28.1	26.9	27.8	28.0	27.0	27.2	25.5	25.0
Birkenhead	31.6	30.4	29.9	29.0	29.0	32.7	30.8	33.1	32.0	31.8
Liverpool	35.3	35.2	35.6	36.0	32.1	22.5	33.4	33.5	33.2	32.6
Solton	32.5	30.9	29.9	34.7	27.5	27.2	27.0	26.9	25.1	25.5
Manchester	33.2	32.7	32.6	32.3	29.1	32.8	32.1	31.3	29.4	29.0
Alford	35.1	34.7	33.9	33.1	29.2	33.8	32.2	31.7	30.5	30.2
Oldham	26.1	25.3	24.8	24.1	24.6	26.1	25.6	24.9	24.3	26.9
Sarnley	29.8	27.1	25.3	25.3	27.4	29.1	27.2	27.2	26.5	27.6
Blackburn	27.7	27.1	27.0	25.1	26.5	25.6	25.1	23.5	24.0	25.6
Preston	31.9	31.0	30.1	29.0	30.4	28.9	30.4	28.2	28.1	28.5
Luddersfield	23.4	22.5	23.0	22.8	22.7	24.4	23.8	23.7	23.8	24.2
Halifax	22.5	22.9	23.1	23.1	22.5	21.3	21.1	20.1	19.2	19.2
Bradford	24.6	24.0	23.4	23.1	23.1	23.0	23.3	22.0	21.0	20.6
Leeds	31.6	31.2	30.6	30.4	30.0	29.8	29.4	28.0	27.1	26.1
Sheffield	34.4	33.9	34.6	34.2	33.0	33.4	33.2	31.9	29.7	29.9
Hull	33.3	33.4	34.3	32.9	33.0	32.1	31.3	30.8	29.8	29.6
South Shields	34.6	35.4	35.7	35.8	35.5	35.9	35.1	34.4	34.2	34.8
South Shields	35.8	35.5	36.6	36.3	36.8	36.7	35.8	34.4	32.7	31.9
Newcastle-on-Tyne	31.3	31.7	31.4	30.4	32.1	32.6	31.1	30.5	32.1	30.6
Cardiff	35.1	35.9	33.7	35.2	31.4	31.2	30.5	29.5	28.5	27.2

DEATHS.—The average death-rate in Cardiff in the ten years 1896-1905 was 16.5 per 1000. The rate of mortality (14.2) for 1906 was therefore considerably below the average, and was in fact, with the exception of the year 1905, the lowest rate recorded since reliable vital statistics were first published in 1847.

In the first quarter of the year 1906, the number of deaths registered in the City of Cardiff, at all ages, and from all causes was 667, corresponding to an annual death-rate of 14.5 per 1000 persons living, as compared with 16.5, the average rate in the 76 large towns of England and Wales, and with 15.0, the rate in the corresponding quarter of 1905. The death-rates during the first quarter of 1906 ranged from 10.2 per 1,000 in Hornsey, 10.7 in Kings Norton, and 10.9 in East Ham, to 19.6 in Warrington, 20.0 in Swansea, 20.1 in Merthyr Tydfil, 21.3 in Liverpool, and 22.5 in Preston. In the whole of England and Wales the number of deaths registered was equal to an annual death-rate of 16.5 per 1,000. Of the 667 deaths from all causes, 33 were ascribed to the principal epidemic diseases, corresponding to an annual death-rate of 0.8 per 1,000, as compared with 1.5 in the corresponding quarter of 1905. The average death-rate from these diseases in the 76 large towns was 1.3 per 1,000. The infant mortality in the first quarter was at the rate of 128 deaths under one year of age per 1,000 births registered, which exactly corresponded with the average rate in the 76 large towns. The infant mortality in Cardiff in the corresponding quarter of 1905 was at the rate of 119 deaths under one year per 1,000 births.

In the second quarter of the year the number of deaths at all ages, and from all causes was 635, corresponding to an annual death-rate of 13.8 per 1,000 persons living, as compared with 14.6, the average rate in the 76 large towns, and with 13.1, the rate in the corresponding quarter of 1905. The death-rate during the second quarter ranged from 7.6 per 1,000 in Hornsey, 8.5 in East Ham, 8.7 in Willesden, to 19.0 in Manchester, 20.2 in Middlesbrough, and 20.5 in Liverpool. In the whole of England and Wales, the number of deaths registered during the second quarter was equal to an annual death-rate of 14.6 per 1,000. Of the 635 deaths from all causes in Cardiff, 40 were ascribed to the principal epidemic diseases, corresponding to an annual death-rate of 0.8 per 1,000, as compared with 1.4, the rate in the corresponding quarter of 1905, and with 1.4, the average rate in the 76 large towns for the same period. The infant mortality was at the rate of 100 deaths under one year of age per 1,000 births registered, as compared with 107, the average in the 76 large towns, and with 108, the rate in the second quarter of 1905.

In the third quarter of the year, the number of deaths, at all ages, and from all causes, was 574, corresponding to an annual death-rate of 12.4 per 1,000 persons living, as compared with 16.1, the average rate in the 76 large towns, and with 11.5, the rate in the corresponding quarter of 1905. The death-rate during the third quarter ranged from 7.2 in Hornsey, 9.2 in Kings Norton, and 10.2 in Handsworth, to 21.0 in Liverpool, 21.1 in Merthyr Tydfil, and 21.9 in Stockport. In the whole of England and Wales, the number of deaths registered during the third quarter was equal to an annual death-rate of 14.9 per 1,000. Of the 574 deaths from all causes, 128 were ascribed to the principal infectious diseases, corresponding to an annual death-rate of 2.7 per 1,000, as compared with 1.1, the rate in the corresponding quarter of 1905, and with 4.4, the average rate in the 76 large towns for the same period. The infant mortality was at the rate of 154 deaths under one year of age, per 1,000 births registered, as compared with 209 in the 76 large towns, and with 120, the rate in the third quarter of 1905.

In the fourth quarter of the year, the number of deaths, at all ages, and from all causes, was 678, corresponding to an annual death-rate of 14.7 per 1,000 living, as compared with 16.1, the average death-rate in the 76 large towns, and with 13.0, the rate in the corresponding quarter of 1905. The death-rate during the fourth quarter ranged from 7.3 per 1,000 in Hornsey, 8.5 in Kings Norton, and 10.2 in Northampton, to 21.2 in Middlesbrough, 21.8 in South Shields, and 22.1 in Oldham. In the whole of England and Wales, the number of deaths registered during the fourth quarter was equal to an annual death-rate of 15.6 per 1,000. Of the 678 deaths from all causes, 43 were ascribed to the principal epidemic diseases, corresponding to an annual death-rate of 0.9 per 1,000, as compared with 0.5 in the corresponding quarter of 1905, and with 1.7, the rate in the 76 large towns. The infant mortality in Cardiff, during the fourth quarter was at the rate of 157 deaths under one year of age, per 1,000 births, as compared with 124 in the corresponding quarter of 1905, and with 137, the average rate in the 76 large towns.

TABLE X.

Shows the annual death-rates per 1,000 in some of the large towns in England and Wales for the 10 years, 1897—1906, inclusive:—

LARGE TOWNS.	Annual death-rate per 1,000 living.									
	1897.	1898.	1899.	1900.	1901.	1902.	1903.	1904.	1905.	1906.
London	18.2	18.7	19.8	18.8	17.6	17.7	15.7	16.1	15.6	15.7
Vest Ham	15.7	15.4	16.7	15.9	18.0	17.1	15.3	16.7	15.5	15.3
Troydon	13.1	13.9	15.0	14.6	12.9	14.0	11.8	13.8	12.7	13.4
Brighton	15.1	16.9	19.0	17.8	16.5	15.8	14.3	16.6	10.9	14.4
Portsmouth	16.2	16.3	19.7	17.3	17.9	16.8	14.7	16.8	16.6	14.8
Plymouth	19.0	19.5	21.7	20.8	17.9	17.0	16.5	18.7	16.8	16.4
Bristol	17.2	17.2	18.2	16.7	16.0	17.4	14.3	15.4	14.7	14.3
Wansea	15.8	18.6	18.1	17.1	18.6	16.1	18.6	17.7	16.5	17.9
Wolverhampton	22.5	21.3	21.8	22.5	16.9	16.4	15.5	14.6	14.8	14.7
Birmingham	21.6	20.0	20.8	21.5	20.5	18.6	17.8	19.3	16.1	16.7
Norwich	18.8	19.0	17.3	17.6	18.7	16.7	15.2	18.2	16.5	16.7
Leicester	17.7	16.9	17.7	17.4	15.9	14.9	14.2	14.5	13.4	14.4
Nottingham	18.8	17.7	20.0	19.1	18.5	16.9	16.9	17.5	16.3	16.0
Derby	13.0	16.8	16.9	17.5	15.2	13.9	13.6	15.1	15.0	14.0
Birkenhead	18.3	17.4	19.2	16.8	18.7	17.7	16.8	19.8	15.3	17.7
Liverpool	24.4	24.0	26.4	25.7	22.3	22.5	20.5	21.9	19.2	20.3
Bolton	22.0	19.4	19.9	19.5	18.2	16.9	17.5	16.9	15.4	15.5
Lancaster	23.1	21.9	24.6	24.1	22.1	20.0	19.7	21.3	18.0	19.0
Salford	23.9	22.7	23.8	25.1	21.7	19.3	19.0	21.0	17.1	18.5
Oldham	19.2	17.6	20.5	19.6	19.6	19.1	18.6	18.3	18.8	18.8
Burnley	19.5	16.3	19.6	16.3	19.0	19.5	19.2	20.0	16.5	19.7
Blackburn	19.5	18.4	19.1	20.5	19.5	16.9	15.7	17.2	16.4	16.4
Preston	24.4	19.3	22.8	24.0	21.0	19.1	18.7	17.8	16.4	19.2
Luddersfield	16.4	15.9	16.2	16.6	16.7	17.8	16.7	17.5	16.9	17.3
Halifax	16.5	17.9	18.3	18.1	16.4	15.7	15.0	15.5	15.3	15.5
Bradford	17.5	17.6	18.4	16.4	16.8	15.8	16.4	17.5	15.1	16.1
Leeds	19.9	19.2	19.1	20.0	19.3	17.6	16.6	17.9	15.3	15.8
Sheffield	21.2	20.2	22.2	22.6	20.4	17.1	18.6	16.8	17.0	16.7
Hull	18.6	18.4	19.3	19.7	18.6	17.2	16.9	18.0	16.0	17.0
Wolverhampton	19.7	22.6	21.5	21.4	21.4	19.5	19.9	19.4	18.6	18.5
Wateshead	18.3	20.6	18.8	19.0	21.6	17.7	16.7	18.5	15.5	16.4
Newcastle-on-Tyne	19.1	21.4	20.6	19.5	21.9	19.9	19.2	19.4	16.8	17.1
ARDIFF	16.8	17.0	18.1	16.5	15.7	16.9	14.4	15.2	13.5	14.2

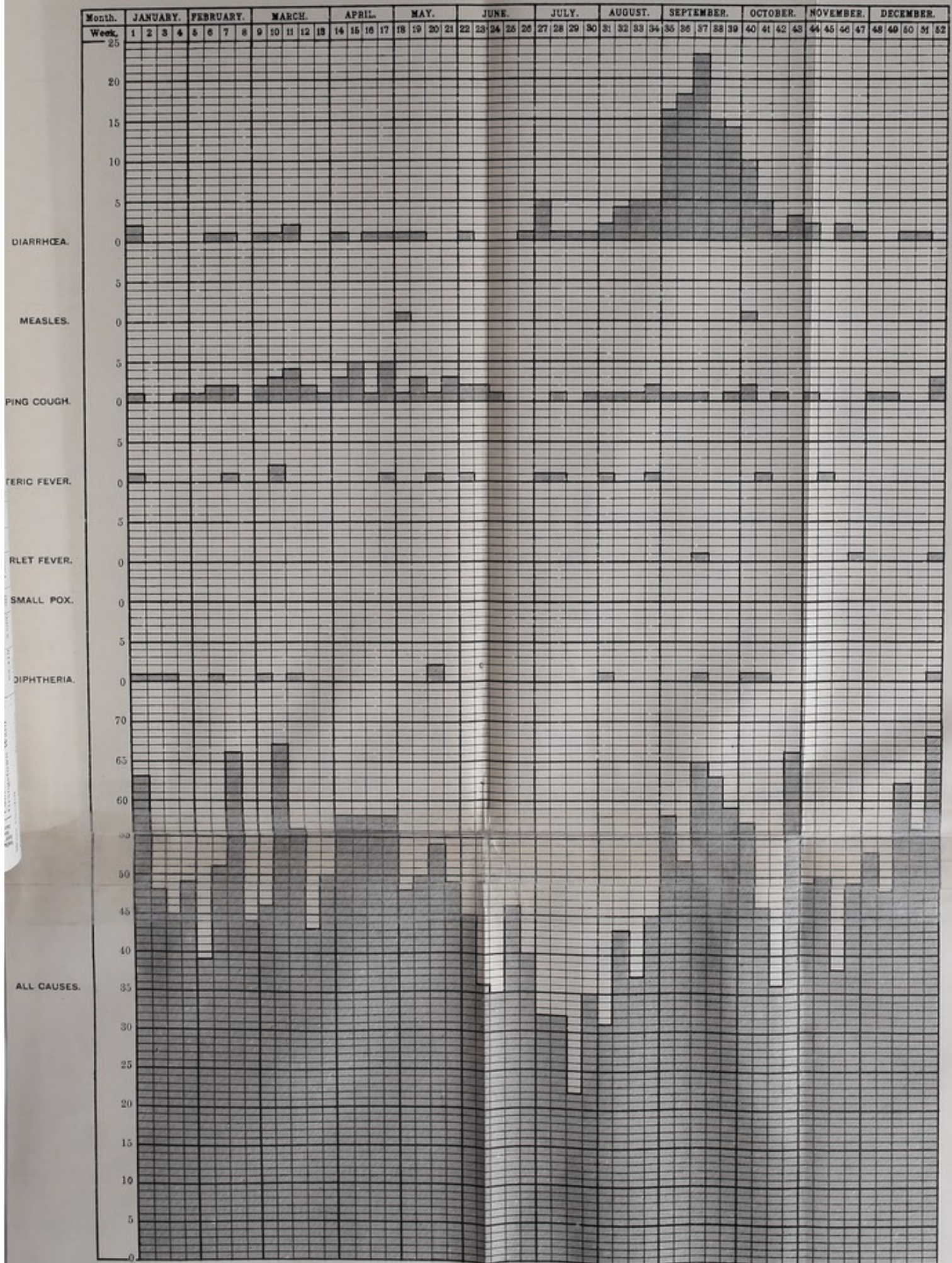
TABLE XI.—Analysis of Births and Deaths in the City of Cardiff, in the Registration Sub-Districts, and in each Ward in the City, during the year, 1906.

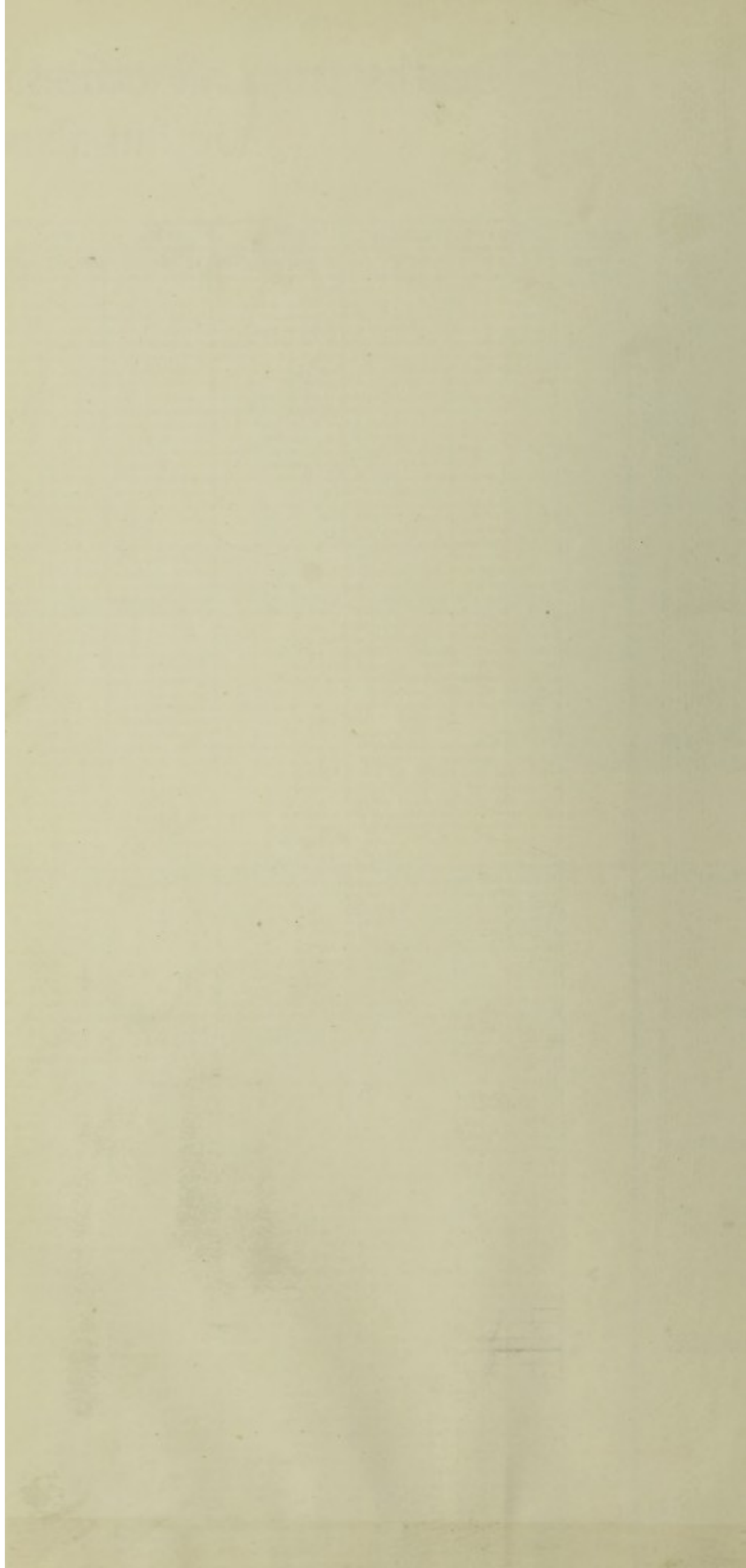
LOCALITIES.	*Population	Area in Acres	Persons per Acre	Total Births	Birth-rate	†Total Deaths	Death-rate	Deaths under One Year per 1,000 Births registered	Seven Chief Zymotic Diseases		Principal Zymotic Diseases												Tuberculosis, Meningitis, and other forms of Tuberculosis		Phthisis		Diseases of Respiratory Organs				
									Deaths	Death-rate	Small-pox		Measles		Scarlet Fever		Whooping Cough		Diphtheria		Typhoid Fever		Diarrhoea		Deaths	Death-rate	Deaths	Death-rate	Deaths	Death-rate	
											Deaths	Death-rate	Deaths	Death-rate	Deaths	Death-rate	Deaths	Death-rate	Deaths	Death-rate	Deaths	Death-rate	Deaths	Death-rate							Deaths	Death-rate
City of Cardiff	183,823	6,373	28	5,001	27.2	2,554	13.8	134	248	1.34	..	..	2	0.01	3	0.01	66	0.35	13	0.07	13	0.07	0.07	151	0.82	95	0.51	222	1.20	441	2.39
{ Roath Ward Park Ward Splott Ward East Cardiff	16,147	..	..	410	25.3	199	12.3	114	25	1.54	..	..	1	0.06	..	..	13	0.80	1	0.06	1	0.06	0.06	9	0.55	7	0.43	12	0.74	38	2.35
	25,902	..	..	550	21.2	231	8.9	98	22	0.84	..	..	..	..	..	..	7	0.27	2	0.07	2	0.07	0.07	11	0.42	11	0.42	18	0.69	43	1.66
	16,959	..	..	594	35.0	236	13.9	146	29	1.71	..	..	1	0.05	..	..	6	0.35	..	..	..	..	0.22	22	1.29	8	0.47	19	1.12	57	3.36
	59,008	481	122	1,554	26.3	666	11.2	121	76	1.28	..	..	2	0.03	..	..	26	0.44	3	0.05	3	0.05	0.05	42	0.71	26	0.44	49	0.83	138	2.33
{ Central Ward South Ward Cathays Ward Adamsdown Ward	11,364	..	..	236	20.7	164	14.4	211	11	0.96	..	..	..	..	..	..	4	0.35	..	..	..	0.08	6	0.52	5	0.44	14	1.23	23	2.02	
	10,370	..	..	269	25.9	171	16.4	159	15	1.44	..	..	..	..	..	..	5	0.47	..	..	2	0.19	8	0.77	5	0.47	12	1.15	24	2.31	
	22,182	..	..	665	29.9	249	11.2	99	22	0.99	..	..	..	..	..	..	13	0.58	2	0.09	..	..	7	0.31	15	0.67	15	0.67	41	1.84	
	12,202	..	..	371	30.4	211	17.2	153	11	0.90	..	..	..	..	..	..	..	..	1	0.08	..	..	10	0.81	4	0.32	24	1.96	40	3.27	
Central Cardiff	56,118	3,832	14	1,541	27.4	795	14.1	140	59	1.05	..	..	..	..	..	..	22	0.39	3	0.05	3	0.05	0.05	31	0.55	29	0.51	65	1.15	128	2.28
{ Riverside Ward Canton Ward Grangtown Ward West Cardiff	18,049	..	..	381	21.1	167	9.2	110	13	0.72	..	..	..	..	..	..	3	0.16	..	..	..	..	10	0.55	5	0.27	17	0.94	25	1.38	
	24,302	..	..	684	28.1	241	9.9	118	33	1.35	..	..	..	..	..	..	10	0.41	1	0.04	1	0.04	0.04	21	0.86	11	0.45	19	0.78	40	1.64
	20,068	..	..	758	37.7	290	14.4	151	45	2.24	..	..	..	..	1	0.04	5	0.24	2	0.09	..	..	37	1.84	10	0.49	27	1.34	60	2.98	
	62,419	2,060	30	1,823	29.2	698	11.1	130	91	1.45	..	..	..	..	1	0.01	18	0.28	3	0.04	1	0.01	0.01	68	1.08	26	0.41	63	1.00	125	2.00
Infectious Diseases Hospital ..	162	..	..	..	..	12	..	..	12	..	..	..	..	..	2	..	..	..	4	..	6	..	..	..	..	..	..	..	..	..	..
Union Workhouse	880	..	..	83	..	281	..	..	9	..	..	..	..	..	..	..	..	..	..	..	..	..	9	..	5	..	44	..	45	..	..
Infirmary	175	..	..	..	..	93	..	..	1	..	..	..	..	..	..	..	..	..	..	..	..	..	1	..	8	..	1	..	3	..	..
Royal Hamadryad Seamen's Hospital	49	..	..	..	..	9	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	1	..	..	..	2	..	..

* The population of the City of Cardiff is that given by the Registrar General. The population of the Registration Sub-Districts and Wards is estimated on the basis of the number of inhabited houses, June, 1906. The population of the institutions is that given at the Census, 1901.

† Actual number of deaths of children within the City.

Deaths from all causes, and the Seven Zymotic Diseases,
in Cardiff during 1906.





INFANT MORTALITY.—The following Table shows the rate of infant mortality which has prevailed in the large towns in past years :—

TABLE XII.

Towns.	Deaths under one year to 1,000 births registered.									
	1897	1898	1899	1900	1901	1902	1903	1904	1905	1906
London	158	167	167	160	149	141	131	144	131	132
West Ham	171	170	197	189	171	149	146	165	156	149
Croydon	134	150	154	132	141	132	108	129	96	125
Brighton	142	181	173	166	161	125	114	133	100	111
Portsmouth	168	156	197	155	163	152	114	145	133	130
Plymouth	183	170	190	175	149	155	144	173	136	154
Bristol	148	164	158	133	131	131	116	133	122	128
Swansea	139	184	166	175	174	135	165	172	131	156
Wolverhampton	217	200	184	206	163	134	141	152	136	140
Birmingham	214	191	191	199	187	157	159	195	155	168
Norwich	196	192	179	178	183	167	150	180	174	176
Leicester	205	191	195	175	175	153	160	163	146	166
Nottingham	205	178	210	196	193	159	165	175	155	171
Derby	167	169	162	174	154	125	128	143	151	114
Birkenhead	162	186	186	160	181	148	156	180	127	151
Liverpool	200	184	198	186	188	163	159	196	154	171
Bolton	186	168	181	171	172	134	152	167	166	138
Manchester	194	197	206	189	199	152	169	187	157	166
Salford	220	212	209	207	204	157	167	193	150	162
Oldham	183	175	198	172	173	148	160	155	150	146
Burnley	219	195	269	205	226	177	217	232	173	213
Blackburn	207	206	189	220	193	159	157	191	146	156
Preston	263	225	255	236	216	189	161	183	150	200
Huddersfield	130	153	152	132	132	138	120	136	119	135
Halifax	139	163	159	132	127	144	122	130	130	118
Bradford	178	185	181	141	168	139	148	166	144	152
Leeds	191	182	171	183	188	159	153	176	152	152
Sheffield	197	195	194	200	201	150	182	159	167	158
Hull	178	182	175	183	175	137	162	181	153	161
Sunderland	163	202	175	169	182	147	157	165	143	140
Gateshead	173	208	177	169	197	136	159	174	138	163
Newcastle-on-Tyne	177	190	193	170	178	139	165	156	135	151
CARDIFF	150	158	164	141	148	145	122	144	118	134

The infant mortality in Cardiff during the year 1906 compares very favourably with that in previous years. The rate of infant mortality is calculated as the number of deaths of infants under one year to 1000 births registered. This number was 134, as compared with 118 in the year 1905, and with 148 in the 10 years 1896—1905.

The rate of infant mortality per 1,000 births in England and Wales in the year 1906 was as follows :—

	Deaths of infants under 1 year per 1,000 births.
England and Wales	133
Rural England and Wales	116
76 great towns	145
142 smaller towns	138
Cardiff	134

A special report upon infantile mortality was submitted to the Sanitary Authority, a copy of which is included in the appendix to this report.

TABLE XIII.

The following Table shows the distribution of mortality from the chief zymotic diseases, phthisis, diseases of the respiratory organs, and from other causes, in streets in Cardiff, during the year 1906:—

CENTRAL WARD.

NAME OF STREET.	Small pox.	Measles.	Scarlet Fever	Diphtheria.	Whooping Cough.	Typhoid Fever.	Diarrhoea.	Phthisis.	Respiratory Diseases.	Other Causes.	Total.
Blackweir Terrace..	1	1
Bridge Street	1	..	..	1	..	4	6
Bute Street	1	..	1	2
Bute Terrace	1	1
Canal Street	1	1	1	..	3
Caroline Street	1	1
Castle Arcade	1	1
Charles Street	1	..	1	..	1	4	7
Church Street	1	1
Colum Road	1	1	5	7
Corbett Road	1	1
Custom House Street	1	..	..	..	2	3
David Street	1	..	..	..	2	4	7
East Terrace	1	..	..	..	1
Edward Street	1	1
Eisteddfod Street	2	2
Frederick Street	1	..	6	7
Glamorgan Canal	1	1
Gough Street	2	2
Guildford Crescent	1	1
G.W.R. Station	1	1
Havelock Street	1	..	2	3	6
Hayes, The	1	1
Hill Street	3	3
Hill's Terrace	5	5
Homfray Street	1	..	1
Little Frederick Street	1	..	3	..	4
Love Lane	1	3	4
Mary Ann Street	1	4	5
Millicent Street	3	..	1	4
Nazareth House	4	11	5
North Road	1	..	..	..	..	9	10
Park Street	1	1
Pembroke Terrace	2	2
Plymouth Street	1	1
Queen Street	4	4
Raven Street	1	1
Richmond Terrace	1	1
Roberts' Court	1	..	1	2
Rodney Street	3	3
Rowe's Square	1	1
Ruperra Street	1	..	..	3	4
Scott Street	2	..	4	6
St. Andrew's Place	1	1
St. Mary Street	1	2	3
Thomas Terrace	1	..	..	1
Tredegar Street	1	2	5	8
Union Street	1	1	2
Windsor Place	1	..	1
Womanby Street	1	..	1	2
Wood Street	1	3	4
Working Street	1	1
Totals	4	1	6	14	23	116	164

SOUTH WARD.

NAME OF STREET.	Small-pox.	Measles.	Scarlet Fever.	Diphtheria.	Whooping Cough.	Typhoid Fever.	Diarrhoea.	Phthisis.	Respiratory Diseases.	Other Causes.	Total.
delaide Street	1	..	..	..	2	4	7
lice Street	1	1
llen's Arch	2	2
ngelina Street	1	1	1	3	6
urt Street	2	2
ute Lane	1	1
ute Street	1	1	3	9	14
anal Parade	1	..	..	1
hristina Street	1	..	..	..	3	4	8
larence Embankment	4	4
richton Place	1	..	..	..	1
richton Street	1	1	1	3
udley Place	1	1
udley Street	1	1
umballs Road	1	1
ast Wharf	1	1
leanor Street	4	4
velyn Street	1	..	..	..	1
eedler, The	1	1
ancis Street	1	1	3	5
George Street	1	1	4	6
lamorgan Canal	3	3
harpur Street	1	2	3
harrowby Street	2	2
herbert Street	1	..	2	4	7
Hodges' Court	1	..	..	..	..	1	2
Hodges' Row	2	2
Hunter Street	4	4
James Street	1	1
John Street	2	1	3
Loudoun Square	1	..	..	1	3	5
Louisa Street	1	6	7
Margaret Street	1	..	4	5
Maria Street	1	..	..	..	..	4	5
Mount Stuart Dry Dock	1	1
Mount Stuart Square	1	1	1	3
Nelson Street	1	..	..	1
North Church Street	1	1	..	4	6
Old Canal	1	1
Patrick Street	1	2	3
Peel Street	1	..	..	2	3
Penarth Road	1	..	..	..	1	3	5
Percy Street	2	2
Pomeroy Street	4	4
Royal Hamadryad Sea- men's Hospital }	2	7	9
Sophia Street	1	1
South Church Street	1	1
South Loudoun Place	1	1
South William Street	1	..	5	6
Stuart Street	1	2	4	7
Tresillian Terrace	1	1
"Trevanack" s.s.	1	1
West Bute Street	2	2
Windsor Esplanade	1	..	..	..	..	1
Windsor Terrace	1	..	..	..	1
Totals	5	2	8	12	26	127	180

CATHAYS WARD.

NAME OF STREET.	Small pox	Measles.	Scarlet Fever	Diphtheria.	Whooping Cough.	Typhoid Fever.	Diarrhoea.	Phthisis.	Respiratory Diseases.	Other Causes.	Total.
Alexander Street	1	1	2
Allen's Bank Crescent	1	..	1
Allen's Bank Road	1	..	..	4	5
Barracks, The	1	1
Brithdir Street	2	2	4
Cairns Street	2	..	1	1	4	12	20
Cathays Terrace	1	3	15	19
Catherine Street	1	1
Clun Terrace	3	3
Coburn Street	1	1	6	8
Cranbrook Street	3	3
Crwys Road	2	..	8	10
Dalton Street	2	2
Daniel Street	3	3	6
Darran Street	1	..	..	..	1	1	3
Dogfield Street	1	..	..	4	5
Fitzroy Street	3	..	..	..	..	..	3
Flora Street	1	8	9
Florentia Street	1	..	..	..	..	..	1	2
Gelligaer Street	1	1
Gladys Street	1	1
Glynrhondda Street	1	..	2	3
Harriett Street	2	..	1	2	1	5	11
Hirwain Street	1	..	..	..	1	1	3
Letty Street	2	2
Lisvane Street	1	1	..	2
Llanbleddian Gardens	4	4
Llandough Street	1	1	2
Llantrisant Street	1	1	..	..	..	1	2	5
Llantwit Street	1	1
Malefant Street	2	3	5
Manor Street	1	1	4	6
May Street	1	..	..	..	2	6	9
Merthyr Street	1	2	2	5
Minny Street	1	..	6	7
Miskin Street	3	3
Monthermer Road	1	..	..	..	2	7	10
Mundy Place	1	1
Norman Street	1	..	1
Rhymney Terrace	1	1
Richard Street	2	..	2	2	6
Robert Street	6	6
Salisbury Road	1	3	4
Spencer Street	1	1	..	..	2
Talygarn Street	1	2	3
Tewkesbury Place	1	1
Tewkesbury Street	7	7
Thesiger Street	1	2	3
Treherbert Street	1	..	1
Treorky Street	1	..	..	..	..	1	2
Whitchurch Place	1	..	1
Whitchurch Road	1	1
Woodville Road	1	..	11	12
Wyeverne Road	1	2	7	10
Totals	2	13	..	7	15	41	171	249

ADAMSDOWN WARD.

NAME OF STREET.	Small pox.	Measles.	Scarlet Fever.	Dysentery.	Whooping Cough.	Typhoid Fever.	Diarrhoea.	Phthisis.	Respiratory Diseases.	Other Causes.	Total.
Adam Street	2	2	3	7
Adamsdown Square	2	2
Ascog Street	1	1
Augusta Street	1	..	1	2	4
Bristol Channel	3	3
Buzzard Street	1	1
Clifton Street	1	..	..	1	2
Clyde Street	1	..	1
Comet Street	1	..	4	5
Constellation Street	2	..	4	6
Cumnock Street	1	1
Cumrae Street	1	..	..	1
Cycle Street	1	..	..	1	2
David Street	1	3	4
Duffryn Street	1	1
East Dock	1	9	10
Eclipse Street	1	..	..	..	..	..	2	3
Ellen Street	2	4	6
Fitzalan Place	1	1	2
Flat Holmes	1	1
Galston Place	1	1
Galston Street	1	..	..	1	2
Garth Street	1	1	2
Godfrey Street	2	2
Gold Street	2	2
Gwendoline Street	1	1	2
Howard Gardens	1	..	..	1
Inchmarnock Street	3	3
Infirmary	1	1	3	88	93
Infirmary, On way to	1	1
Iron Street..	1	..	..	1
Ivor Street..	1	3	4
Kerrycroy Street	4	4
Kilcattan Street	1	1
Kingarth Street	1	1
Lead Street	1	3	4
Longcross Street	1	1	2
Metal Street	1	2	3
Moirs Place	1	..	..	..	1
Moirs Terrace	1	2	3
Moon Street	2	1	1	4
Morgan Street	3	3
New Dock	1	1
Newport Road	1	5	6
Noah Street	2	..	2	4
North Luton Place	2	2
North William Street	3	2	4	9
Orbit Street	1	1	..	3	5
Pellett Street	1	3	1	5
Pendoylan Street	1	1	1	2	5
Planet Street	1	3	4
Platinum Street	1	..	1
Prince Leopold Street	2	..	2
Prison, H.M.	1	..	3	4
Roath Dock	1	..	7	8
Roland Street	1	4	5
Sandon Place	1	1	2
Sandon Street	1	1
Sanquahar Street	1	1
Sea, At	1	1
Silver Street	1	..	..	2	3
South Luton Place	1	1	2
System Street	1	..	1	2	4
Taff Street	2	2
Tin Street	1	..	1	2
Tyndall Street	3	4	2	9
Victoria Street	1	..	1
West Dock..	4	4
West Luton Place	1	1
Windsor Road	2	3	5
Zinc Street..	1	..	1	..	2
Totals	1	..	..	11	25	43	224	304

RIVERSIDE WARD.

NAME OF STREET.	Small-pox.	Measles.	Scarlet Fever.	Diphtheria.	Whooping Cough.	Typhoid Fever.	Diarrhoea.	Phthisis.	Respiratory Diseases.	Other Causes.	Total.
Ann Street	2	2
Beauchamp Street	1	3	4
Berthwin Street	1	1
Brook Street	1	..	3	4
Brunel Street	1	1
Cathedral Road	2	..	..	2	..	5	9
Clare Street	1	..	2	3
Cowbridge Road	1	2	3	6
Craddock Street	2	2	1	6	11
Deburgh Street	1	1	4	6
Despencer Gardens	1	1
Despencer Street	1	..	2	3
East Street	2	2
Eldon Street	2	..	..	6	8
Gloucester Street	4	4
Halket Street	3	..	3
Hamilton Street	1	..	2	3
Kings Road	2	8	10
Kyveilog Street	1	1
Lewis Street	1	1
Lower Cathedral Road	1	2	3
Machen Place	1	..	1
Mansfield Street	2	2
Mandeville Street	1	..	..	..	..	..	1
Mark Street	1	3	4
Mortimer Road	1	1
Neville Street	3	..	3	6
North Morgan Street	1	1
Picton Place	1	2	3
Pitman Street	1	1
Plantagenet Street	1	..	..	3	4
Plasturton Avenue	1	1	1	3
Plasturton Place	1	1
Pontcanna Street	1	1
Rennie Street	1	..	1
River Taff	1	1
Ryder Street	1	..	1
Severn Road	1	..	1	7	9
Smeaton Street	1	1
South Morgan Street	2	..	..	1	3
Stephenson Street	1	1	1	3
Teilo Street	1	..	1
Telford Street	1	3	4
Tudor Road	1	4	5
Union Workhouse	9	44	45	183	281
Wellington Street	1	..	..	3	4
Wells Street	1	..	..	1	2
Wyndham Crescent	1	3	4
Wyndham Place	1	..	..	1
Wyndham Road	1	2	6	9
Wyndham Street	3	3
Totals	3	..	19	61	70	295	448

CANTON WARD.

NAME OF STREET.	Small pox.	Measles.	Scarlet Fever.	Diphtheria.	Whooping Cough.	Typhoid Fever.	Diarrhoea.	Phthia.	Respiratory Diseases.	Other Causes.	Total.
Albert Street	2	1	..	4	7
Edsworth Road	1	2	6	9
Alexandra Road	1	..	..	1
Anglesea Street	1	1
Clas Road	1	..	..	..	..	2	3
Assett Street	1	..	1
Cacon Street	1	1
Eda Road	1	..	..	1
loom Street	2	2
recon Street	5	5
runswick Street	1	..	3	4
ardigan Street	1	2	3
ancery Lane	2	..	1	..	3
urch Road	1	1
ive Road	1	..	..	..	..	5	6
onway Road	1	..	4	5
onybeare Road	1	..	..	..	1
owbridge Road	1	..	1	..	..	14	16
umberland Street	1	..	..	..	1
aisy Street	1	2	1	1	5
enton Street	1	..	..	..	..	..	1
gerton Street	1	..	..	5	6
gham Street	1	1
ldon Street	1	..	1	1	3
thel Street	1	..	..	..	4	3	8
ern Street	1	1
orrest Road	2	2
lamorgan Street	1	..	1	2
lynn Street	1	2	3
ray Street	2	3	6	11
rosvenor Street	2	2
lanover Street	1	..	..	..	..	1
arvey Street	6	6
vy Street	1	..	1
ingsland Road	1	..	1	2
ansdowne Road	1	1
eckwith Road	3	3
incoln Street	1	..	4	2	7
ionel Road	1	..	..	..	1	2	4
ittleton Street	2	2
landaff Road	3	4	7
oftus Street	1	1	..	2	4
yndhurst Street	1	..	2	..	1	6	10
ajor Road	2	2
arket Road	2	..	2
eadow Street	1	1
ortimer Road	2	2	4
lyrtle Street	1	..	..	..	..	..	1
esta Road	1	..	..	1
rehard Place	1	..	1	2
embroke Road	1	..	1	3	5
enypeel Road	2	2
hilip Street	1	1	2
icton Place	2	1	3
ontcanna Place	1	..	..	..	..	1	2
reswylfa Street	1	..	..	1	2
adnor Road	3	1	1	5
ailway Terrace	3	3
ectory Road	1	1
olls Street	2	2
evern Road	1	7	8
pringfield Place	1	..	..	..	..	3	3	7
urrey Street	1	1
heobald Road	1	..	1
hornhill Street	2	2
hurston Street	1	1
urberville Place	1	..	..	..	..	..	1
urner Road	1	..	1	2

CANTON WARD—continued.

NAME OF STREET.	Small-pox.	Measles.	Scarlet Fever.	Diphtheria.	Whooping Cough.	Typhoid Fever.	Diarrhoea.	Phthisis.	Respiratory Diseases.	Other Causes.	Total.
Wellington Street	3	..	1	4	8
Wells Street	1	..	..	1	2
Westmoreland Street	2	2
Windway Road	1	..	..	..	1
York Street	1	1
Totals	1	16	1	21	19	40	149	241

ROATH WARD.

Albany Road ..	..	..	..	..	..	..	..	..	..	1	1
Alma Road ..	..	..	..	..	..	..	..	..	1	..	1
Arthur Street ..	..	..	..	..	1	..	..	1	..	1	3
Beresford Road ..	..	..	..	..	..	..	..	..	1	2	3
Bertram Street ..	..	..	..	..	..	..	..	1	1	3	5
Blanche Street ..	..	..	..	..	..	..	..	1	..	3	4
Bradley Street ..	..	..	..	..	..	..	..	1	1	3	5
Broadway ..	..	..	..	..	..	..	..	..	3	10	13
Cecil Street ..	..	..	..	..	..	..	1	1	2	1	5
Claude Road ..	..	..	..	..	1	..	..	1	..	6	8
Clifton Street ..	..	..	..	..	1	..	..	..	1	1	3
Connaught Road ..	..	..	..	..	..	..	..	..	..	2	2
Cottrell Road ..	..	..	..	..	..	..	..	..	..	3	3
Cressy Road ..	..	..	..	..	..	..	..	..	1	..	1
Crofts Street ..	..	..	..	..	..	..	1	..	..	..	1
Cyril Crescent ..	..	..	..	..	..	..	..	..	..	1	1
Diamond Street ..	..	..	..	..	..	..	..	..	2	3	5
Elm Street ..	..	..	..	..	..	..	..	..	..	2	2
Emerald Street ..	..	..	..	..	1	..	1	..	2	5	9
Fort Street ..	..	..	..	..	..	..	..	..	..	1	1
Fox Street ..	..	..	..	..	..	..	..	..	1	..	1
Harold Street ..	..	..	..	..	..	..	..	..	..	1	1
Helen Street ..	..	..	..	..	1	..	..	1	3	6	11
Marlborough Road ..	..	..	..	..	..	..	..	..	2	..	2
Newport Road ..	..	..	..	..	..	..	..	1	1	8	10
Nora Street ..	..	..	..	..	1	..	1	1	1	12	16
Oakfield Street ..	..	..	..	..	..	..	..	..	..	5	5
Partridge Road ..	..	..	..	..	..	..	..	1	2	4	7
Pearl Crescent ..	..	..	..	..	..	..	..	..	..	1	1
Pearl Place ..	..	..	..	..	..	..	..	..	1	..	1
Pearl Street ..	..	..	..	..	1	1	3	..	5	7	17
Penylan Road ..	..	..	..	..	..	..	..	..	..	6	6
Princes Street ..	..	..	..	..	..	..	..	..	..	1	1
Richards Terrace ..	..	..	..	..	..	..	..	1	..	4	5
Roath Brook ..	..	..	..	..	..	..	..	..	..	1	1
Ruby Street ..	..	..	1	..	1	..	..	..	2	2	6
Sapphire Street ..	..	..	..	..	..	..	1	..	1	3	5
Snipe Street ..	..	..	..	..	..	..	..	1	..	3	4
Spring Gardens Place ..	..	..	..	..	..	..	..	..	1	1	2
Stacey Road ..	..	..	..	..	1	..	..	..	1	4	6
T.V.R. Line ..	..	..	..	..	..	..	..	..	..	1	1
Theodora Street ..	..	..	..	..	2	..	..	..	1	3	6
Topaz Street ..	..	..	..	..	1	..	1	..	1	3	6
Tyler Street ..	..	..	..	..	1	..	..	..	..	..	1
Wellfield Road ..	..	..	..	1	..	..	..	..	..	..	1
Totals ..	..	1	..	1	13	1	9	12	38	124	199

GRANGETOWN WARD.

NAME OF STREET.	Small pox.	Measles.	Scarlet Fever	Diphtheria	Whooping Cough.	Typhoid Fever.	Diarrhoea.	Phthisis.	Respiratory Diseases.	Other Causes.	Total.
Allerton Street	1	1	2	4
Amherst Street	3	5	8
Bishop Street	1	..	1
Blaenclydach Street	2	2
Bradford Street	1	..	1
Bromfield Street	1	..	2	3
Bromsgrove Street	3	3
Cambridge Street	2	2
Chester Place	1	..	..	..	1
Chester Street	1	..	..	..	..	6	7
Clare Road	1	..	..	1	4	2	2	10
Clive Street	1	..	7	4	5	9	26
Clydach Street	1	1
Coedcae Street	1	1	2
Compton Street	1	..	1	2	4
Cornwall Street	1	1	3	2	7
Court Road	1	..	1	1	1	4	8
Corporation Road..	1	1	7	9
Cymmer Street	1	..	4	5
Davies Place	1	1
Devon Place	1	1
Devon Street	1	1	..	2
Dorset Street	1	..	..	..	..	..	..	4	5
Durham Street	1	..	2	4	7
Earl Street..	1	..	5	6
Ferndale Street	1	1	4	6
Ferry Road	1	1	..	..	..	..	2	4
Hereford Street	1	..	..	2	3
Hewell Street	4	..	5	..	9
Holmesdale Street	1	..	3	4	8
Kent Street	1	2	6	9
Knole Street	2	1	3	3
Llanbradach Street	1	..	1
Llanmaes Street	1	1	..	6	8
Lucknow Street	1	..	1
Ludlow Street	1	1
Newport Street	1	1	2
North Street	1	..	..	4	5
North Clive Street	1	2	2	5
Oakley Street	1	..	5	6
Paget Street	1	1	1	5	8
Penarth Road	1	..	4	7	12
Penhevad Street	2	3	5
Pentre Street	1	1
Pentrebanes Street	3	3
Redliver Street	1	..	..	2	3
Rookwood Street	1	1
Rudry Street	1	1
Rutland Street	1	..	..	1	2
Saltmead Road	2	1	6	10
Sanatorium	2	4	..	6	..	..	..	..	12
Seven Oaks Street	2	..	2
Sloper Road	1	1
Somerset Street	1	..	1	..	1	3	6
Stockland Street	1	..	2	3	6
Stoughton Street	1	..	4	3	8
St. Faga's Street	2	..	..	2	4
Taff Embankment	1	1	2
Thomas Street	2	..	1	4	7
Tynant Street	1	..	..	..	1
Virgil Street	1	..	..	1	2
Warwick Street	1	1	2
Wedmore Road	1	1	1	2	5
York Place	1	..	..	..	1
Totals	3	6	5	6	37	27	60	158	302

PARK WARD.

NAME OF STREET.	Small-pox.	Measles.	Scarlet Fever.	Diphtheria.	Whooping Cough.	Typhoid Fever.	Diarrhoea.	Phthisis.	Respiratory Diseases.	Other Causes.	Total.
Albany Road	1	1	..	3	5
Alfred Street	2	2
Angus Street	1	..	..	2	1	1	5
Arabella Street	1	10	11
Arran Street	1	2	3	3
Bangor Street	1	1
Bedford Street	1	..	2	1	2	7	13
Byron Street	1	..	..	1	1	5	8
City Road	1	1	8	10
Clive Place	2	2
Crofts Street	1	..	1	1	3
Crwys Road	1	..	1	..	2
Cyfartha Street	1	5	6
Dalcross Street	1	..	1
Diana Street	1	..	..	..	..	1	3	5
Donald Street	2	3	6	11
Elm Street	1	1	3	5
Essich Street	1	1
Glenroy Street	1	..	2	1	1	4	9
Gordon Road	1	..	..	..	1	2
Inverness Place	1	..	..	..	1	2	5	9
Keppoch Street	9	9
Kincraig Street	1	..	1
Lily Street	2	..	2
Lochaber Street	1	1	2
Mackintosh Place	1	2	3	6
Milton Street	1	..	1	3	5
Montgomery Street	1	..	1	2
Moy Road	2	4	6
Newport Road	4	4
Ninian Road	1	3	4
Northcote Street	1	1	1	3
Oxford Street	1	1
Parade, The	1	1
Penylan	2	2
Penylan Place	1	..	..	..	..	1	2
Plasnewydd Road	1	..	1	3	5
Richmond Crescent	1	1
Richmond Road	1	..	2	4	6	13
Rose Street	2	2
Russell Street	1	..	1	..	2
Shakespeare Street	5	5
Strathnairn Street	6	6
St. Peter Street	1	1	2
Talworth Street	4	4
Tavistock Street	1	..	1	2
Treharris Street	1	..	..	..	2	6	9
Tulloch Street	2	..	1
Upper Kincraig Street	1	..	1	1	3
Vere Street	1	1
Walk, The	2	2
Wellfield Road	1	..	..	..	..	2	3
Werfa Street	1	..	1
West Grove	1	1
Wordsworth Avenue	1	1
Totals	2	7	2	11	18	43	148	231

SPLOTT WARD.

NAME OF STREET.	Small-pox.	Measles.	Scarlet Fever.	Diphtheria.	Whooping Cough.	Typhoid Fever.	Diarrhoea.	Phthisis.	Respiratory Diseases.	Other Causes.	Total.
berdovey Street	1	2	3
berystwith Street	2	2
deline Street	2	4	10	16
ridgend Street	4	4
urnaby Street	1	..	..	..	1	1	3
erphilly Street	1	1	1	3
ameron Street	1	1	2
arlisle Street	3	4	8	15
ornelia Street	1	3	2	6
oveny Street	2	1	1	4
laine Street	3	3
nid Street	1	3	4
yre Street	3	3	6
abershon Street	1	1	6	8
inton Street	1	..	..	1
oward Place	1	1	2
oward Street	1	..	1	..	2
anet Street	2	..	2	..	2	5	11
ascelles Road	1	1
ayard Street	1	2	3
lanelly Street	2	..	5	4	12
larion Street	1	..	6	7
lenelaus Street	1	..	1	..	2
ilford Street	3	3
loorland Road	2	..	..	..	4	7	13
rdell Street	5	1	1	9	16
ontypridd Street	2	..	2	4	8
ortmanmoor Road	2	..	2	11	15
ailway Street	1	..	3	2	4	9	19
anquahar Street	1	1	2
eymour Street	1	1	2	4
ingleton Road	1	1
plott Road	2	2	2	6
wansea Street	2	4	6
winton Street	2	2
enby Street	1	..	..	3	4
niversity Place	1	..	..	1	2
Valker Road	1	..	..	..	1	..	1	3	6
Vilson Street	1	1	2
Vimberne Street	1	..	4	2	7
Totals	1	..	..	6	..	22	19	57	131	236

INFECTIOUS DISEASES.—The 2,618 deaths from all causes included 248 from the principal infectious diseases, distributed during each quarter of the year 1906 as follows:—

	1st Quarter	2nd Quarter	3rd Quarter	4th Quarter
Measles	1	..	1	..
Whooping Cough ..	19	27	11	9
Diphtheria	6	2	2	3
Scarlet Fever .. ..	..	..	1	2
Enteric Fever	4	3	4	2
Diarrhœa	8	7	110	26
Totals	37	40	128	43

The 248 deaths from these diseases were equivalent to an annual death-rate of 1.34 per 1,000 persons living, as compared with 1.14, the rate in 1905, and with 2.10, the average rate in the ten years 1896—1905.

The death-rate from these diseases in England and Wales in 1906 was as follows:—
Death-rate per 1,000

England and Wales	1.73
76 Great Towns	2.24
142 Smaller Towns	1.71
England and Wales, less the 218 towns	1.18

In Cardiff the death-rate from this group of diseases in the several Registration Sub-district was as follows:—

East Cardiff	1.71 per 1,000
Central „	1.05 „
West „	1.45 „

The following Table shows the death-rate per 1,000 of the population in each year from Zymotic Diseases during the years 1878—1906:—

TABLE XIV.

	Small Pox.	Measles.	Scarlet Fever.	Whooping Cough.	Diph- theria.	Typhoid Fever.	Diarrhœa.
1878	0.01	0.03	0.12	0.89	0.15	0.22	0.92
1879	0.00	0.12	0.53	0.24	0.11	0.23	0.40
1880	0.01	0.80	0.34	0.92	0.11	0.16	1.18
1881	0.02	0.01	0.23	0.67	0.13	0.20	0.58
1882	0.01	0.36	0.75	0.42	0.30	0.16	1.24
1883	0.01	0.12	0.04	0.74	0.24	0.38	0.81
1884	0.08	0.88	1.36	0.33	0.37	0.36	1.66
1885	0.02	2.04	0.26	1.21	0.40	0.21	1.00
1886	0.00	0.16	0.16	0.45	0.13	0.62	1.62
1887	0.10	0.59	0.10	0.44	0.19	0.15	1.05
1888	0.03	0.99	0.29	0.47	0.07	0.31	0.75
1889	0.00	0.36	0.13	0.70	0.07	0.25	0.66
1890	0.00	0.55	0.16	0.32	0.12	0.19	1.04
1891	0.00	0.42	0.26	0.68	0.12	0.19	0.39
1892	0.00	0.42	0.63	0.33	0.26	0.17	0.85
1893	0.00	0.68	0.28	0.28	0.68	0.13	0.92
1894	0.00	0.07	0.05	0.82	0.42	0.05	0.30
1895	0.00	0.28	0.05	0.34	0.32	0.09	1.01
1896	0.01	0.23	0.19	0.66	0.37	0.08	0.73
1897	0.00	0.44	0.11	0.21	0.59	0.13	0.79
1898	0.00	0.28	0.05	0.24	0.83	0.11	0.83
1899	0.00	0.06	0.01	0.64	0.38	0.12	0.90
1900	0.01	0.80	0.06	0.25	0.50	0.15	0.41
1901	0.00	0.01	0.17	0.52	0.47	0.06	0.45
1902	0.00	1.08	0.21	0.56	0.52	0.05	0.32
1903	0.01	0.15	0.18	0.15	0.20	0.08	0.47
1904	0.00	0.36	0.14	0.34	0.17	0.05	0.73
1905	0.00	0.44	0.02	0.21	0.12	0.04	0.27
1906	0.00	0.01	0.01	0.35	0.07	0.07	0.82

TABLE XV.

The following Table shows the number of cases of infectious diseases notified in the Cardiff Urban Sanitary District since the adoption of the Infectious Diseases Notification Act, 1889:—

	1890	1891	1892	1893	1894	1895	1896	1897	1898	1899	1900	1901	1902	1903	1904	1905	1906
Small-pox ..	..	9	5	4	10	1	45	7	..	..	4	8	2	65	11	24	2
Diphtheria ..	63	67	155	462	326	229	296	512	940	628	706	724	686	431	389	316	330
Membranous Croup }	9	3	9	17	17	19	10	4	20	12	8	10	15	7	17	11	3
Scarlet Fever	335	685	1,851	816	577	484	874	758	332	184	383	1,362	1,433	963	658	362	776
Erysipelas	150	130	118	103	62	79	74	117	80	94	95	73	69	100	40	39	77
Typhus Fever	..	..	..	41	1	..	1	..	..	..	4	..	..	6	..	..	..
Erysipelas ..	45	52	95	152	135	132	134	163	133	176	106	152	169	145	112	133	117
Septicæmic Fever }	4	10	12	24	19	17	21	12	18	13	15	16	13	20	12	14	17
Continued Fever }	2	..	3	2	3	5	7	7	6	8	5	3	7	5	2	3	1
Totals ..	608	956	2,248	1,621	1,150	966	1,462	1,580	1,529	1,115	1,326	2,348	2,394	1,742	1,241	902	1,323

From the foregoing Tables it will be seen that the mortality from infectious diseases in Cardiff was low as compared with previous years. During the first and second quarters of the year the death-rate from whooping cough was high. The deaths from this disease during that period being equivalent to 59.7 per cent. of the total deaths from infectious diseases. In the third quarter of the year, diarrhoea, as usual, proved the most fatal amongst these diseases, causing 110 deaths out of a total of 128 from all the infectious diseases. In the fourth quarter, diarrhoea caused 60 per cent. of the total deaths from these diseases. The fatality amongst other infectious diseases was unusually low during the year.

During the year 959 houses and 13,880 articles of bedding and clothing were disinfected, and 100 articles of bedding and clothing were destroyed.

MEASLES.—Two deaths from measles were registered during the year, corresponding to an annual death-rate of 0.01 per 1,000 persons living. Both deaths occurred amongst children under one year of age. The average death-rate from measles during the 10 years 1896—1905 was 0.42 per 1,000.

SCARLET FEVER.—The fatality from this disease was again low. The three deaths which occurred during the year being equivalent to an annual death-rate of 0.01 per 1,000 persons living, as compared with 0.02, the rate in 1905, and with 0.11, the average death-rate during the 10 years 1896—1905. The mortality from scarlet fever throughout the country was as follows:—

	Death Rate.	
England and Wales	..	0.10 per 1,000
76 Great Towns	..	0.12 ..
142 Smaller Towns	..	0.09 ..
Cardiff	..	0.01 ..

The number of cases of scarlet fever notified during the year 1906, amounted to 776, distributed in Registration Sub-districts during each quarter of the year, as follows:—

			1st Quarter.	2nd Quarter.	3rd Quarter.	4th Quarter.
East Cardiff	..	..	66	68	59	91
Central „	..	..	37	61	42	46
West „	..	..	29	35	82	160
Totals	..	..	132	164	183	297

The fatality, or proportion of deaths from scarlet fever to cases of the disease notified, amounted to 0.4 per 1,000. The disease was generally of a very mild type. The fatality of the cases during the year 1906 being the lowest since the first record of notified cases in 1890.

Of the cases notified, 573, or 74 per cent., were removed to the City Isolation Hospital.

TABLE XVI.

SCARLET FEVER.

Year.	Population.	No. of Cases Notified.	Attack rate per 1,000.	No. of Deaths.	Death rate per 1,000.	Percentage Removed to Hospital.	Mortality per cent. of Cases Notified.
1890	117,012	335	2.86	19	0.16	—	5.6
1891	130,283	685	5.25	35	0.27	—	5.0
1892	132,895	1,851	13.17	87	0.65	13	4.7
1893	136,168	816	6.00	39	0.28	22	4.7
1894	139,519	577	4.13	8	0.05	31	1.3
1895	142,958	484	3.38	8	0.05	43	1.6
1896	146,479	874	5.96	28	0.19	48	3.2
1897	150,087	758	5.05	17	0.11	50	2.2
1898	153,783	332	2.15	8	0.05	56	2.4
1899	157,414	184	1.16	3	0.01	66	1.6
1900	161,452	383	2.37	11	0.06	65	2.8
1901	165,308	1,362	8.23	29	0.17	47	2.1
1902	168,909	1,433	8.42	36	0.21	48	2.1
1903	172,598	963	5.57	32	0.18	63	3.7
1904	176,313	658	3.73	25	0.14	72	3.3
1905	180,054	362	2.00	4	0.02	75	1.1
1906	183,823	776	4.22	3	0.01	74	0.4

DIPHTHERIA AND MEMBRANOUS CROUP.—Thirteen deaths were registered from these diseases, giving an annual death-rate of 0.07 per 1,000 persons living, as compared with 0.12, the rate in 1905, and with 0.41, the average death-rate in the ten years 1896—1905. The mortality was therefore exceedingly low, and was in fact, the lowest recorded since 1890.

The mortality from diphtheria throughout the country in 1906 was as follows:—

	Death-rate.
England and Wales	0.17 per 1000.
76 Great Towns	0.19 „
142 Smaller Towns	0.17 „
Cardiff	0.07 „

The number of cases of diphtheria and membranous croup notified in Cardiff during 1906 amounted to 333, as compared with 327 in 1905. The fatality, or proportion of deaths to cases notified, during the year was 3.9 per cent., and the number of cases removed to the City Isolation Hospital was 186, or 56 per cent. of the cases notified.

Of late years the type of diphtheria seems to have altered considerably. During the three years 1890-92, the fatality from diphtheria amounted to 22.0 per cent. of the cases notified, whereas during the three years 1904-6, this fatality was reduced to 6.3 per cent.

To some extent this is due to improved methods of diagnosis, effected by the bacteriological examination of exudations from the throats of persons suspected to be suffering from the disease. Cases are notified as diphtheria, which formerly would have been classed as simple tonsillitis; the proportion of deaths to cases notified is in this way reduced. Improved methods of treatment, as by the antitoxin serum, and the larger proportion of cases removed to the Isolation Hospital, have also operated in the same direction.

The number of notifications and deaths in each quarter of the year in the several Registration sub-districts was as follows:—

		1st Quarter.		2nd Quarter.		3rd Quarter.		4th Quarter.	
		Notifications.	Deaths.	Notifications.	Deaths.	Notifications.	Deaths.	Notifications.	Deaths.
East Cardiff	.. ..	14	—	18	—	24	1	37	2
Central	„ ..	24	2	16	—	12	—	23	1
West	„ ..	32	4	23	2	45	1	65	—
		—	—	—	—	—	—	—	—
Totals	.. ..	70	6	57	2	81	2	125	3

The number of cases of diphtheria and membranous croup notified each year since 1890 is shown in the following table, which also shows the attack rate (or proportion of cases notified per 1,000 persons living), the death-rate per 1,000, and the percentage proportion of deaths to cases notified:—

TABLE XVII.
DIPHTHERIA AND MEMBRANOUS CROUP.

Year.	Population.	No. of Cases Notified.	Attack rate per 1,000.	No. of Deaths.	Death rate per 1,000.	Percentage Removed to Hospital.	Mortality per cent. of Cases Notified.
1890	.. 117,012	.. 72	.. 0.61	.. 15	.. 0.12	.. —	.. 20.8
1891	.. 130,283	.. 70	.. 0.53	.. 16	.. 0.12	.. —	.. 22.8
1892	.. 132,895	.. 164	.. 1.23	.. 36	.. 0.27	.. —	.. 21.9
1893	.. 136,168	.. 479	.. 3.51	.. 93	.. 0.68	.. —	.. 19.4
1894	.. 139,519	.. 343	.. 2.45	.. 59	.. 0.42	.. —	.. 17.2
1895	.. 142,958	.. 248	.. 1.73	.. 46	.. 0.32	.. 3	.. 18.5
1896	.. 146,479	.. 306	.. 2.08	.. 55	.. 0.37	.. 3	.. 17.9
1897	.. 150,087	.. 516	.. 3.43	.. 90	.. 0.59	.. 15	.. 17.4
1898	.. 153,783	.. 960	.. 6.24	.. 129	.. 0.83	.. 21	.. 13.4
1899	.. 157,414	.. 640	.. 4.06	.. 61	.. 0.38	.. 46	.. 9.5
1900	.. 161,452	.. 714	.. 4.42	.. 81	.. 0.50	.. 53	.. 11.3
1901	.. 165,308	.. 734	.. 4.44	.. 78	.. 0.47	.. 47	.. 10.6
1902	.. 168,909	.. 701	.. 4.15	.. 88	.. 0.52	.. 46	.. 12.5
1903	.. 172,598	.. 438	.. 2.53	.. 36	.. 0.20	.. 51	.. 8.2
1904	.. 176,313	.. 406	.. 2.30	.. 31	.. 0.17	.. 47	.. 7.6
1905	.. 180,054	.. 327	.. 1.81	.. 23	.. 0.12	.. 56	.. 7.0
1906	.. 183,823	.. 333	.. 1.81	.. 13	.. 0.07	.. 56	.. 3.9

The fatality from diphtheria falls chiefly upon young children. The number of notifications and the rate of fatality at various age periods in Cardiff during the year is given below:—

Age Period.	Cases Notified.	Deaths.	Proportion of Deaths to Cases Notified.
Under one year	.. 1	.. —	.. —
1—5 years	.. 81	.. 8	.. 9.8 per cent.
5—15 years	.. 174	.. 5	.. 2.8 „
15—25	.. 44	.. —	.. —
25—65	.. 33	.. —	.. —

ENTERIC FEVER.—Thirteen deaths were registered from this disease, corresponding to an annual death-rate of 0.07 per 1,000 persons living, as compared with 0.04, the rate in 1905, and with 0.08, the average rate in the ten years 1896—1905.

The mortality from fever (including typhus and enteric fevers) throughout the country was as follows:—

					Death-rate,
England and Wales	..	..	..	..	0.09 per 1,000
76 Great Towns	..	..	..	..	0.09 „
142 Smaller Towns	..	..	..	..	0.09 „
Cardiff ..	..	..	..	..	0.07 „

In the large towns the death-rates from enteric fever during the year 1906, ranged from 0.01 in Kings Norton, 0.02 in Brighton and in Reading, 0.03 in Croydon, Coventry, Halifax, and in Tottenham, to 0.16 in Nottingham, 0.17 in West Ham, 0.18 in Preston and in West Bromwich, 0.19 in Hull 0.22 in Bolton, and 0.30 in Wigan.

The number of cases of enteric fever notified in Cardiff during 1906 was 77; of these, 53 or 69 per cent. were removed to the Isolation Hospital. 14 of the cases had their origin outside the district.

An examination was made of the sanitary condition and surroundings of the dwellings occupied by the persons attacked with enteric fever, and in 18 instances defective drainage or sanitary defects of some kind were found; these were remedied without delay. Amongst the number of cases notified 5 were associated with other cases of the same disease in the same house. Six amongst the number were definitely ascertained to have eaten somewhat largely of shell-fish.

The number of cases in each year since the Infectious Disease Notification Act came into force is shown in the following table, which shows also the attack rate, or proportion of cases notified per 1,000 persons living, the death-rate per 1,000, and the percentage proportion of deaths to cases notified:—

TABLE XVIII.

ENTERIC FEVER.

Year	Population	No. of Cases Notified	Attack rate per 1,000	No. of Deaths	Death rate per 1,000	Percentage removed to Hospital	Mortality per cent. of cases notified
1890	117,012	150	1.28	23	0.19	—	15.3
1891	130,283	130	0.99	26	0.19	—	20.0
1892	132,895	118	0.88	24	0.18	3	20.3
1893	136,168	103	0.75	18	0.13	12	17.4
1894	139,519	62	0.44	7	0.05	1	11.2
1895	142,958	79	0.55	14	0.09	13	17.7
1896	146,479	74	0.50	13	0.08	28	17.0
1897	150,087	117	0.77	20	0.13	34	17.0
1898	153,783	80	0.52	17	0.11	23	21.2
1899	157,414	94	0.59	19	0.12	52	20.2
1900	161,452	95	0.58	25	0.15	47	26.3
1901	165,308	73	0.44	11	0.06	57	15.0
1902	168,909	69	0.40	9	0.05	68	13.0
1903	172,598	100	0.57	14	0.08	76	14.0
1904	176,313	40	0.22	9	0.05	57	22.5
1905	180,054	39	0.21	8	0.04	58	20.5
1906	183,823	77	0.41	13	0.07	69	16.9

SMALL-POX.—No deaths were registered from this disease during the year 1906.

Two cases were reported under the following circumstances. On 30th April, E. H., 22 years of age, a young girl, living in Cottrell Road, was notified to be suffering from an eruptive fever. On visiting the house, I found her to be suffering from small-pox in a confluent form, about the sixth day of the eruption. On examining the other inmates in the house, I found a sister of the above, M. H., 21 years of age, to be convalescent from small-pox, having been taken ill about the 16th April. On further inquiry, I found that the brother of the above, W. H., 17 years of age, returned home from a sea voyage on the 27th March, having an eruption upon his face and hands, which subsequently appeared to have been small-pox. The steamer upon which he worked as steward's boy entered Barry Dock on that day, and he states that he left the ship immediately on arrival, travelling to Cardiff by rail. Not feeling particularly ill, no doctor was sent for. He mixed freely with his family and infected the two sisters. The infected persons were removed to the Cardiff Small-pox Hospital on the 30th April. The rest of the inmates, and those who had been ascertained to have been in contact with the infection were revaccinated, and no further cases were reported. I communicated the facts of the case to the Barry Port Sanitary Authority.

I am indebted to Mr. Matthews, the Vaccination Officer, for the following return of vaccinations within the City during the year :—

Successfully Vaccinated.	Insusceptible.	Certificates of Conscientious Objection.	Died Unvaccinated.	Postponement by Medical Certificate.	Cases not found.	Unaccounted for.
3,475	20	76	525	101	427	383

DIARRHOEA.—The deaths from diarrhoea, including those from epidemic enteritis, numbered 151, being equivalent to an annual death-rate of 0.82, as compared with 0.27, the rate in 1905, and with 0.64, the average death-rate from diarrhoea during the ten years, 1896—1905.

The mortality throughout the country in the year 1906 was as follows :—

	Death-rate per 1,000.			
England and Wales	0.87
76 Great Towns	1.16
142 Smaller Towns	0.04
Cardiff	0.82

From the above it will be seen that the mortality from diarrhoea was above the average. This was largely due to the higher rate of fatal infantile diarrhoea associated with the very warm weather in August.

The distribution of fatal diarrhoea in Cardiff, according to the season of the year and the various age periods, was as follows :—

TABLE XIX.

1906	Under 1 year	1-5 years	5-15 years	15-25 years	25-65 years	65 years and upwards	TOTAL
First Quarter ..	6	2	..	..	..	..	8
Second „ ..	4	1	..	..	2	..	7
Third „ ..	83	10	11	1	2	3	110
Fourth „ ..	24	2	..	..	..	..	26
TOTALS ..	117	15	11	1	4	3	151

From the preceding table it will be seen that of the 151 deaths from diarrhoea in Cardiff during 1906, 117, or 77.4 per cent., were amongst infants under one year of age. Taking these deaths in monthly periods under one year, it is found that the greatest fatality was between the ages of 3 and 6 months. Some further remarks upon this subject will be found in the special report upon infantile mortality in the appendix to this report.

The following Table shows the deaths in three age periods and the local distribution of fatal cases of infantile diarrhoea during the year 1906:—

TABLE XX.

WARDS	Under 3 months	3-6 months	6-12 months	TOTAL
Central	2	3	1	6
South	2	4	1	7
Cathays	4	2	1	7
Adamsdown	3	5	3	11
Riverside	3	5	4	12
Canton	6	9	3	18
Grangetown	9	12	10	31
Roath	—	2	4	6
Park	3	3	—	6
Splott	2	3	8	13
TOTALS	34	48	35	117

The relation between the temperature of the air, rainfall, and the diarrhoea mortality during the third quarters of the years 1892—1906 is shown in the following table:—

TABLE XXI.

Year.	Death-rate per 1,000.	Mean Temperature.	Rainfall in inches.
1892 ..	2.3 ..	60°.4 ..	12.4
1893 ..	2.5 ..	61°.0 ..	8.9
1894 ..	0.5 ..	57°.0 ..	10.9
1895 ..	2.5 ..	59°.5 ..	9.9
1896 ..	2.4 ..	58°.9 ..	11.3
1897 ..	2.6 ..	59°.3 ..	14.3
1898 ..	2.6 ..	60°.3 ..	5.8
1899 ..	3.2 ..	63°.3 ..	5.3
1900 ..	1.2 ..	59°.7 ..	6.0
1901 ..	1.4 ..	60°.2 ..	11.1
1902 ..	0.8 ..	58°.0 ..	9.7
1903 ..	1.2 ..	58°.3 ..	14.7
1904 ..	2.3 ..	58°.8 ..	10.7
1905 ..	0.8 ..	58°.6 ..	5.3
1906 ..	2.3 ..	59°.5 ..	4.5

The following Table gives the number of deaths and death-rate at all ages from diarrhœa during each week in the third quarters of the years 1902—1906, and shows the influence of meteorological conditions upon this mortality, bearing in mind that the deaths in many cases are not registered until some time after the event. The excess of fatal diarrhœa is therefore closely associated with the higher temperature in August :—

TABLE XXII.

	JULY, AUGUST, AND SEPTEMBER—WEEKS.												
	1	2	3	4	5	6	7	8	9	10	11	12	13
1902.													
Mean Temperature ..	61.8	60.0	59.4	56.5	56.9	59.5	58.2	60.4	57.9	59.1	56.1	53.1	55.0
Rainfall (inches) ..	.57	.19	.77	.71	.38	.96	1.19	1.26	.59	.30	1.35	.35	1.16
Number of Deaths ..	1	4	—	—	1	—	1	2	1	8	3	8	7
Death-rate per 1,000	0.3	1.2	—	—	0.3	—	0.3	0.6	0.3	2.4	0.9	2.4	2.1
1903.													
Mean Temperature ..	60.1	58.6	60.3	58.4	59.4	63.5	57.2	59.8	59.1	53.5	49.7	59.9	58.7
Rainfall (inches) ..	.05	1.73	1.47	1.20	.51	1.49	1.67	1.67	1.42	.97	—	.53	2.06
Number of Deaths ..	1	—	1	2	1	3	8	4	5	6	8	6	8
Death-rate per 1,000	0.3	—	0.3	0.6	0.3	0.9	2.4	1.2	1.5	1.8	2.4	1.8	2.4
1904.													
Mean Temperature ..	60.0	66.8	64.2	63.0	63.1	56.8	57.9	55.0	59.7	55.9	54.9	54.5	52.4
Rainfall (inches) ..	.04	.10	1.08	2.34	.44	.29	1.05	1.70	.52	.54	2.12	.02	.54
Number of Deaths ..	1	3	3	2	8	19	19	24	10	7	1	6	2
Death-rate per 1,000	0.3	0.9	0.9	0.6	2.4	5.6	5.6	7.1	3.0	2.1	0.3	1.8	0.6
1905.													
Mean Temperature ..	61.6	64.4	62.0	63.7	59.9	58.5	60.4	57.2	57.3	59.6	52.8	52.4	51.6
Rainfall (inches) ..	.04	.20	.09	.18	.27	.97	.48	.97	.64	1.23	.05	.16	.06
Number of Deaths ..	—	—	—	3	4	5	6	9	5	2	3	2	1
Death rate per 1,000	—	—	—	0.9	1.2	1.4	1.7	2.6	1.4	0.6	0.9	0.6	0.3
1906.													
Mean Temperature ..	58.6	57.0	59.0	61.1	62.1	63.4	59.7	62.8	63.7	62.8	57.0	53.9	53.0
Rainfall (inches) ..	.01	.36	.23	.05	.91	.20	1.02	.78	—	.09	.89	.02	—
Number of Deaths ..	5	1	1	1	2	4	5	5	16	18	23	15	14
Death-rate per 1,000	1.4	0.3	0.3	0.3	0.6	1.1	1.4	1.4	4.5	5.1	6.5	4.2	3.9

TUBERCULOSIS.—The deaths from all forms of tuberculosis during the year 1906 amounted to 317, including 222 from pulmonary consumption or phthisis. The mortality from phthisis was equal to an annual death-rate of 1.20 per 1,000, the highest rate of any single disease during the year.

During the ten years 1896-1905 the average death-rate from phthisis amounted to 1.28 per 1,000. The mortality from phthisis in Cardiff since the year 1880 is shown in the following Table :—

Year.	Death-rate per 1,000.	Year.	Death rate per 1,000.
1880	3.21	1893	1.68
1881	2.96	1894	1.62
1882	2.86	1895	1.67
1883	2.67	1896	1.38
1884	2.97	1897	1.99
1885	3.58	1898	1.32
1886	2.78	1899	1.32
1887	2.72	1900	1.25
1888	2.80	1901	1.05
1889	2.79	1902	1.29
1890	3.18	1903	1.19
1891	2.78	1904	1.36
1892	1.82	1905	1.28
		1906	1.20

The measures introduced in the year 1901 with the object of preventing the spread of consumption have been continued. The objectionable and dangerous practice of spitting in public places and vehicles has now become an offence punishable by fine under the provisions of two local bye-laws. Under the Tramways Act, 1870, a bye-law has been made, and came into operation during the year 1903 prohibiting, under a penalty, spitting in or on any car, and on the 1st December, 1904, a bye-law came into force, made under the powers of Sec. 23 of the Municipal Corporation Act, 1882, prohibiting spitting on the floor, side, or wall of any public carriage or of any public hall, public waiting room or place of public entertainment, under a penalty not exceeding £5.

In March, 1903, the Sanitary Authority appointed a Woman Inspector, Miss Hoyle, whose duty it is to visit all cases of phthisis notified to the Medical Officer of Health, and to report to him on printed form the circumstances connected with each case.

A system of voluntary notification of phthisis has been in operation in the City since the year 1901; medical practitioners being invited to notify cases coming under their care, upon terms similar to those in the Infectious Disease Notification Act. On the whole, this system has proved of service, those cases being notified in which the medical practitioner considers that the assistance of the officers of the Sanitary Authority would be desirable. Each case is visited immediately after the receipt of the notification, and the visit is repeated when necessary. The consumptives and their families are instructed personally, and by means of pamphlets, in the precautions necessary for preventing the spread of infection, and at the request, or with the consent of the medical man attending the case, some of the patient's sputum is taken to the Public Health Laboratory for the purpose of diagnosis, the bacteriological examination in all notified cases of phthisis being performed free of charge. In such cases also much good is effected by an inquiry into the sanitary condition of the premises occupied by the consumptives, as defects are remedied without delay.

In the event of a death from phthisis being returned by the Registrar, a letter is sent to the occupier of the house in which the death occurred, offering disinfection of the premises and of infected articles. Disinfection of premises and articles was carried out free of charge by the Sanitary Authority in 128 cases.

During the year 1906, 141 notifications of phthisis were received ; of these 85 were males and 56 were females. Of the males, 35 were inmates of the Union Infirmary, and 1 was in receipt of out-door relief ; of the females, 8 were inmates of the Union Infirmary, and 2 were in receipt of out-door relief.

Bacteriological examinations of sputum were made in 67 cases ; 43 gave positive results, showing the presence of tubercle bacilli, and 24 gave negative results. The notified cases of phthisis were visited by the Woman Inspector, Miss Hoyle, and the results of her inquiries are given below.

Occupation of the patients :—

MALES.

Not stated	40	Commercial Traveller ..	1
Labourers	8	Machinist	1
Seamen	7	Club Steward	1
Clerks	5	School Attendance Officer ..	1
Coal Trimmers	3	Hawker	1
Ship Stewards	2	Mason	1
Plumbers	2	Tram Conductor	1
Scholars	2	Ship Carpenter	1
Coal Hawker	1	Scavenger	1
Lithographer	1	Manager	1
Tailor	1	Shunter	1
Carpenter	1	Timber Measurer	1

FEMALES.

Housewives	26	Typist	1
Not stated	13	Midwife	1
No occupation	2	Hawker	1
Domestic Servants ..	2	Bottle Sorter	1
Dressmakers	2	Seamstress	1
Charwomen	2	Bookbinder	1
Packer	1	Paper-bag Maker	1
Scholar	1		

In some cases it was possible to discover the probable source of infection. This will be seen in the following Table, which gives the list of relatives of patients visited who died from phthisis :—

Ref. No. in Register	Died from Phthisis.	Ref. No. in Register	Died from Phthisis.
17—	Brothers.	94—	Sister.
19—	Brother and sisters	100—	Sister.
29—	Brothers.	105—	Sister.
33—	Sister	114—	Mother.
47—	Sister and uncle.	119—	Grandmother.
48—	Husband.	124—	Brother.
63—	Husband, father, brother and sister.	128—	Father.
69—	Brother and uncle.	131—	Husband.
73—	Brothers.	138—	Brothers.
77—	Brothers.	142—	Brother.
86—	Daughter.	144—	Brother.
92—	Mother, brothers and sisters.		

CARDIFF SANATORIUM.

The following Report of the Medical Superintendent shows that during the year 1906, 908 cases of infectious disease were under treatment, as compared with 618 in the year 1905.

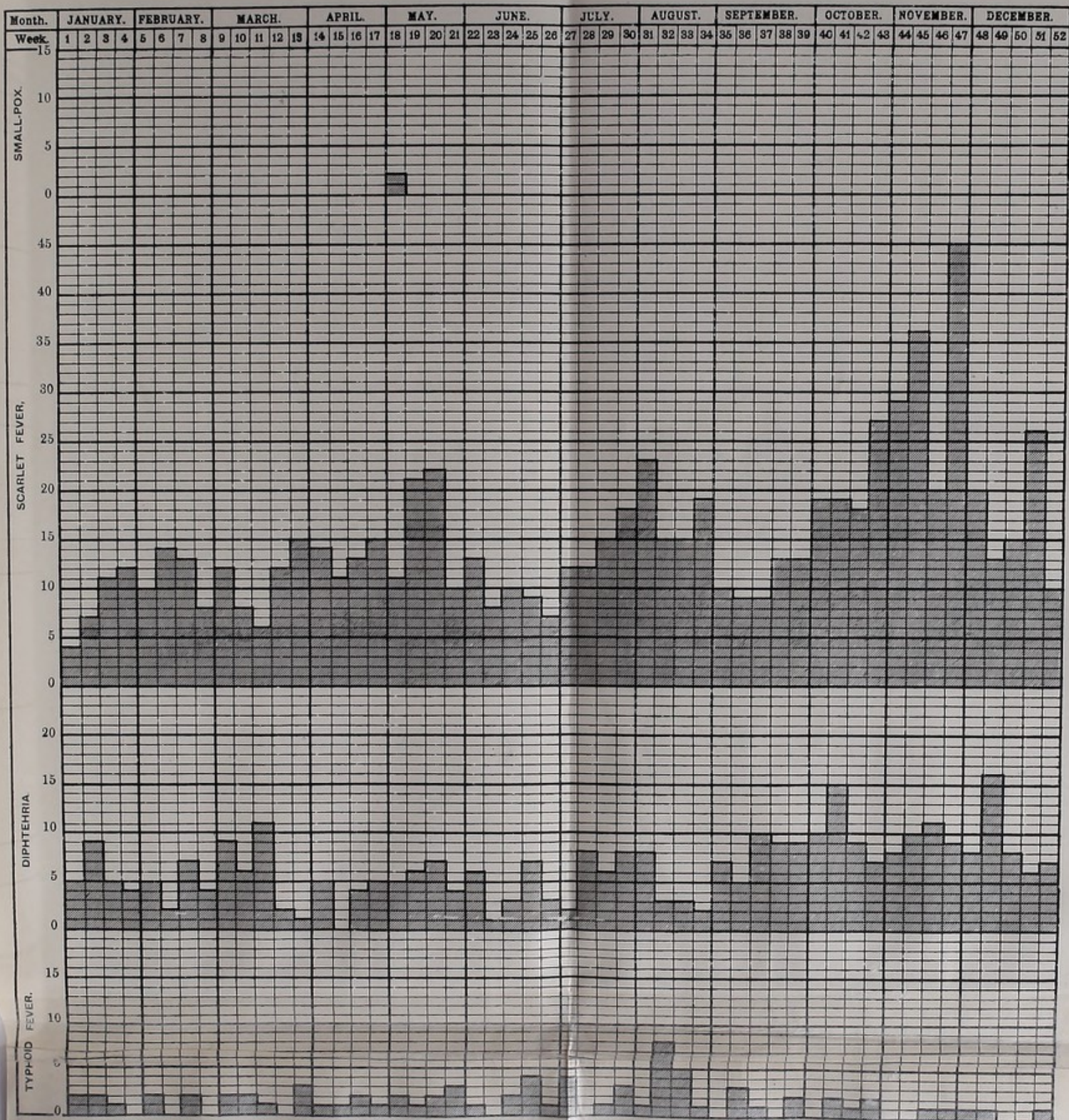
	0 to 5 years.	5 to 15 years.	15 to 25 years.	25 to 35 years.	35 to 45 years.	45 to 55 years.	55 to 65 years.	Totals.
Remaining in Hospital 31st Dec., 1905 :								
Scarlet Fever	17	30	2	..	..	..	..	49
Enteric Fever .. .. .	..	1	1	1	..	..	..	3
Diphtheria	3	6	2	1	..	..	..	12
Small-pox .. .. .	..	..	..	..	..	..	1	1
Totals	20	37	5	2	..	..	1	65
Admitted during the year 1906—								
Scarlet Fever	178	340	40	13	3	..	..	574
Enteric Fever	3	16	24	17	3	3	1	67
Diphtheria	40	106	23	15	4	1	..	189
Small-pox .. .. .	..	..	8	2	..	..	..	10
Other Diseases .. .. .	..	..	1	..	2	..	..	3
Totals	221	462	96	47	12	4	1	843
Totals under treatment in 1906 ..	241	499	101	49	12	4	2	908
Of the above there were discharged—								
(a) Recovered—								
Scarlet Fever	156	293	35	11	3	..	..	498
Enteric Fever	3	15	19	16	3	2	1	59
Diphtheria	37	93	23	16	4	1	..	174
Small-pox .. .. .	..	..	4	1	..	..	1	6
Other Diseases .. .. .	..	..	1	..	2	..	..	3
Totals	196	401	82	44	12	3	2	740
(b) Died—								
Scarlet Fever	2	..	..	..	..	..	..	2
Enteric Fever .. .. .	..	2	3	1	..	1	..	7
Diphtheria	4	1	..	..	..	..	..	5
Small-pox .. .. .	..	..	2	..	..	..	..	2
Other Diseases .. .. .	..	..	..	..	..	..	..	..
Totals	6	3	5	1	..	1	..	16
Remaining in Hospital 31st Dec., 1906 :								
Scarlet Fever	37	77	7	2	..	..	..	123
Enteric Fever .. .. .	..	..	3	1	..	..	..	4
Diphtheria	2	18	2	..	..	..	..	22
Small-pox .. .. .	..	..	2	1	..	..	..	3
Other Diseases .. .. .	..	..	..	..	..	..	..	..
Totals	39	95	14	4	..	..	..	152
Totals under treatment in 1906 ..	241	499	101	49	12	4	2	908

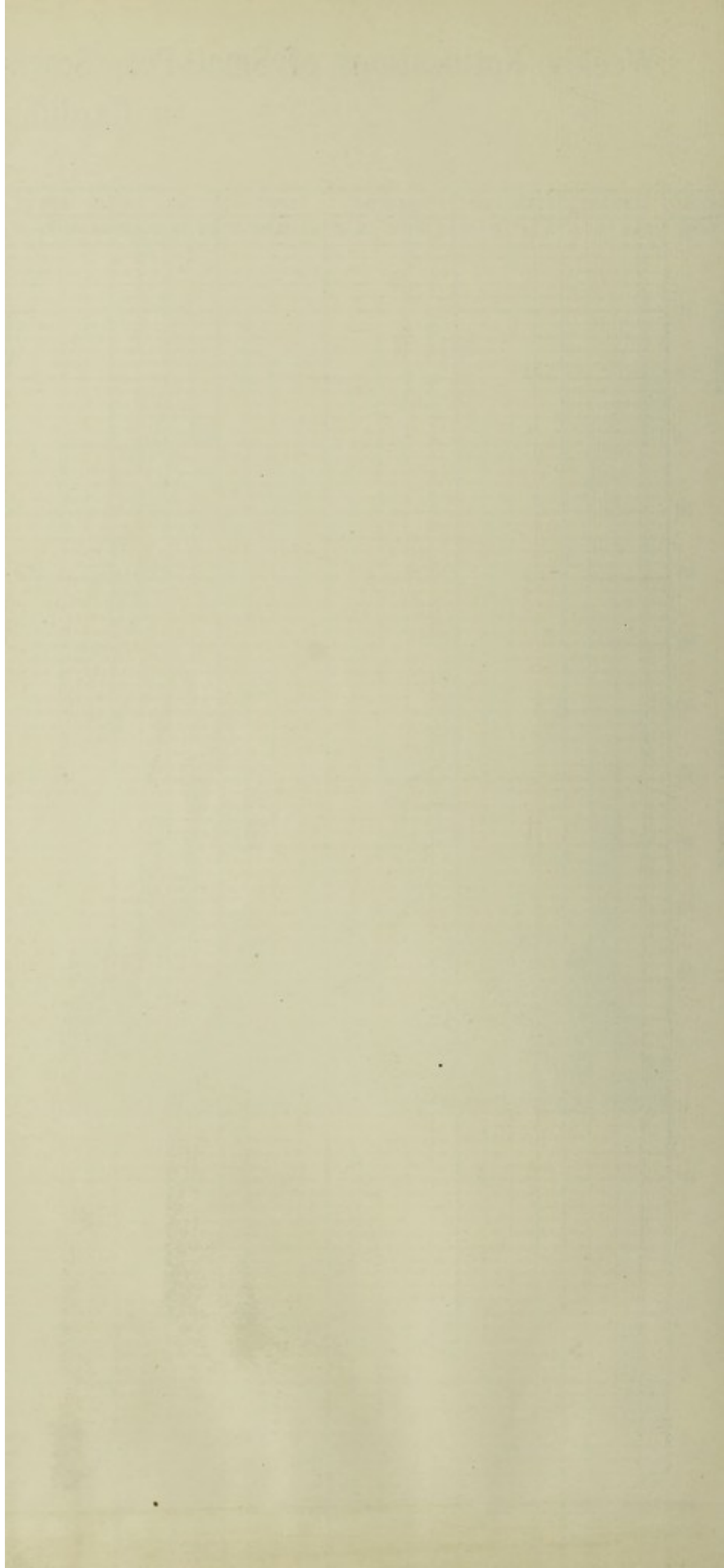
Mortality per cent. under treatment—

Scarlet Fever ..	0.32	Diphtheria ..	2.5
Enteric Fever ..	10.0	Small-pox ..	18.2

B. W. BROAD, M.B., *Medical Superintendent.*

Weekly Notifications of Small-Pox, Scarlet Fever, Diphtheria and Typhoid Fever
in Cardiff during 1906.





SUMMARY OF WORK PERFORMED BY THE OFFICERS OF THE MEDICAL OFFICER OF HEALTH'S
DEPARTMENT DURING THE YEAR 1906.

The following Tables show the nature and extent of the administrative work of the Department. This work is carried out by Mr. D. Vaughan, Chief Inspector of Nuisances, and his Assistants, acting under the supervision of the Medical Officer of Health, and I have pleasure in recording that the Inspectors have performed their difficult duties in a satisfactory manner.

For the purposes of inspection, the City is divided into six districts, as follows :—

District No. 1—comprising	..	Canton Ward	..	} W. Fisher, Cert. Roy. San. Inst.
		Riverside Ward	..	
" No. 2 "	..	Sploott Ward	..	} S. Jeffery, Cert. Roy. San. Inst.
		part of Adamsdown Ward	..	
" No. 3 "	..	Park Ward	..	} F. Glover, Cert. Roy. San. Inst.
		part of Cathays Ward	..	
" No. 4 "	..	Central Ward	..	} S. Evans, Cert. Roy. San. Inst.
		part of Cathays Ward	..	
		part of South Ward	..	
" No. 5 "	..	Grangetown Ward	..	} T. W. Warren, Cert. Roy. San. Inst.
		part of South Ward	..	
" No. 6 "	..	Roath Ward	..	} J. Strange, Cert. Roy. San. Inst.
		part of Adamsdown Ward	..	

HOUSE INSPECTION DURING THE YEAR 1906.

CENTRAL WARD.

NAME OF STREET.	Number of Houses Inspected.	Defective Drains.	Choked Drains.	Defective Water Closets.	Defective Traps.	Sewery Sinks connected direct with Drain.	Number of Water Closets.	Inside Water Closets not ventilated.	Outside Water Closets not ventilated.	Outside Water Closets not supplied with Water	Dampness of Premises.	Other Nuisances.
Charlotte Street	4	..	..	..	..	..	4	..	4	..	..	..
David Street	24	..	..	..	..	1	23	..	20	18	1	18
French Cottages (Love Lane)	4	..	..	..	..	..	3	..	3	..	..	1
Homfray Street	26	..	..	..	..	..	25	..	25	10	5	6
Little Frederick Street ..	32	1	1	1	..	..	30	..	27	24	..	15
Love Lane Court	4	..	..	..	..	..	4	..	4	..	..	..
Love Lane	35	..	..	..	..	..	34	..	34	1	1	4
Mary Ann Street	48	..	..	..	..	..	43	..	39	28	1	18
Peter's Court (Love Lane)	2	..	..	..	..	..	2	..	2	..	..	..
Rodney Street	18	6	..	4	1	..	18	..	18	17	3	9
Ruperra Street	15	..	..	..	..	..	15	..	15	11	..	..
Stanley Street	2	..	..	..	..	..	2	..	2	2	..	..
Tredeggar Street	47	2	..	..	..	..	45	..	42	25	3	15

SOUTH WARD.

NAME OF STREET.	Number of Houses Inspected.	Defective Drains.	Choked Drains.	Defective Water Closets.	Defective Traps.	Sewery Sinks connected direct with Drain.	Number of Water Closets.	Inside Water Closets not ventilated.	Outside Water Closets not ventilated.	Outside Water Closets not supplied with Water	Dampness of Premises.	Other Nuisances.
Allen's Arch	5	..	..	..	..	..	Three	trough	closets	..	..	..
Christina Street	59	..	1	3	..	..	60	..	59	32	25	22
North Church Street ..	29	..	..	..	2	..	32	..	29	18	..	3

RIVERSIDE WARD.

NAME OF STREET.	Number of Houses Inspected.	Defective Drains.	Choked Drains.	Defective Water Closets.	Defective Traps.	Sewery Sinks connected direct with Drain.	Number of Water Closets.	Inside Water Closets not ventilated.	Outside Water Closets not ventilated.	Outside Water Closets not supplied with Water	Dampness of Premises.	Other Nuisances.
Halket Street	28	..	..	1	2	..	28	..	28	26	..	10
Severn Road	81	..	5	3	1	..	94	..	80	42	..	22
Wyndham Crescent ..	101	1	1	5	12	..	113	..	107	71	..	25

ADAMSDOWN WARD.

NAME OF STREET.	Number of Houses Inspected.	Defective Drains.	Choked Drains.	Defective Water Closets.	Defective Traps.	Seullery Sinks connected direct with Drain.	Number of Water Closets.	Inside Water Closets not ventilated.	Outside Water Closets not ventilated.	Outside Water Closets not supplied with Water	Dampness of Premises.	Other Nuisances.
Augusta Street	52	1	1	4	2	..	52	..	52	51	1	15
Clifton Street	148	5	4	5	2	..	152	..	129	98	1	6
Clyde Street	24	..	..	..	..	..	24	..	24	22	..	..
Cycle Street	29	..	..	..	..	..	29	..	29	29	..	2
Moirs Place	28	..	..	2	..	..	31	..	23	21	..	3
Moirs Street	33	..	..	5	..	..	34	..	30	29	..	6
Moor Street	24	..	..	1	..	..	24	..	24	24	..	5
Platinum Street	18	..	..	..	..	..	18	..	18	18	..	18
Prince Leopold Street	28	4	..	1	..	..	28	..	28	27	..	3
Sun Street	7	..	..	..	..	..	7	..	7	7	..	..
Tyndall Street	54	1	1	4	..	..	58	..	52	46	14	24
Zinc Street	34	2	..	2	..	..	34	..	34	34	..	4

CANTON WARD.

NAME OF STREET.	Number of Houses Inspected.	Defective Drains.	Choked Drains.	Defective Water Closets.	Defective Traps.	Seullery Sinks connected direct with Drain.	Number of Water Closets.	Inside Water Closets not ventilated.	Outside Water Closets not ventilated.	Outside Water Closets not supplied with Water	Dampness of Premises.	Other Nuisances.
Carmarthen Street	35	1	..	1	..	..	35	..	33	32	..	8
Ethel Street	108	..	3	5	..	..	107	..	107	107	..	66
Glamorgan Street	84	3	..	8	..	..	84	..	84	84	..	27
Gray Street	55	..	2	6	..	..	56	..	56	41	..	23
Llandaff Road	64	1	1	7	10	..	74	..	34	44	..	13
Market Road	21	..	1	..	4	..	22	..	21	21	..	1
Nevern Road	107	1	2	3	9	..	122	..	104	78	..	23

ROATH WARD.

NAME OF STREET.	Number of Houses Inspected.	Defective Drains.	Choked Drains.	Defective Water Closets.	Defective Traps.	Seullery Sinks connected direct with Drain.	Number of Water Closets.	Inside Water Closets not ventilated.	Outside Water Closets not ventilated.	Outside Water Closets not supplied with Water	Dampness of Premises.	Other Nuisances.
Bradley Street	40	4	3	3	..	..	40	..	40	40	..	12
Emerald Street	58	..	3	5	1	..	58	..	58	58	1	10
Helen Street	70	..	1	2	..	..	70	..	70	70	..	14
Nora Street	74	3	1	2	2	..	74	..	72	71	..	12

CATHAYS WARD.

NAME OF STREET.	Number of Houses Inspected.	Defective Drains.	Choked Drains.	Defective Water Closets.	Defective Traps.	Seullery Sinks connected direct with Drain.	Number of Water Closets.	Inside Water Closets not ventilated.	Outside Water Closets not ventilated.	Outside Water Closets not supplied with Water	Dampness of Premises.	Other Nuisances.
Cairns Street	198	10	5	1	..	..	198	..	198	197	25	91
Coburn Street	109	2	2	2	3	..	111	..	106	105	16	40
Daniel Street	61	3	1	2	..	..	61	..	61	61	13	13
Darren Street	23	..	..	..	..	..	23	..	23	23	2	2
Fitzroy Street	25	..	..	..	..	..	25	1	24	24	4	8
Hirwain Street	52	..	..	..	..	..	52	..	52	52	8	8
Minister Street	20	..	..	..	..	..	20	..	20	20	1	1
Robert Street	72	1	1	1	..	..	72	..	70	70	8	8
Thesiger Street	67	..	1	..	..	..	67	..	67	65	16	21
Treherbert Street	45	..	..	..	..	..	45	..	45	44	4	5
Treorky Street	47	2	2	2	..	..	47	..	47	47	4	4

PARK WARD.

NAME OF STREET.	Number of Houses Inspected.	Defective Drains.	Choked Drains.	Defective Water Closets.	Defective Traps.	Seullery Sinks connected direct with Drain.	Number of Water Closets.	Inside Water Closets not ventilated.	Outside Water Closets not ventilated.	Outside Water Closets not supplied with Water	Dampness of Premises.	Other Nuisances.
Oxford Street	46	1	..	4	..	..	46	..	46	43	5	10
Russell Street	45	4	3	6	..	..	45	..	45	45	9	16
Vere Street	18	..	..	..	..	..	18	..	18	18	4	4

GRANGETOWN WARD.

NAME OF STREET.	Number of Houses Inspected.	Defective Drains.	Choked Drains.	Defective Water Closets.	Defective Traps.	Seullery Sinks connected direct with Drain.	Number of Water Closets.	Inside Water Closets not ventilated.	Outside Water Closets not ventilated.	Outside Water Closets not supplied with Water	Dampness of Premises.	Other Nuisances.
Allerton Street	64	3	3	8	..	..	64	..	64	61	24	40
Compton Street	47	..	..	..	..	..	47	..	47	47	15	15
Monmouth Street	30	..	..	..	..	..	30	..	30	25	8	8
Rutland Street	36	2	..	2	..	..	36	..	36	36	6	8
Saltmead Road	105	2	51	7	..	..	105	..	102	98	14	24
Somerset Street	51	3	4	1	..	..	51	..	51	26	15	21
Stoughton Street	78	1	2	20	..	..	56	..	56	56	33	33

SPLOTT WARD.

NAME OF STREET.	Number of Houses Inspected.	Defective Drains.	Choked Drains.	Defective Water Closets.	Defective Traps.	Scullery Sinks connected direct with Drain.	Number of Water Closets.	Inside Water Closets not ventilated.	Outside Water Closets not ventilated.	Outside Water Closets not supplied with Water	Dampness of Premises.	Other Nuisances.
Aberdovey Street	35	4	2	4	..	..	34	..	34	7	4	10
Aberystwith Street	49	2	4	2	..	..	49	..	49	49	5	12
Bridgend Street	59	..	1	1	..	..	53	..	53	20	16	22
Caerphilly Street	68	..	1	5	..	..	64	..	33	33	4	17
Llanelly Street	75	3	4	4	3	..	67	..	67	64	4	15
Milford Street	61	2	1	5	1	..	60	1	60	57	15	23
Moorland Road	34	..	..	1	..	..	36	..	..	..	..	1
Pontypridd Street	69	5	2	7	..	..	66	..	66	54	8	48
Singleton Road	38	..	..	3	..	..	39	..	37	10	9	3
Swansea Street	34	..	..	..	..	..	34	..	30	34	4	8
Tenby Street	66	1	..	2	..	..	66	..	64	65	7	18
Wimborne Street	72	5	..	4	1	..	71	..	71	71	18	39

**Report to the Medical Officer of Health of Mr. D. Vaughan, Chief Inspector
of Nuisances and Inspector of Canal Boats, for the year 1906.**

NUISANCES :—

Nuisances inspected	3,604
Notices issued	3,148
Nuisances abated without legal proceedings	3,604
Animals kept so as to be a nuisance	65
Injurious and foul accumulations	317
Nuisances from smoke	22
Defective drainage	749
Drains unstopped and cleansed	259
" trapped and repaired	42
" tested	496
" found defective	250
Foul and offensive w.c.'s cleansed	156
Offensive w.c. abolished	1
Defective apparatus to water closets repaired	50
Water laid on to water closets	7
" " urinals	7
" " dwelling-houses	48
Insufficient ventilation to w.c.	3
Dilapidated houses repaired	1,273
Dirty houses and workshops cleansed and limewashed	96
Insufficient w.c. accommodation	13
Cellar used as a dwelling	2
Overcrowding of dwelling-houses and workshops	27
Houses unfit for human habitation	12

OFFENSIVE TRADES :—

Visits paid to premises	1,086
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SHOPS :—

Butchers and provision shops inspected	5,102
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DAIRIES, COWSHEDS AND MILKSHOPS :—

Number of cowkeepers on register	19
" cows allowed	205
" milksellers on register	599
" cowkeepers registered during the year	2
" milksellers registered during the year	69
" visits paid to cowsheds	415
Notices served to cowkeepers	23
Number of visits paid to milkshops	1,518
Notices served to milksellers	33

DAIRIES, COWSHEDS AND MILKSHOPS.

PARTICULARS OF INSPECTION.	COWSHEDS.	MILKSHOPS.
Total number of inspections	415	1,518
Found in good condition	47	1,485
Water closets, sinks, or drains defective	10	6
Yards badly paved and accumulation of rubbish	16	27
Defective ventilation	2	—
Infectious disease amongst persons employed	1	6

CANAL BOATS.

Number of boats on register	..	..	..	..	27
.. inspections	..	..	..	..	55
.. boats found in good condition	..	..	..	..	44
.. found with defective ventilators	..	..	..	..	8
Water vessels defective	..	..	..	..	2
Verbal notices served and complied with	..	..	..	..	11
Defective roof	..	..	..	..	1

MAGISTERIAL PROCEEDINGS.

					NUMBER OF CASES.	FINES.
						£ s. d.
proceedings under Sale of Food and Drugs Acts	..	..	..	..	24	39 15 0
.. .. Bye-Laws as to Seamen's Lodging Houses	..	..	..	..	1	3 0 0
.. .. Town Police Clauses Act (Sec. 31)	..	..	..	..	69	5 3 6
Totals	..	..	..	..	94	47 18 6

I have the honour to be, Gentlemen,

Your obedient Servant,

EDWARD WALFORD,

MEDICAL OFFICER OF HEALTH.

APPENDIX.

CITY OF CARDIFF.

LOCAL GOVERNMENT BOARD TABLE. TABLE I.
VITAL STATISTICS OF WHOLE DISTRICT DURING 1906 AND PREVIOUS YEARS.

Year.	Population estimated to Middle of each Year.	Births.		Total Deaths Registered in the District.					Total Deaths in Public Institutions in the District.	Deaths of Non-residents registered in Public Institutions in the District.	Deaths of Residents registered in Public Institutions beyond the District.	Nett Deaths at all Ages belonging to the District.						
		Number.	Rate.*	Under 1 Year of Age.			At all Ages					Number.	Rate.*					
				Number.	Rate per 1,000 Births registered.	6	7	8						9	10	11	12	13
1	2	3	4	5	6	7	8	9	10	11	12	13						
1896	146,479	5,591	38.1	923	165	2,826	19.2	364	31	..	2,795	19.0						
1897	150,087	5,279	35.1	796	151	2,568	17.1	303	34	..	2,534	16.8						
1898	153,783	5,520	35.9	870	158	2,684	17.4	312	57	..	2,627	17.0						
1899	157,414	5,309	33.7	976	184	2,951	18.7	321	93	..	2,858	18.1						
1900	161,452	5,198	35.2	730	141	2,745	17.0	314	78	..	2,667	16.5						
1901	165,308	5,206	31.4	775	148	2,671	16.1	352	75	57	2,653	16.0						
1902	168,909	5,278	31.2	769	145	2,909	17.2	486	88	44	2,865	16.9						
1903	172,598	5,250	30.4	645	122	2,503	14.5	487	96	89	2,496	14.4						
1904	176,313	5,208	29.5	751	144	2,704	15.3	458	96	87	2,695	15.2						
1905	180,054	5,140	28.5	607	118	2,485	13.8	442	108	66	2,443	13.5						
Averages of years-1896 to 1905	163,239	5,297	32.4	784	148	2,704	16.5	383	75	..	2,663	16.3						
1906	183,823	5,001	27.2	675	134	2,689	14.6	531	135	64	2,618	14.2						

* Rates in Columns 4, 8, and 13 are calculated per 1,000 of estimated population.

LOCAL GOVERNMENT BOARD TABLE—TABLE II
VITAL STATISTICS OF SEPARATE LOCALITIES IN 1906 AND PREVIOUS YEARS.

NAMES OF LOCALITIES.	CITY OF CARDIFF. (Whole District)				EAST CARDIFF. Registration Sub-District.				CENTRAL CARDIFF. Registration Sub-District.				WEST CARDIFF. Registration Sub-District.			
	Population estimated to middle of each year.	Births registered.	Deaths at all ages.	Deaths under 1 year.	Population estimated to middle of each year.	Births registered.	Deaths at all ages.	Deaths under 1 year.	Population estimated to middle of each year.	Births registered.	Deaths at all ages.	Deaths under 1 year.	Population estimated to middle of each year.	Births registered.	Deaths at all ages.	Deaths under 1 year.
Year.																
1896	146,479	5,591	2,795	923	..	...	...	...	...	...	...	...	...	...	...	...
1897	150,087	5,279	2,534	796	45,282	1,736	643	240	54,184	1,528	909	250	50,051	2,015	982	306
1898	153,783	5,520	2,627	870	47,124	1,811	714	288	54,217	1,610	924	279	51,921	2,089	989	303
1899	157,414	5,309	2,858	976	49,040	1,750	753	307	54,300	1,617	1,009	308	53,861	1,942	1,096	361
1900	161,452	5,198	2,667	730	51,035	1,658	755	214	54,358	1,510	907	229	55,874	2,030	1,005	287
1901	165,308	5,206	2,653	775	53,111	1,667	668	226	54,402	1,572	912	255	57,962	1,967	1,073	294
1902	168,909	5,278	2,865	769	56,613	1,694	733	241	54,541	1,624	1,010	230	60,476	1,960	1,122	298
1903	172,598	5,250	2,496	645	57,013	1,643	633	194	54,299	1,561	853	206	61,339	2,046	1,010	245
1904	176,313	5,208	2,695	751	57,930	1,626	719	224	55,219	1,575	884	218	61,421	2,007	1,092	209
1905	180,054	5,140	2,443	607	58,445	1,634	636	175	55,343	1,536	843	187	61,351	1,970	964	245
Averages of years 1896 to 1905	163,239	5,297	2,663	784	...	...	...	...	...	...	...	...	...	...	...	...
1906	183,823	5,001	2,618	675	59,009	1,554	680	188	55,424	1,541	920	216	62,419	1,906	1,018	271

LOCAL GOVERNMENT BOARD TABLE.

TABLE III.

CASES OF INFECTIOUS DISEASE NOTIFIED DURING THE YEAR 1906.

NOTIFIABLE DISEASES.	CASES NOTIFIED IN WHOLE DISTRICT.						TOTAL CASES NOTIFIED IN EACH LOCALITY.				NO. OF CASES REMOVED TO HOSPITAL FROM EACH LOCALITY.		
	At all Ages.	At Ages—Years.					East Cardiff Regis. Sub-Dist.	Central Cardiff Regis. Sub-Dist.	West Cardiff Regis. Sub-Dist.		East Cardiff Regis. Sub-Dist.	Central Cardiff Regis. Sub-Dist.	West Cardiff Regis. Sub-Dist.
		Under 1.	1 to 5.	5 to 15	15 to 25	25 to 65							
Small-pox	2	..	..	..	2	..	2	..	..	..	2	..	..
Cholera .. ..	..	..	..	..	..	..	..	..	..	..	..	..	..
Diphtheria	330	1	80	172	44	33	93	75	162	87	52	46	87
Membranous Croup	3	..	1	2	..	..	..	..	3	1	..	..	1
Erysipelas	117	4	6	8	6	83	26	43	48	..	..	..	..
Scarlet Fever	776	8	24	449	47	24	284	183	306	208	225	149	208
Typhus Fever .. ..	..	..	..	..	..	..	..	..	..	..	..	..	..
Enteric Fever	77	..	3	20	20	34	19	21	37	26	14	13	26
Relapsing Fever .. ..	..	..	..	..	..	..	..	..	..	..	..	..	..
Continued Fever	1	..	..	..	..	1	..	..	1	..	..	..	..
Puerperal Fever	17	..	..	..	6	11	5	3	9	..	..	..	..
Plague .. ..	..	..	..	..	..	..	..	..	..	..	..	..	..
Totals	1,325	13	338	651	125	186	429	328	566	199	293	199	322

LOCAL GOVERNMENT BOARD TABLE.

TABLE IV.

CAUSES OF, AND AGES AT, DEATH DURING THE YEAR 1906.

CAUSES OF DEATH.	DEATHS IN OR BELONGING TO WHOLE DISTRICT AT SUBJOINED AGES.							Deaths in or belonging to Localities (at all Ages).			Total Deaths in Public Institutions in the District.
	All Ages.	Under 1 year.	1 and under 5.	5 and under 15.	15 and under 25.	25 and under 65.	65 and upwards.	East Cardiff Reg. Sub.-Dis.	Central Cardiff Reg. Sub.-Dis.	West Cardiff Reg. Sub.-Dis.	
Small-pox .. .. .	..	..	..	..	..	..	..	..	..	..	2
Measles	2	..	2	..	..	..	..	2	..	..	..
Scarlet Fever	3	..	3	..	..	..	..	..	..	3	2
Whooping-cough	66	41	21	3	1	..	..	26	22	18	..
Diphtheria and Membranous Croup	13	..	8	5	..	..	..	3	3	7	5
Croup	4	2	2	..	..	..	..	..	2	2	..
Fever { Typhus .. .. .	..	..	..	..	..	..	..	..	..	..	..
Enteric	13	..	..	2	4	7	..	3	3	7	7
Other continued .. .. .	..	..	..	..	..	..	..	..	..	..	..
Epidemic Influenza	30	4	..	1	1	14	10	11	13	6	..
Diarrhœa	151	117	15	11	1	4	3	42	32	77	11
Enteritis	44	30	7	4	..	3	..	17	20	7	1
Puerperal Fever	2	..	..	..	1	1	..	1	..	1	..
Erysipelas	1	..	..	..	..	..	1	..	..	1	..
Other Septic Diseases	16	3	1	..	..	11	1	4	5	7	6
Phthisis	229	5	4	10	38	170	2	50	69	110	52
Other Tubercular Diseases	97	37	26	9	10	15	..	27	39	31	18
Cancer, Malignant Disease	141	..	..	..	1	99	41	38	39	64	54
Bronchitis	183	59	14	4	..	46	60	54	50	79	25
Pneumonia	229	44	54	8	12	88	23	79	71	79	33
Pleurisy	8	1	3	1	..	2	1	1	4	3	4
Other Diseases of Respiratory Organs	23	1	4	1	2	13	2	6	9	8	6
Alcoholism	21	1	..	..	..	18	2	1	14	6	3
Cirrhosis of Liver .. .. .	..	..	..	..	..	..	..	..	..	..	..
Veneral Diseases	18	14	..	..	..	4	..	1	6	11	3
Premature Birth	87	87	..	..	..	..	..	20	29	38	5
Diseases and Accidents of Parturition	17	..	..	..	3	14	..	5	5	7	1
Heart Diseases	310	10	4	9	18	178	91	86	104	120	60
Accidents	102	5	19	8	9	51	10	9	66	27	49
Suicides	17	..	..	..	2	15	..	5	6	6	1
Homicide	1	..	..	..	..	1	..	..	1	..	..
Wilful Murder	1	..	..	1	..	..	..	..	1	..	1
All other causes	789	214	42	33	32	252	216	189	307	293	179
All Causes	2,618	675	229	110	135	1,006	463	680	920	1,018	531

LOCAL GOVERNMENT BOARD TABLE. TABLE V.
INFANTILE MORTALITY DURING THE YEAR 1906.
DEATHS FROM STATED CAUSES IN WEEKS AND MONTHS UNDER ONE YEAR OF AGE.

CAUSE OF DEATH.			Under 1 Week.	1-2 Weeks.	2-3 Weeks.	3-4 Weeks.	Total under 1 Month.	1-2 Months.	2-3 Months.	3-4 Months.	4-5 Months.	5-6 Months.	6-7 Months.	7-8 Months.	8-9 Months.	9-10 Months.	10-11 Months.	11-12 Months.	Total Deaths under One Year.
All Causes.	Certified ..	..	96	46	33	17	192	94	64	67	46	48	28	28	29	32	12	34	674
	Uncertified ..	..	1	..	..	..	1	..	..	..	..	..	..	..	..	..	..	..	1
Common Infectious Diseases.	Small-pox ..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
	Chicken-pox ..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
	Measles ..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
	Scarlet Fever ..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
	Diphtheria : Croup ..	..	..	..	..	..	..	..	..	..	..	..	..	..	1	..	..	1	2
	Whooping Cough ..	..	..	..	..	..	..	5	3	4	2	3	2	5	4	4	1	8	41
Diarrhoeal Diseases.	Diarrhoea, all forms ..	..	..	1	1	1	3	16	16	19	13	13	8	4	5	6	5	9	117
	Enteritis (<i>not Tuberculous</i>) ..	..	1	1	..	..	2	4	1	3	4	4	3	2	2	2	1	2	30
	Gastritis, Gastro-intestinal Catarrh } Premature Birth ..	..	..	..	1	1	1	1	1	2	..	..	..	2	1	..	..	..	9
Wasting Diseases.	Congenital Defects ..	..	6	5	2	1	14	..	1	1	1	..	..	1	..	..	..	..	18
	Injury at Birth ..	..	..	..	..	..	..	1	..	..	..	..	..	..	..	..	..	..	1
	Want of Breast-milk ..	..	..	..	..	..	..	4	1	1	1	1	..	..	..	..	..	..	8
Tuberculous Diseases.	Atrophy, Debility, Marasmus ..	13	14	8	3	38	18	9	8	3	2	3	2	..	..	..	..	..	83
	Tuberculous Meningitis ..	..	..	..	..	..	2	..	1	..	..	2	..	..	2	..	1	8	
	Tuberculous Peritonitis : Tabes Mesenterica }	..	..	1	1	2	..	3	8	3	2	..	2	..	2	..	1	23	
	Other Tuberculous Diseases ..	..	..	..	..	..	..	2	2	1	1	1	1	..	2	..	1	11	
Other Causes.	Erysipelas ..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
	Syphilis ..	..	..	1	1	1	4	..	2	1	4	3	..	..	..	..	..	..	14
	Rickets ..	..	..	..	..	..	..	1	..	..	..	..	1	..	2	..	..	1	5
	Meningitis (<i>not Tuberculous</i>) ..	..	..	..	..	..	..	..	..	..	..	1	..	..	..	2	..	..	3
	Convulsions ..	..	6	6	2	4	18	12	6	..	..	6	..	1	1	2	..	1	47
	Bronchitis ..	..	..	3	5	1	9	10	7	9	6	4	2	3	3	3	..	3	59
	Laryngitis ..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	1	..	1	1
	Pneumonia ..	..	..	2	..	1	3	6	4	5	2	3	3	4	3	4	2	5	44
	Suffocation, overlaying ..	2	..	..	..	..	2	2	..	..	..	..	..	..	..	..	..	..	4
	Other Causes ..	..	10	5	4	2	21	6	5	4	3	5	2	3	6	2	2	1	60
Totals ..			97	46	33	17	193	94	64	67	46	48	28	28	29	32	12	34	675
Births in the year								{		legitimate ..		..		4,829					
								{		illegitimate		..		172					

CLIMATOLOGICAL STATION, ROATH PARK.

METEOROLOGICAL OBSERVATIONS FOR THE YEAR 1906.

MONTH.	BAROMETER.		TEMPERATURE IN SHADE.					EARTH TEMPERATURE.		HYGROMETER.			RAINFALL.				DEATH-RATE per 1,000.	
	Attached Thermometer—Mean.	Mean Barometric Pressure.	Maximum.	Minimum.	Mean of Maximum.	Mean of Minimum.	Mean of Month.	1 foot mean.	4 feet mean.	Dry bulb Mean.	Wet bulb Mean.	Mean Relative Humidity.	Amount in Inches.	Greatest Fall in 24 hours.	Date of Greatest Fall.	Days on which 0.01 or more rain fell.	All Causes.	Zymotic Diseases.
January	55	29.825	54.1	24.4	48.4	34.9	41.6	42.0	45.5	40.7	39.4	89	7.42	0.89	5th	24	14.2	0.4
February	53	29.683	48.9	24.0	44.9	32.3	38.6	39.8	44.1	38.7	37.0	86	3.71	0.60	10th	22	14.4	0.7
March	55	29.902	63.6	24.0	49.0	34.9	41.9	42.7	44.2	42.2	39.7	81	2.92	0.95	10th	15	15.1	1.0
April	57	29.974	67.6	26.0	55.3	35.7	45.5	46.1	45.5	46.8	42.3	69	1.53	0.53	24th	13	16.2	1.2
May	58	29.743	72.6	30.0	58.4	44.1	51.2	52.1	48.6	52.4	49.0	78	4.32	0.97	26th	20	13.9	0.8
June	64	30.014	74.3	40.5	66.1	48.6	57.3	60.2	53.8	59.3	54.9	74	2.73	0.87	28th	11	11.3	0.3
July	65	29.925	78.6	42.5	68.2	50.1	59.1	61.8	57.0	61.6	57.2	75	0.68	0.27	13th	14	8.5	0.9
August	67	29.878	82.7	46.5	70.3	54.5	62.4	63.7	59.5	63.1	59.4	78	2.88	0.59	24th	20	12.4	2.3
September	63	30.081	84.4	36.2	66.6	47.4	57.0	59.8	59.5	58.3	54.5	77	1.00	0.48	14th	8	16.9	5.0
October	58	29.700	66.8	27.0	58.4	45.3	51.8	55.0	57.0	52.8	50.9	87	7.62	1.59	1st	28	14.2	1.3
November	58	29.762	61.8	25.7	51.4	38.9	45.2	47.3	52.4	45.3	43.9	89	3.42	0.76	20th	20	13.7	0.5
December	53	29.850	53.8	25.0	44.5	33.8	39.1	43.7	49.3	39.2	37.7	87	2.50	0.34	25th	19	17.3	0.5

Mean temperature of each month in the year, during the ten years 1897-1906.

MONTH.	1897	1898	1899	1900	1901	1902	1903	1904	1905	1906
January	35°9	44°0	42°2	36°5	37°9	36°5	40°5	38°5	38°3	41°6
February	43°5	41°3	41°3	39°8	37°8	36°1	45°1	39°0	42°4	38°6
March	44°6	41°1	42°1	38°3	40°6	43°8	45°9	40°3	44°6	41°9
April	46°3	46°6	47°2	46°6	46°9	42°7	44°5	47°8	46°3	45°5
May	49°1	49°9	52°0	50°4	53°5	48°8	58°0	51°4	50°8	51°2
June	59°5	55°9	59°8	55°3	57°3	56°8	54°9	57°2	58°6	57°3
July	62°7	60°6	63°8	63°9	64°2	58°8	56°9	63°0	62°7	59°1
August	60°9	61°5	68°3	59°8	60°0	58°7	58°1	60°1	58°6	62°4
September	54°4	58°8	57°8	55°5	57°7	55°2	55°8	55°0	54°3	57°0
October	51°2	52°7	48°9	49°1	49°7	50°1	52°1	50°7	45°4	51°8
November	46°1	45°7	47°0	44°5	41°5	43°3	50°4	42°0	40°6	45°2
December	42°5	46°7	37°3	43°5	40°9	40°2	39°0	40°8	40°3	39°1

The following Table illustrates the daily direction of wind throughout the year 1906.

Direction of Wind.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Year 1906
N. .. .. .	..	1	4	1	..	1	..	..	1	1	..	4	13
N.E.	3	2	10	8	4	5	2	1	9	2	7	2	55
N.W.	16	13	4	6	10	5	12	8	8	11	11	15	119
S. .. .. .	..	..	..	..	3	1	1	1	1	3	..	..	10
S.E.	2	3	..	2	4	5	3	5	..	4	1	1	30
S.W.	7	5	5	2	7	4	8	7	1	8	6	..	60
E.	1	1	3	9	1	7	1	3	9	..	5	4	44
W.	2	3	5	2	2	2	4	6	1	2	..	5	34

TABLE SHOWING RAINFALL AT CARDIFF IN EACH MONTH, DURING THE THIRTY YEARS, 1876-1906.

YEAR.	JANUARY.					FEBRUARY.					MARCH.				
	Rainfall in Month, Inches.	Days on which 0.01 or more rain fell	Greatest fall in 24 hours.	Date of greatest fall.	Rainfall in Month, Inches.	Days on which 0.01 or more rain fell.	Greatest fall in 24 hours.	Date of greatest fall.	Rainfall in Month, Inches.	Days on which 0.01 or more rain fell.	Greatest fall in 24 hours.	Date of greatest fall.			
1876	1.91	12	0.68	2nd	5.23	22	0.90	14th	3.92	22	0.54	9th			
1877	5.77	27	0.72	3rd	2.79	20	0.42	11th	2.66	21	0.55	23rd			
1878	1.73	17	0.36	27th	3.07	16	0.87	27th	1.25	8	0.40	28th			
1879	5.95	10	1.30	1st	5.95	23	0.86	20th	1.14	14	0.32	23rd			
1880	0.87	11	0.42	13th	3.88	22	1.06	18th	1.90	12	0.75	2nd			
1881	0.92	12	0.23	26th	4.81	15	1.12	9th	3.88	16	0.68	3rd			
1882	3.19	13	0.82	2nd	2.56	15	0.60	28th	2.26	19	0.32	1st			
1883	5.75	25	1.11	24th	3.73	20	0.65	10th	0.60	10	0.12	19th			
1884	6.03	21	0.99	31st	4.40	22	1.35	17th	3.39	16	1.27	3rd			
1885	3.71	20	0.58	9th	3.65	22	0.67	26th	1.87	16	0.53	29th			
1886	5.03	23	0.91	30th	1.32	11	0.62	28th	3.97	13	0.68	20th			
1887	2.76	15	0.73	7th	1.45	6	0.73	3rd	3.21	10	1.16	15th			
1888	1.70	12	0.49	1st	1.07	9	1.09	2nd	4.62	15	0.76	24th			
1889	1.58	10	0.58	9th	2.00	16	0.64	10th	3.89	16	1.17	8th			
1890	5.21	24	0.61	26th	0.55	7	0.22	19th	1.52	14	0.28	24th			
1891	3.58	13	1.26	23rd	0.05	2	0.03	2nd	1.76	16	0.31	15th			
1892	2.10	15	0.70	16th	2.38	19	0.58	20th	1.18	6	0.48	15th			
1893	2.38	19	0.94	12th	6.04	22	0.95	25th	0.31	6	0.14	2nd			
1894	3.20	23	0.44	19th	3.68	20	0.78	17th	3.37	13	0.82	1st			
1895	3.88	20	0.71	19th	0.17	4	0.08	24th	3.92	21	0.85	27th			
1896	0.64	6	0.40	24th	1.39	9	0.80	13th	4.47	24	0.54	7th			
1897	3.78	17	0.50	31st	5.73	21	0.70	4th	6.29	19	0.90	31st			
1898	1.96	10	0.48	10th	1.71	17	0.22	18th	1.12	9	0.53	6th			
1899	5.50	20	1.03	20th	3.89	13	0.79	4th	1.39	6	0.88	25th			
1900	5.81	23	1.26	6th	6.40	20	0.99	18th	1.06	6	0.33	21st			
1901	2.48	17	0.59	26th	1.01	10	0.25	26th	2.10	12	0.31	6th			
1902	2.60	18	0.72	3rd	1.25	9	0.40	22nd	2.58	13	0.54	14th			
1903	5.81	24	1.69	4th	2.19	20	0.48	24th	5.80	26	0.65	1st			
1904	5.60	26	0.89	11th	5.81	24	0.78	10th	2.97	19	0.65	7th			
1905	1.34	17	0.37	16th	1.05	13	0.33	26th	5.76	22	1.26	10th			
1906	7.42	24	0.89	5th	3.71	22	0.60	16th	2.92	15	0.95	10th			

TABLE SHOWING RAINFALL AT CARDIFF IN EACH MONTH, DURING THE THIRTY YEARS, 1876-1906.

YEAR.	APRIL.				MAY.				JUNE.			
	Rainfall in Month, Inches.	Days on which 0.01 or more rain fell.	Greatest fall in 24 hours.	Date of greatest fall.	Rainfall in Month, Inches.	Days on which 0.01 or more rain fell.	Greatest fall in 24 hours.	Date of greatest fall.	Rainfall in Month, Inches.	Days on which 0.01 or more rain fell.	Greatest fall in 24 hours.	Date of greatest fall.
1876	1.91	17	0.38	28th	0.23	4	0.12	24th	1.91	9	0.52	15th
1877	2.90	20	0.52	20th	2.47	14	0.99	16th	1.48	12	0.41	1st
1878	4.10	21	0.75	9th	4.32	24	0.71	16th	3.68	15	1.05	16th
1879	2.64	17	0.73	19th	2.85	15	0.88	29th	6.48	23	1.64	30th
1880	1.98	13	0.40	5th	1.45	11	0.46	26th	2.38	19	0.53	17th
1881	1.44	7	0.60	13th	2.62	10	1.73	17th	3.59	18	0.63	16th
1882	5.68	20	0.60	12th	2.72	13	0.59	22nd	4.28	20	0.82	5th
1883	0.67	7	0.28	26th	1.90	12	0.70	11th	1.81	17	1.16	27th
1884	1.56	11	0.43	3rd	2.37	14	0.50	2nd	1.92	9	1.11	28th
1885	2.52	16	0.67	1st	3.86	27	0.71	19th	2.61	13	1.04	23rd
1886	2.98	15	0.73	7th	6.38	19	1.52	31st	0.70	7	0.28	1st
1887	1.63	10	0.45	26th	1.94	14	0.63	19th	0.60	4	0.51	2nd
1888	1.48	13	0.30	17th	1.69	8	0.40	17th	3.69	17	0.74	17th
1889	3.54	18	0.71	30th	2.51	16	0.38	31st	0.58	6	0.41	1st
1890	1.80	14	0.34	6th	1.99	13	0.66	9th	2.46	17	0.40	10th
1891	2.02	11	0.40	2nd	3.41	17	0.75	21st	2.47	12	1.30	24th
1892	1.27	9	0.43	20th	1.35	11	0.66	27th	1.93	10	0.61	28th
1893	0.29	5	0.16	1st	2.80	12	0.72	19th	0.67	9	0.23	22nd
1894	2.05	15	0.41	23rd	2.18	15	0.50	15th	2.43	16	0.64	3rd
1895	2.08	12	0.55	24th	0.50	3	0.41	31st	1.15	9	0.32	30th
1896	2.83	14	0.80	15th	9.22	3	0.14	13th	2.48	11	1.00	7th
1897	8.18	20	0.90	13th	2.29	8	0.50	29th	5.02	11	0.90	8th
1898	1.40	10	0.28	11th	4.80	20	0.80	11th	5.06	14	0.90	4th
1899	4.34	18	0.92	20th	2.49	12	0.78	19th	1.17	5	0.45	30th
1900	1.62	12	0.42	3rd	1.89	13	0.37	21st	1.73	14	0.27	14th
1901	4.54	14	0.91	3rd	0.91	5	0.42	30th	3.00	9	1.22	20th
1902	2.36	9	0.54	4th & 14th	2.43	21	0.55	16th	2.86	20	0.45	12th
1903	2.48	16	0.75	25th	4.48	21	1.39	8th	3.11	15	0.90	9th
1904	2.44	21	0.35	29th	3.05	23	0.53	24th	1.29	9	0.58	14th
1905	2.81	20	0.46	10th	0.15	4	0.06	1st	3.75	18	0.80	30th
1906	1.53	13	0.53	24th	4.32	20	0.97	26th	2.73	11	0.87	28th

TABLE SHOWING RAINFALL AT CARDIFF IN EACH MONTH, DURING THIRTY YEARS, 1876-1906.

TABLE SHOWING RAINFALL AT CARDIFF IN EACH MONTH, DURING THIRTY YEARS, 1876—1906.

YEAR.	JULY.				AUGUST.				SEPTEMBER.			
	Rainfall in Month. Inches.	Days on which 0.01 or more rain fell.	Greatest fall in 24 hours.	Date of greatest fall.	Rainfall in Month. Inches.	Days on which 0.01 or more rain fell.	Greatest fall in 24 hours.	Date of greatest fall.	Rainfall in Month. Inches.	Days on which 0.01 or more rain fell.	Greatest fall in 24 hours.	Date of greatest fall.
1876	1.91	10	0.41	6th	6.06	27	2.72	19th	7.08	19	1.28	30th
1877	4.94	18	1.27	14th	5.70	21	1.42	27th	3.25	8	1.39	27th
1878	2.01	9	0.78	23rd	10.82	24	3.64	15th	3.21	9	1.28	22nd
1879	4.00	21	0.81	19th	8.12	22	1.34	27th	4.85	17	0.69	7th
1880	6.64	23	0.95	17th	0.77	7	0.27	2nd	3.67	15	0.77	17th
1881	2.62	15	0.77	30th	6.94	20	1.45	22nd	2.09	13	0.48	22nd
1882	5.77	24	0.84	6th	6.75	16	1.14	22nd	3.94	17	0.79	28th
1883	3.56	21	0.82	20th	2.09	16	0.73	8th	6.14	19	1.53	23rd
1884	4.05	20	0.94	23rd	2.21	9	0.84	31st	1.96	15	0.64	21st
1885	0.72	6	0.31	18th	2.74	12	1.07	6th	6.51	23	1.76	10th
1886	4.85	17	0.71	29th	1.68	9	0.44	9th	4.08	14	0.75	4th
1887	1.51	13	0.85	26th	2.88	11	1.02	16th	4.07	17	1.24	1st
1888	6.83	25	1.16	7th	3.50	17	0.74	29th	1.21	8	0.52	27th
1889	3.85	12	1.16	9th	3.90	15	0.65	2nd	2.09	9	1.53	23rd
1890	3.57	19	0.73	17th	3.95	20	0.95	9th	1.57	11	0.50	17th
1891	2.21	17	0.36	2nd	7.19	22	1.10	26th	2.43	19	0.51	3rd
1892	3.83	9	1.50	12th	4.64	16	1.62	27th	3.95	14	1.38	29th
1893	3.88	17	0.80	10th	3.05	14	0.52	20th	2.03	15	0.89	28th
1894	4.22	20	0.97	24th	4.55	18	1.55	25th	2.22	10	0.80	22nd
1895	4.71	15	0.94	23rd	4.08	17	1.19	12th	1.17	10	0.40	6th
1896	1.14	8	0.35	24th	2.89	15	0.84	19th	7.34	23	1.10	17th
1897	2.51	8	0.80	6th	5.42	16	1.30	30th	6.37	13	1.38	29th
1898	0.40	2	0.20	1st	3.48	10	0.67	6th	1.94	4	1.38	29th
1899	0.32	6	0.09	1st	1.74	7	0.56	29th	2.59	13	0.74	26th
1900	0.68	8	0.27	27th	4.06	14	0.88	9th	1.32	10	0.50	26th
1901	2.58	8	1.00	23rd	4.00	14	1.30	13th	4.36	17	1.52	13th
1902	2.19	15	0.77	19th	4.21	23	0.68	14th	3.13	15	0.86	10th
1903	3.53	16	1.06	17th	5.84	26	0.72	23rd	3.73	21	0.92	28th
1904	4.13	19	1.69	25th	3.56	17	0.69	22nd	3.49	13	0.70	14th
1905	0.88	11	0.37	1st	4.26	22	0.67	2nd	1.57	11	0.52	9th
1906	0.68	14	0.27	13th	2.88	20	0.59	24th	1.00	8	0.48	14th

TABLE SHOWING RAINFALL AT CARDIFF IN EACH MONTH, DURING THE THIRTY YEARS, 1876-1906

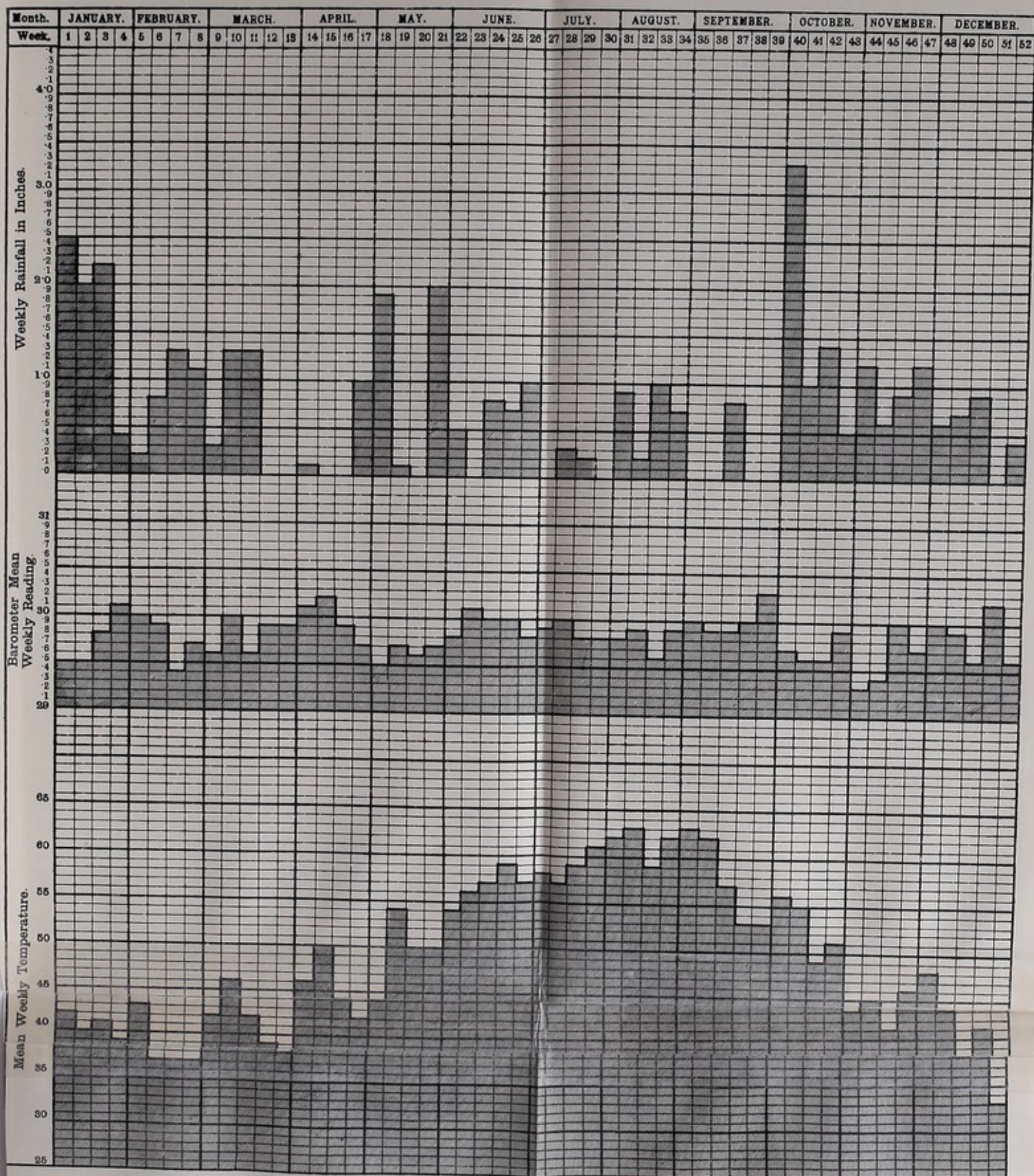
YEAR.	OCTOBER.				NOVEMBER.				DECEMBER.				YEAR.
	Rainfall in Month, Inches.	Days on which 0.01 or more rain fell.	Greatest fall in 24 hours.	Date of greatest fall.	Rainfall in Month, Inches.	Days on which 0.01 or more rain fell.	Greatest fall in 24 hours.	Date of greatest fall.	Rainfall in Month, Inches.	Days on which 0.01 or more rain fell.	Greatest fall in 24 hours.	Date of greatest fall.	
1876	3.84	17	0.62	16th	5.27	18	0.75	12th	7.13	23	0.80	17th	46.62
1877	4.89	16	1.15	24th	6.54	25	1.06	24th	3.40	25	0.88	28th	46.79
1878	5.76	18	1.09	23rd	5.76	13	0.84	9th	2.70	10	0.75	28th	45.71
1879	1.51	12	0.35	19th	0.43	8	0.18	20th	2.11	9	0.79	31st	44.79
1880	4.94	15	1.45	25th	3.67	15	0.90	15th	6.70	20	1.09	14th	38.85
1881	3.23	13	0.72	22nd	4.98	23	0.65	26th	4.50	45	1.77	7th	41.62
1882	8.33	23	1.64	23rd	6.26	21	0.90	7th	4.86	25	0.73	31st	56.60
1883	4.23	17	0.61	15th	6.38	24	0.80	21st	1.92	17	0.57	10th	38.78
1884	1.01	17	0.35	8th	2.12	16	0.47	30th	5.87	20	0.68	5th	36.89
1885	5.59	22	1.60	22nd	5.47	16	1.11	27th	1.74	17	0.05	5th	40.99
1886	5.09	21	0.87	15th	5.39	21	1.03	5th	6.64	21	1.33	26th	48.11
1887	2.80	13	1.14	29th	3.48	21	0.69	3rd	3.46	20	0.75	12th	29.79
1888	1.74	11	0.52	28th	7.04	26	1.13	12th	3.61	16	0.88	27th	38.18
1889	3.77	25	0.48	8th	1.87	12	0.75	24th	2.40	14	0.80	21st	31.38
1890	1.92	16	0.41	7th	3.89	20	0.67	6th	0.80	4	0.33	18th	29.23
1891	7.12	22	1.32	18th	3.91	15	0.74	28th	6.19	19	0.78	30th	42.34
1892	2.64	15	0.51	27th	3.25	18	0.66	4th	2.23	12	0.62	1st	22.63
1893	5.98	21	1.29	4th	2.30	13	0.58	1st	4.18	19	0.94	12th	33.91
1894	4.91	14	1.05	24th	4.72	20	0.83	13th	3.66	20	0.51	17th	41.19
1895	3.67	15	0.94	3rd	4.21	23	0.60	5th	3.45	31	0.48	17th	32.64
1896	4.65	19	0.74	5th	0.96	5	0.60	15th	6.41	22	0.72	4th	35.42
1897	3.22	7	0.90	2nd	1.82	7	0.63	27th	6.06	18	1.19	7th	56.80
1898	7.30	18	1.13	17th	7.46	16	1.39	23rd	5.44	17	1.03	6th	42.07
1899	2.34	12	0.60	27th	3.29	11	0.95	9th	3.69	19	0.86	28th	32.75
1900	5.79	21	1.06	29th	4.99	22	0.71	24th	6.55	26	1.06	30th	41.90
1901	2.64	21	0.37	1st	1.50	8	0.51	11th	7.15	21	0.99	7th & 28th	36.27
1902	3.88	21	0.96	21st	4.97	20	1.30	8th	3.95	18	0.83	28th	36.41
1903	11.06	31	2.16	14th	2.40	19	0.53	27th	4.24	21	0.69	8th	54.97
1904	2.48	18	0.85	16th	3.50	15	0.80	6th	3.40	25	0.67	5th	41.72
1905	2.23	9	0.52	31st	3.68	18	0.75	10th	1.87	14	0.55	7th	29.35
1906	7.62	28	1.59	1st	3.42	20	0.76	20th	2.50	19	0.34	25th	40.73

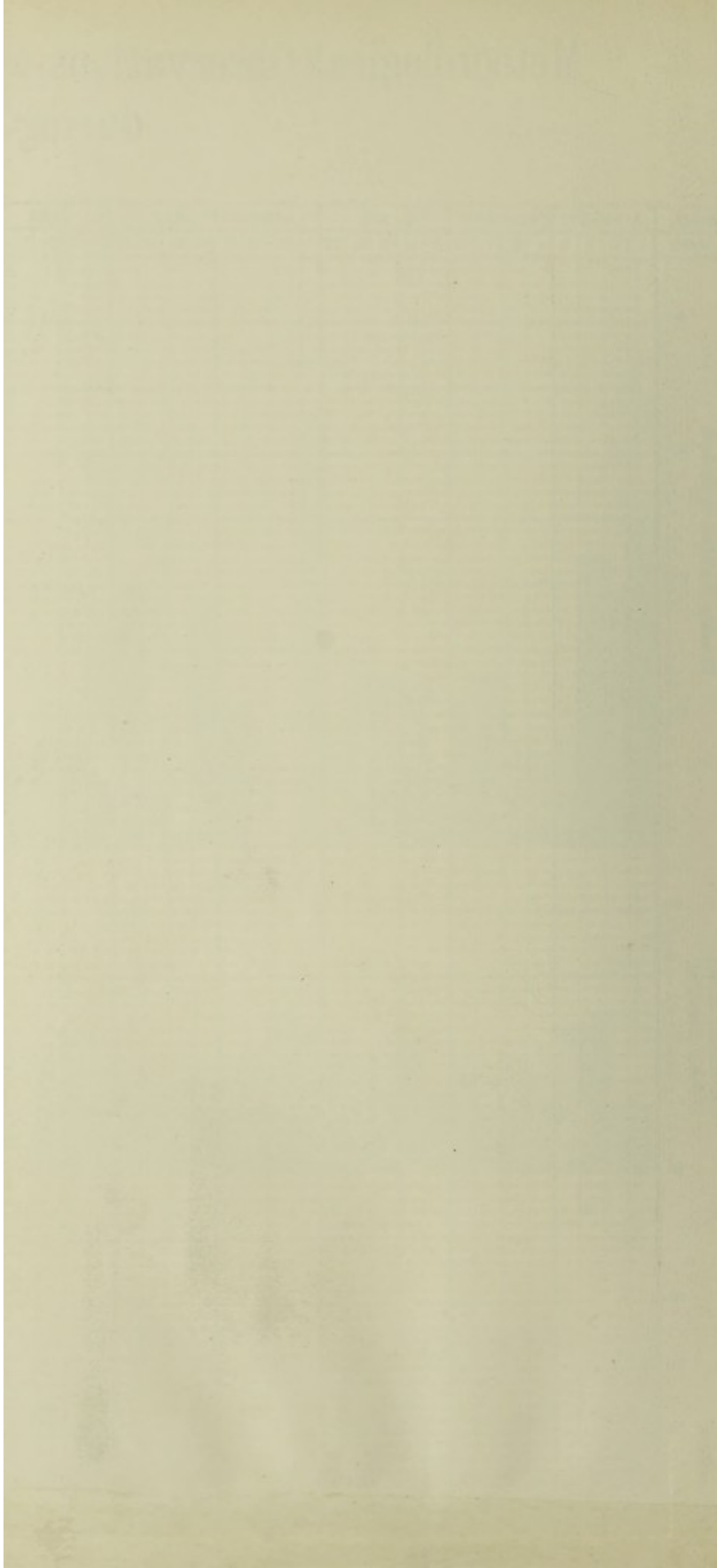
DEATHS FROM SPECIFIED CAUSES AT ALL AGES, AND AT SIX GROUPS OF AGES,
During the Year 1906. Estimated Population, 183,823.

[illegible]

NAME OF THE PERSON	AGE	SEX
JOHN DOE	25	M
JANE DOE	22	F
JOHN DOE	25	M
JANE DOE	22	F
JOHN DOE	25	M
JANE DOE	22	F
JOHN DOE	25	M
JANE DOE	22	F
JOHN DOE	25	M
JANE DOE	22	F
JOHN DOE	25	M
JANE DOE	22	F
JOHN DOE	25	M
JANE DOE	22	F
JOHN DOE	25	M
JANE DOE	22	F

Meteorological Observations taken at Roath Park, Cardiff, during 1906.





CITY OF CARDIFF.

REPORT OF THE MEDICAL OFFICER OF HEALTH
ON INFANTILE MORTALITY.

EXTRACT FROM THE MINUTES OF THE PROCEEDINGS OF THE COUNCIL
OF THE CITY OF CARDIFF, HELD 10TH DECEMBER, 1906.

Resolved—"THAT THE MEDICAL OFFICER OF HEALTH BE REQUESTED TO ENQUIRE FULLY INTO THE CAUSES FOR THE HIGH RATE OF INFANT MORTALITY GIVEN IN HIS REPORT FOR THE THIRD QUARTER OF THE CURRENT YEAR, AND TO REPORT THEREON TO THIS COUNCIL THROUGH THE PROCEEDINGS OF THE HEALTH AND PORT SANITARY COMMITTEE, ESPECIALLY AS TO PRECISE LOCALITIES IN THE DISTRICTS NAMED, IN WHICH THE HIGH RATE OF INFANT MORTALITY PRINCIPALLY OCCURS."

CITY HALL, CARDIFF,

January, 1907.

To the Chairman and Members of the Health and Port Sanitary Committee.

GENTLEMEN,

In submitting to you the following report, I may perhaps be permitted to explain that I have been unable to follow strictly the terms of the above Resolution for the following reasons:—the first place, my report for the third quarter of 1906 does not show a high rate of infant mortality as compared with that of large towns in England and Wales, and, consequently, there are no precise localities in which a high rate principally occurs. The districts named are, I presume, those referred to in the agenda of the Council Meeting of the 10th December, 1906, namely, the Blott, Canton, and Grangetown Wards. A reference to the tables in this report will show that the highest mortality did not occur in these wards in this quarter of the year.

Apart, however, from the resolution, I understand that the Sanitary Authority is desirous of reducing, if possible, the rate of infant mortality in Cardiff, which, although comparatively low, may still be capable of further reduction. Acting upon this assumption, I shall endeavour to indicate to you the measures which, in my opinion, might advantageously be adopted to bring about this desirable result, but in doing so it is right to mention that having on several occasions dealt somewhat fully with the subject of infant mortality, it follows that I can offer little that is new and which has not already been placed before you in previous reports.

Infant mortality is calculated upon the proportion of deaths under one year of age to 1,000 births registered during the period under consideration. The calculation is based upon ascertained facts, i.e. the number of births registered and the number of deaths under one year of age, and has not, therefore, the uncertainty which attaches to the general rate of mortality based upon estimates of population which can only be approximately correct.

Dealing in the first place with the third or summer quarter of the year, as certain special conditions exist at this period which are invariably associated with a comparatively high rate of mortality:

The following figures show the rates of infant mortality which prevailed in Cardiff, compared with the average rate in the 76 large towns in England and Wales, during the third quarters of the years 1903-1906.

Third Quarters.	Cardiff.	76 Large Towns.
1903	118	159
1904	177	229
1905	120	186
1906	154	209

The following Tables show the infant mortality in each Municipal Ward in Cardiff in the third quarter of 1906, and in the corresponding quarters of 1903-1906.

It will be seen that in both periods the Central Ward shows the highest rate of mortality the South and Splott Wards being next in order in the longer period, whereas their position is reversed in 1906. Table I. gives the average rates of mortality in the 76 large towns of England and Wales, and of 18 towns with populations over 150,000, for the third quarter of 1906, and shows that the rate in Cardiff was the lowest in this list.

TABLE I.—INFANT MORTALITY.

Third Quarter (July, August, September), 1906.

TOWNS AND DISTRICTS.	Population (1906).	Births.	Deaths of Infants under 1 year of age.	Deaths of Infants under 1 year of age per 1,000 Births Registered.
*Cardiff	183,823	1,287	199	154
† Municipal Wards.				
Central	11,364	60	13	216
South	10,419	73	14	191
Cathays	22,182	158	13	82
Adamsdown	12,377	92	14	152
Riverside	18,049	108	12	111
Canton	24,302	181	25	138
Grangetown	20,230	260	38	190
Roath	16,147	112	18	160
Park	25,902	143	14	97
Splott	16,959	141	28	198
Union Workhouse ...	880	19	10	...
76 Large Towns	15,818,360	110,208	23,065	209
London	4,721,217	31,233	5,967	191
Liverpool	739,180	6,017	1,448	241
Manchester	637,126	4,657	1,141	245
Birmingham	548,022	4,129	1,003	243
Leeds	463,495	3,106	670	216
Sheffield	447,951	3,400	835	246
Bristol	363,223	2,368	370	156
West Ham	301,617	2,247	540	240
Bradford	288,544	1,529	308	201
Newcastle-on-Tyne ...	268,721	2,018	417	207
Hull	262,426	2,011	553	275
Nottingham	254,563	1,702	431	253
Leicester	232,111	1,436	346	241
Portsmouth	205,118	1,472	291	198
Bolton	180,502	1,145	221	193
Croydon	151,011	1,017	205	202
Sunderland	154,385	1,427	243	170
Salford	234,077	1,691	402	238

* The population of the City of Cardiff is that given by the Registrar General.

† The population of the Wards is estimated on the basis of the number of inhabited houses, June, 1906.

CITY OF CARDIFF.

Chart showing the Relation of Birth-Rate to Death-Rate in Cardiff during the years 1872-1906.

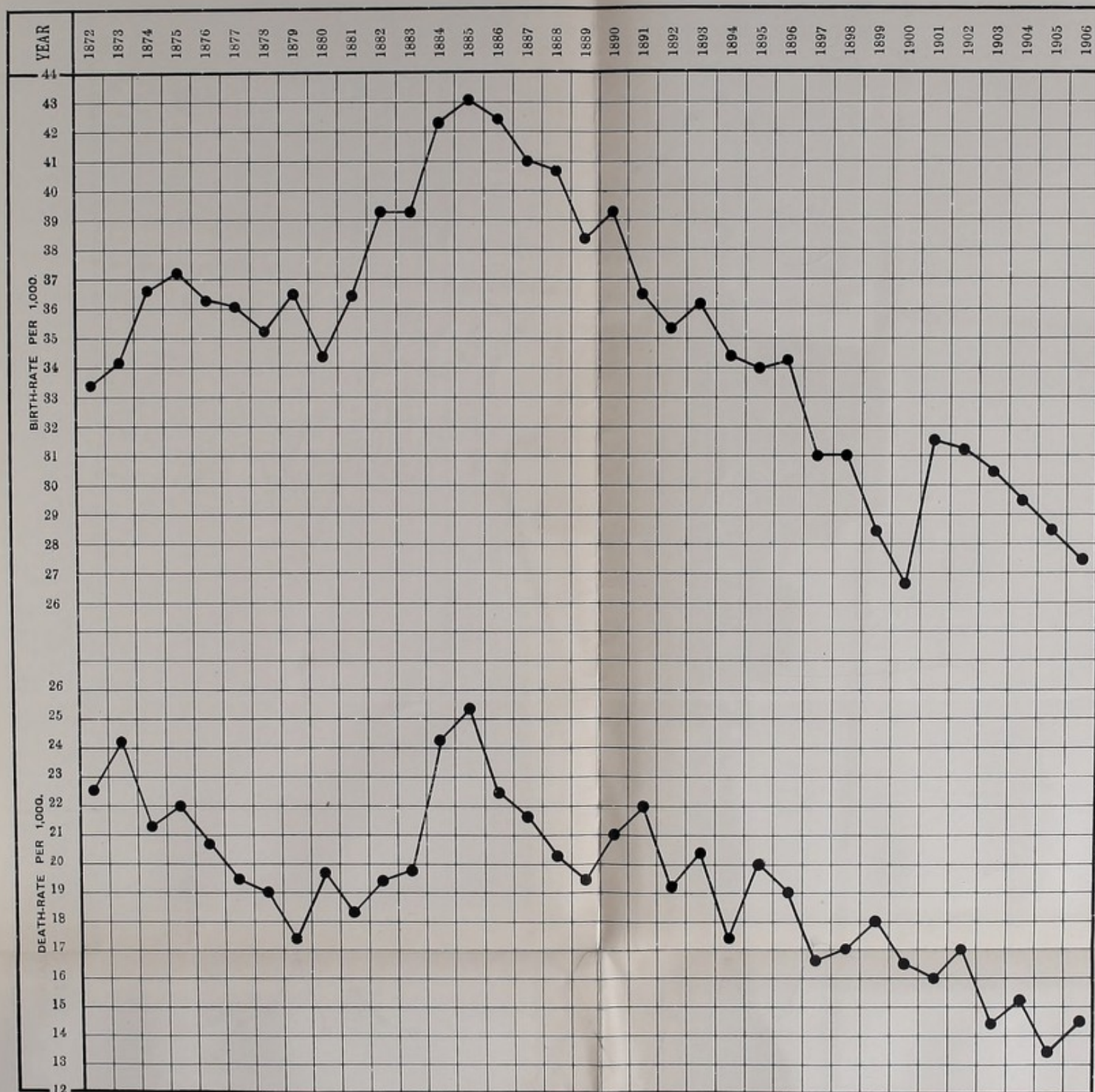


TABLE II.

Table showing the number of births, deaths under one year, and deaths under one year per 1,000 births registered during the third quarters of the years 1903-1906.

WARDS.				Births.	Deaths under One Year.	Deaths under One Year per 1,000 Births registered.
Central	Ward	...	...	269	51	189
South	"	...	...	286	51	178
Cathays	"	...	...	651	56	86
Adamsdown	"	...	...	381	60	157
Riverside	"	...	...	452	57	126
Canton	"	...	...	723	107	148
Grangetown	"	...	...	789	129	163
Roath	"	...	...	461	59	128
Park	"	...	...	576	61	105
Splott	"	...	...	633	105	165
Union Workhouse	...	...	...	90	21	233
Totals				5,311	757	142

It will be seen on referring to Tables II. and III., that a very large proportion of the deaths of infants in the summer are due to diarrhoeal diseases. Taking the period 1903-1906, as given in the Tables, it is found that 32.7 per cent. of the total deaths under one year are due to diarrhoea, and that the excessive fatality from these diseases is confined to the third quarter of the year. A reference to the chart attached to this Report will show also that such variations in this mortality as occur from year to year are closely associated with the rise and fall of the mean temperature, and particularly with the temperature of the soil, as indicated by the readings of the 4ft. thermometer at your Climatological Station. A comparatively high rate of infant mortality is found in hot and dry summers, and a low rate when the summer temperature is below, and the rainfall above, the average.

Bacteriological investigations have shown that the growth of certain micro-organisms associated with this particular form of summer diarrhoea are favoured by a comparatively high temperature, and that changes in certain foods, particularly in cows milk, take place with greater activity in warm weather, and that much of the acute and fatal diarrhoea is due to these changes which occur at this time of the year. Unsuitable conditions of feeding are found, and improper food is administered at other seasons, but these, for the most part, produce the more chronic forms of wasting diseases which prevail largely amongst the infants of poor and ignorant mothers living in the crowded districts in large towns.

The spot map in the appendix to this report will indicate the locality and the streets in Cardiff in which the cases of fatal diarrhoea amongst infants occurred during the third quarter of 1906.

TABLE III.

Table showing diarrhoea deaths under one year of age in three age periods, and the diarrhoea deaths under one year per 1,000 births registered, during the third quarters of the years 1903-1906.

WARDS.				Under 3 Months.	3-6 Months.	6-12 Months.	Totals.	Deaths from Diarrhoea under one year per 1000 births registered.
Central	Ward	...	...	5	8	9	22	81
South	"	...	...	5	5	7	17	59
Cathays	"	...	...	3	5	1	9	14
Adamsdown	"	...	...	3	11	11	25	65
Riverside	"	...	...	9	11	4	24	44
Canton	"	...	...	16	13	16	45	62
Grangetown	"	...	...	21	17	24	62	78
Roath	"	...	...	3	4	8	15	32
Park	"	...	...	8	3	2	13	22
Splott	"	...	...	5	8	13	26	41
Totals ...				78	85	95	258	48

It has been abundantly shown that there has been during the past half century a steady decline in the general mortality throughout the country. This decline has been well marked in Cardiff, where at the present time the death-rate has almost reached the standard of some of our noted health resorts. Unfortunately in Cardiff, as in other places, the rate of infant mortality has not diminished in like proportion. This rate has not responded in anything like the same degree to the sanitary progress and improved municipal administration of recent years. It has to be acknowledged, therefore, that while the general death-rate in England and Wales has been for many years past continuously declining, the rate of infantile mortality has remained on the whole stationary, and in some places has even increased. This is shown in the following Tables:—

TABLE IV.

ENGLAND AND WALES.

YEARS.	General Death-Rate per 1,000 persons living.	Deaths under 1 Year per 1,000 births.
1851-1855	22.6	156
1856-1860	21.8	151
1861-1865	22.5	151
1866-1870	22.4	156
1871-1875	21.9	153
1876-1880	20.8	144
1881-1885	19.4	138
1886-1890	18.8	145
1891-1895	18.7	150
1896-1900	17.6	156
1901	16.9	151
1902	16.3	133
1903	15.4	132
1904	16.2	146
1905	15.2	146

TABLE V.

The following Table shows the population of each year, the annual deaths from all causes, and the death-rates from 1852 to 1906 inclusive, in the City of Cardiff:—

Year.	Population.	All Causes.		
		No. of Deaths.	Death-rates per 1000.	Mean of 10 years.
1852	19,724	620	31.4	29.2
1853	21,094	644	30.5	
1854	22,464	925	41.1	
1855	23,834	641	26.9	
1856	25,204	772	30.6	
1857	26,574	883	33.2	
1858	27,944	753	26.9	
1859	29,314	826	28.1	
1860	30,684	662	21.5	
1861	32,054	837	26.1	
1862	32,804	695	21.2	24.2
1863	33,552	862	25.7	
1864	34,300	932	27.1	
1865	35,048	867	24.7	
1866	35,796	882	24.6	
1867	36,544	873	23.8	
1868	37,292	843	22.6	
1869	38,040	1,005	26.4	
1870	38,788	903	23.2	
1871	39,356	891	22.5	20.0
1872	40,284	916	22.7	
1873	41,032	995	24.2	
1874	41,780	885	21.2	
*1875	69,850	1,547	22.1	
1876	72,438	1,455	20.8	
1877	75,026	1,475	19.6	
1878	77,614	1,468	18.9	
1879	80,202	1,428	17.6	
1880	82,790	1,634	19.7	
1881	85,378	1,556	18.2	21.5
1882	88,603	1,724	19.4	
1883	91,204	1,807	19.8	
1884	93,468	2,250	24.3	
1885	97,034	2,481	25.5	
1886	100,736	2,269	22.5	
1887	104,580	2,280	21.8	
1888	108,570	2,212	20.3	
1889	112,712	2,190	19.4	
1890	117,012	2,469	21.1	17.9
1891	130,283	2,873	22.0	
1892	132,895	2,560	19.2	
1893	136,168	2,794	20.4	
1894	139,519	2,415	17.3	
1895	142,958	2,840	19.9	
1896	146,479	2,795	19.0	
1897	150,087	2,534	16.8	
1898	153,783	2,627	17.0	
1899	157,414	2,858	18.1	
1900	161,452	2,667	16.5	16.0
1901	165,308	2,653	16.0	
1902	168,909	2,865	16.9	
1903	172,598	2,496	14.4	
1904	176,313	2,695	15.2	
1905	180,054	2,443	13.5	
1906	183,823	2,618	14.2	

* Canton and Roath taken into the City.

TABLE VI.

The rate of infant mortality in the 33 large towns, as compared with that of Cardiff during successive periods, is shown in the following Table:—

33 LARGE TOWNS.		CARDIFF.	
Period.	Deaths under 1 year to 1,000 births.	Period.	Deaths under 1 year to 1,000 births.
1881—1890	162	1881—1890	165
1891—1900	172	1891—1900	161

TABLE VII.

The rate of infant mortality in the 76 large towns, as compared with that of Cardiff during the years 1902-1906, is shown in the following Table:—

76 LARGE TOWNS.		CARDIFF.	
YEAR.	Deaths under 1 year to 1,000 births.	YEAR.	Deaths under 1 year to 1,000 births.
1902	145	1902	145
1903	144	1903	122
1904	160	1904	144
1905	160	1905	118
1906	145	1906	134

From the foregoing Tables it is seen that, in comparison with the large towns, Cardiff holds a specially favourable position; in these towns an actual increase is shown in the 10 years ending 1900, as compared with the 10 years ending 1890. In Cardiff there has been a slight decrease in this rate during the same period. This decrease has continued since 1900, and in 1905 the rate was one of the lowest amongst the large towns, even lower than the average rate for the rural districts of England and Wales. It is seen also that the rate of infant mortality is much higher in the larger urban districts than in the rural districts. The ever-increasing urbanisation of the population is therefore injuriously affecting the lives of infants. It is shown in the following Table, supplied by Dr. Tatham to the Inter-Departmental Committee on Physical Deterioration, that whilst there is a slight increase in the mortality in the large urban districts, there is a slight decrease in the rural districts.

TABLE VIII.

(From Dr. Tatham's return.)

Average rate of infantile mortality per 1,000 births:—

Years.	Urban Counties.		Rural Counties.	
	Males.	Females.	Males.	Females.
1873—1877	176	146	140	113
1898—1902	180	149	139	111

It is of importance to note also that the rate of infantile mortality in England compares unfavourably with that of Scotland and Ireland, and still more so with that of Denmark, Norway, and Sweden. The rate also varies considerably amongst the large towns in England and Wales, the mortality being much higher in large and crowded manufacturing districts, such as Manchester, Salford, Liverpool, and Preston, than in such places as Croydon, Hornsey, and Hastings. Climatic conditions are doubtless largely concerned with the varying rate of infant mortality in the different countries, and in a lesser degree with that in the different parts of the United Kingdom. But it would seem that the increasing aggregation of populations in large industrial centres, and the consequent unfavourable and unhealthy conditions of living, and other attendant evils in these districts, are important influences which contribute to this comparatively high death-rate amongst infants. Some indications of the preventive measures which are required is afforded by an examination of the chief and immediate causes of death amongst infants under one year of age. So far as urban districts are concerned, these may be stated in order, as follows:—Diarrhoea, atrophy, premature birth, meningitis and convulsions, bronchitis, and pneumonia.

It may be well to point out here that although the decline in the general death-rate has been coincident with, and in the main consequent upon, sanitary progress, other and less satisfactory factors have been concerned with this decline. For instance, the declining birth-rate of recent years has naturally had a tendency to diminish the proportion of children (whose mortality is high) in the population, and has increased the proportion of persons at ages of low mortality. Should this decline in the birth-rate continue, the death-rate will increase, as these persons at ages of low mortality will in time enter the age periods of high mortality. This increase may, of course, be checked by further sanitary progress, but it must be borne in mind that while a birth-rate might conceivably be reduced to a very low figure, a death-rate can hardly be expected to fall below 10 per 1,000. In a stationary population a continuous death-rate of 10 per 1,000 implies a mean age at death of 100 years, it is clear, therefore, that we cannot expect a reduction below this limit. The stationary or increasing infant mortality, when taken in conjunction with a declining birth-rate, is a matter, therefore, of grave national concern.

The Chart shows the relation of the birth-rate to the death-rate in Cardiff during the years 1872-1906.

In the large towns the highest mortality occurs in the large centres of industry, and amongst these again the highest rates are found in those towns in which the greater proportion of married women work in factories.

In Cardiff it has been shown that the highest rate of infant mortality occurs in the central districts of the town, in which the density of population is highest, and in which the housing accommodation and general sanitation compare unfavourably with the newer districts, the streets and buildings of which have been laid out and constructed in accordance with modern ideas of sanitation.

The unfavourable conditions referred to act not only directly, by lowering the vitality and general health of the parents and children, but they imply, to some extent, also poverty, neglected and dirty houses, intemperance and ignorance, all contributing to the same result, *i.e.*, illness and premature death.

The remedy in this case must be found in the gradual improvement of the old parts of the town, in the reduction of over-crowding, and in the efficient cleansing of the streets and houses.

The total and immediate demolition of these localities is, of course, impracticable, but much good has already been effected by the gradual closing and demolition of the worst houses in the district, under the powers of the Housing of the Working Classes Act, 1890, a policy which has been steadily pursued during many years past by your Health Committee, and which has, in my opinion, contributed to the reduction in the mortality in the town.

The most important direct cause of infantile mortality is, undoubtedly, improper feeding. It has been shown that the most severe and fatal diseases of infancy are diarrhoeal diseases, and, more particularly, that acute form of diarrhoea which occurs in the summer and autumn months, and which is invariably more fatal when the summer heat is more intense and prolonged than usual. A very large proportion of these deaths are the result of improper feeding. Roughly, 20,000 infants under one year of age die annually in England and Wales in this way. In Cardiff alone these deaths usually amount to a little over 100 per annum. Summer diarrhoea is essentially a disease of artificially fed infants, or of those who receive some kind of food in addition to breast milk. Cows' milk is the article of diet most usually relied upon by mothers as a substitute for, or in addition to, the natural food from their breasts. Unfortunately, cows' milk from the time that it is taken from the cow to the time when it is administered to the infant, is subject to a variety of conditions which tend to make it a dangerous food; it is under such conditions a particularly good medium for the growth of the micro-organisms associated with diarrhoea and for conveying the poison of the fatal disease. Table IX. will indicate to some extent the relation of artificial feeding to fatal diarrhoea amongst infants.

TABLE IX.

Table showing nature of food in some of the fatal cases of infantile diarrhoea during the third quarters of the years 1903—1906.

NATURE OF FOOD.	Under 3 months.	3—6 months.	6—12 months.	Total.
Breast fed	6	4	3	13
Breast fed and other food ...	5	13	10	28
Condensed milk	5	8	8	21
Condensed milk and other food	13	21	44	78
Cows' milk	11	11	7	29
Cows' milk and other food ...	9	15	25	49
Total	49	72	97	218

TABLE X.

Table showing nature of food of 1,672 infants visited within two months of birth from April, 1903, to December 13th, 1906 :—

NATURE OF FOOD.	Number.
Breast fed	726
Breast fed and other food ...	372
Condensed milk	200
Condensed milk and other food	272
Cows' milk	18
Cows' milk and other food ...	84
Total	1,672

From these Tables it would appear that about 43 per cent. of the number of infants living under two months of age, and about 6 per cent. of the infants under one year of age, who die from diarrhoea, are entirely breast fed.

The local distribution of fatal diarrhoea in Cardiff does not indicate that this disease is exclusively associated with density of population, overcrowding and unsatisfactory housing accommodation. Ignorance upon the subject of infant feeding is not confined to the very poor who live in slums. Contamination of milk may take place in transit from the farm or dairy, as well as upon the premises of the retail dealer and in the houses of the consumer. Fatal diarrhoea is found, therefore, distributed throughout the several wards. The chief causes contributing to the mortality of infants may be summarised as follows:—Overcrowding, certain conditions of employment of women, poverty, dirt, intemperance, badly constructed and ill-ventilated houses, accumulations of filth, insufficient clothing, and improper food and feeding. Having in view these several causes, I have to recommend the following measures:—

- (1) The further development of the present system of visits by women inspectors, with the object of encouraging breast feeding of infants, and of educating mothers in the rearing of children.
- (2) The control and supervision of the milk supplied to infants artificially fed.
- (3) Special attention to the cleansing of streets and flushing of street gullies, and the removal of all offensive accumulations during the summer months.
- (4) The insertion of clauses in a Local Act of Parliament giving more complete control of the milk supply.

In the absence of maternity charities, where mothers are carefully instructed in infant feeding, the education in this matter amongst the poor naturally devolves very largely upon the midwife or nurse who attends the mother in her confinement and during the lying-in period. Many of these women are quite incapable of giving such instruction, with the result that infants are the victims of this incompetence. The Midwives Act of 1902, and the Regulations of the Central Midwives Board will ultimately have the effect of replacing such persons by a more highly qualified class of midwife who will be competent to give instruction in infant feeding.

Municipalities can assist in this matter by employing qualified Health Visitors or Women Inspectors to visit the houses of the poor in which infants are born, and to give instruction verbally and by means of pamphlets to the mothers. Much good may be done in this way, but unfortunately, according to the present state of the law, births are not infrequently registered until a month or six weeks after the event; the Medical Officer of Health is therefore, in such cases, unable to send the visitor to the house at the most critical period of the infant's life. Some work in this direction has already been done in Cardiff. One Woman Inspector has been appointed, part of whose duty consists in giving, under the direction of the Medical Officer of Health, practical instruction in infant feeding.

To overcome the difficulty alluded to, I have sent out notices to the midwives practising in Cardiff, asking them to notify at the end of each week all births at which they assist. This plan will come into operation at the commencement of the year 1907. If, after a short trial, this plan does not prove successful, I would advise that a small fee (one shilling) be paid to every midwife who reports a birth within 48 hours of its occurrence. Owing, however, to the variety of duties performed by the Woman Inspector, she is unable to do as much work in this direction as one would wish.

A more complete control of the milk supply is much to be desired, and some municipalities have adopted a systematic plan of regulating infant feeding by the establishment of milk depôts. One of the most complete methods of dealing with this difficult question with which I am acquainted, is that which is carried out at Rochester, N.Y., U.S.A., and is thus described by Dr. Goler, the Health Officer of that city:—

"A central station at which the milk is prepared is organised each season on a farm outside the city, where trained assistants have full control of the cows, utensils, bottles, &c., and where all the milk work is carried on in a portable milk laboratory. Everything coming in contact with the milk is thoroughly sterilized in steam sterilizers. The milk itself is not subjected to any pasteurizing or sterilizing, as it is considered that these processes are an open invitation to the milkman to be careless in the production and handling of milk.

"At the milk station on the farm the milk is taken from clean, well fed, tested cattle, into sterile cans, which are carried to the barn in sterile cheesecloth bags. Just before milking, the cows' udders are washed. A sterilized cheesecloth fly cover is placed over the cow, the first portion of the milk being rejected. So soon as the cans are filled they are immediately covered by a layer of cheesecloth held in position by a rubber band. The cans of milk thus covered are immediately taken from the barn into the laboratory, about 200 yards away, where the milk is properly diluted, sweetened, and turned off into sterile nursing bottles of various sizes of the Siebert type. The bottles are corked with sterile rubber corks, placed in racks, covered with cracked ice, and immediately transferred to the city for use. Of the cleanliness of milk prepared in this way, forty-three daily samples were found to average not more than 14,000 bacteria per cubic centimetre, while the city milk for the same period approximated 235,000 bacteria per cubic centimetre."

These methods are far in advance of anything which has been done in this country, although several municipalities have made great advances in this direction. Dr. McCleary, who is a strong advocate of municipal milk depôts, and who had much to do with the establishment of one at Battersea, admits that the control of the milk supply in the British milk depôts is not wholly satisfactory, for he says that, "it may be questioned whether a sanitary authority is justified in supplying milk, the production of which has not been supervised 'from the cow to the consumer' by the responsible officers of the authority. If the organization of the British depôts included the ownership of the cows it would be possible to improve on the present methods by modifying, bottling and sterilizing the milk on the farm immediately after milking, or better still, by the adoption of aseptic methods of milking and cold storage, to supply the milk uncorked as is done at the municipal depôt at Rochester, U.S.A."

Dr. McCleary states that "in the working of the Battersea depot care is taken to safeguard the milk from pollution before it reaches the depôt. The farm was selected by him, the cows were inspected by a veterinary surgeon and certified to be free from tuberculosis, they are milked in the open air, the milk is steamed in the field immediately after milking, and is cooled down to 40° F., it is then placed in churns which are sealed and conveyed to the depôt."

The contractor supplies the milk under most stringent conditions. . . . "At the depôt the milk is modified so as to resemble human milk, after which it is bottled and sterilized. . . . Each bottle contains sufficient milk for one meal, the amount varying with the age of the infant."

In Battersea and in other places where similar methods are adopted, the homes of the children fed on this milk are visited by a woman inspector, who endeavours to secure that the instructions are properly carried out.

In the continental system the milk depôts are entirely under medical control, and a much greater attention is given to individual children than in this country, and this is I think the weak part in our system. A milk depôt, or indeed several milk depôts in a large town like Cardiff could not possibly supply the whole community with milk. The responsibility of selecting the suitable cases (a most difficult matter) must devolve upon someone, and I should be inclined to recommend that the milk depôt, if established, be in connection with some of the Medical Charities of the town, or with a Medical Board appointed for the purpose. A further selection of cases could be made by Women Inspectors, acting under the direction of the Medical Officer of Health, who would visit the houses as soon as possible after the birth of the child.

The important points to bear in mind in connection with milk depôts are:—

- (1) That the farm or farms from which the milk is supplied, as well as the milk depôt must be directly under the control of the responsible officers of the Corporation, and that the contractors must supply the milk under stringent conditions laid down by the Corporation.
- (2) That the infants who receive the milk from the depôt must be selected by medical men, or by Health Visitors, acting under the direction of the Medical Officer of Health.

As your Committee may desire to be informed as to the probable cost of a milk depôt, I have extracted the following information from Dr. McCleary's book on Milk Depôts.

MILK DEPÔTS.

		LIVERPOOL.			1902.			1903.		
		1901.								
		£	s.	d.	£	s.	d.	£	s.	d.
Expenditure	...	1,874	8	10	4,334	18	11	4,259	3	5
Income	...	518	0	2	1,534	13	7	2,230	11	1

		ST. HELENS.			1902-1903.			1903-1904.		
		1900-1901.			1901-1902.					
Expenditure	...	471	3	2	402	16	3	440	4	6
Income	...	328	9	5	245	16	3	208	16	8

The initial cost of machinery and appliances in the six of the British depôts is set out as follows:—

	£		£
Battersea	150*	Leith	150
Dundee	200	Liverpool	640
Glasgow	650	St. Helens	235

* To which must be added £250 for alterations.

Considerable interest has recently attached to the efforts of the Corporation of Huddersfield to reduce the infant mortality in that town, and I am indebted to the Medical Officer of Health for the following information, which may be of interest in connection with this report. As a result of a special report on infantile mortality in the Borough of Huddersfield, it was resolved that certain steps should be taken with a view to the reduction of this mortality as follows:—

- (1) The appointment of two fully qualified and registered lady medical practitioners to act as Health visitors.
- (2) Small payments to midwives and registrars of births for notification of births.
- (3) The establishment of a pure milk depôt in connection with a day nursery.

The duties of the Health Visitors consist in (a) visiting the homes where births have occurred; (b) giving advice as to rearing and nursing children; (c) enquiries *re* infantile deaths; (d) investigation of cases of illness among school children; (e) inspection of workshops and work-places where females are employed; (f) generally to carry out the instructions of the Medical Officer of Health.

The Mayor of Huddersfield, Mr. B. Broadbent, greatly interested himself in the matter of saving infant life, and was instrumental in forming a voluntary association to co-operate with the Educational and Health Authorities in all matters relating to public health.

One means of encouraging mothers in their endeavours to rear their children took the form of a birthday present of £1 from the Mayor to each baby born in a certain district of Huddersfield on its attaining the age of 12 months.

In referring to the various steps which have been taken in Huddersfield with a view of saving infant life, the Medical Officer of Health points to the extremely low rate of infantile mortality for 1905, which was 119, as compared with 142, the mean for the 10 years 1895—1904.

But owing to favourable meteorological conditions in 1905 the infant mortality was low throughout the country. In Cardiff during that year the proportion of deaths under one year of age per 1,000 births was 118, as compared with 153 in the 10 years 1895—1904, a still greater reduction than that shown in Huddersfield.

With regard to the insertion of clauses relating to the milk supply in a Local Act of Parliament, I may mention that I have on previous occasions submitted for your consideration those provisions which have been adopted by the Manchester Corporation and by some other Local Authorities, and which would seem to be suitable for the purpose of obtaining a better control over the supply and sale of milk.

I attach great importance to the special cleansing of streets and the flushing of sewers and street gullies during the hot weather, and to the reduction of the amount of dust caused by electric tramcars, motor cars, and other vehicles. The beneficial effects of rain are seen in the reduction in the mortality figures in wet and cool summers. It is advisable, therefore, to imitate nature in this direction as far as possible.

There has, I believe, in the past been an undue economy in the use of water for sanitary purposes, particularly in times of drought during the hot weather, when there was a possibility of the public supply being deficient in quantity.

The necessity for this economy is not likely to recur to anything like the same extent as formerly, and I have, therefore, to recommend an increased use of water for the streets, sewers, and street gullies throughout the town during the summer, paying special attention to those districts in which the rate of infant mortality is comparatively high.

I have the honour to be, Gentlemen,

Your obedient Servant,

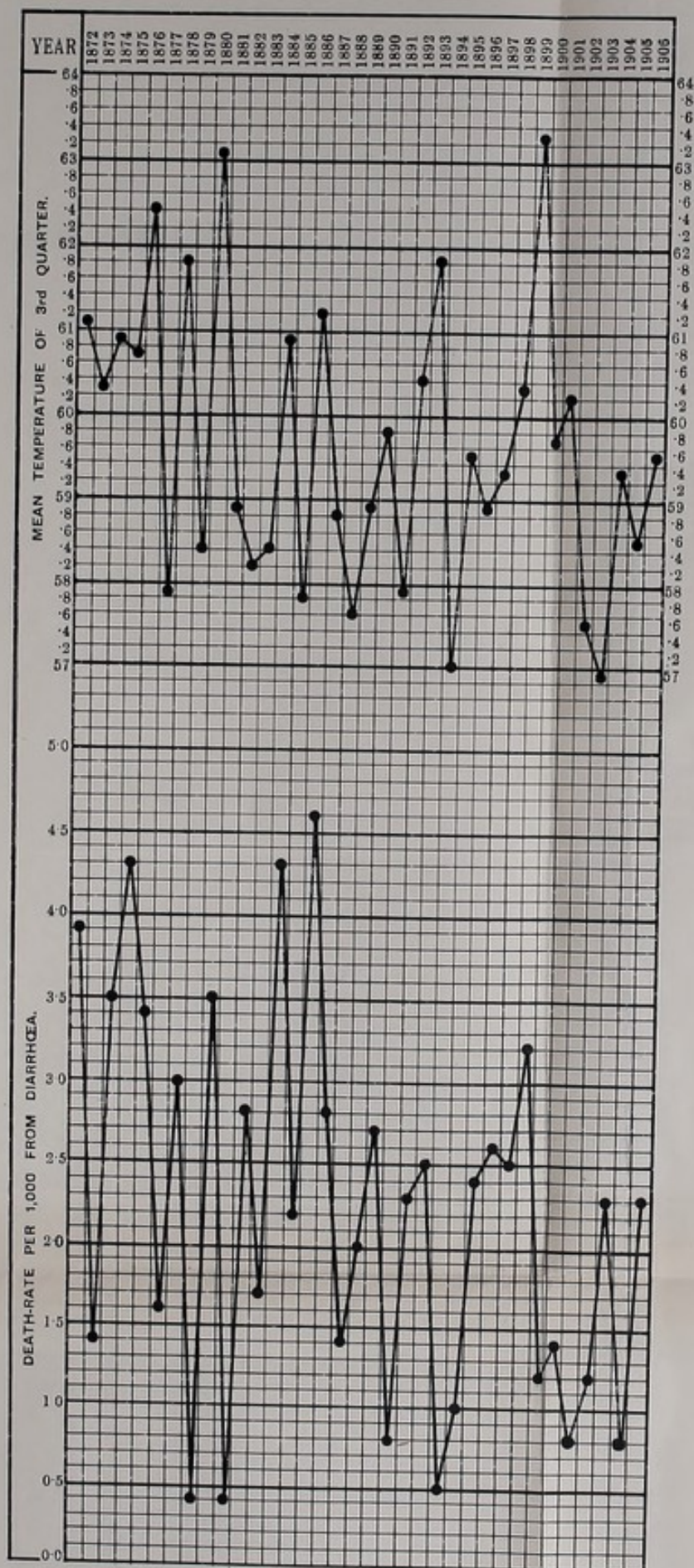
EDWARD WALFORD, M.D.,

MEDICAL OFFICER OF HEALTH.

CITY OF CARDIFF.

Chart showing the influence of temperature on the Diarrhoea death-rate during the Summer Quarters of the Years 1872-1906.

APPENDIX.



Map of CARDIFF

The red spots show the distribution of the fatal cases of diarrhoea amongst infants under one year of age in the third quarter of 1906.





