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City and Port of Cardiff.

ANNUAL REPORT

FOR 1929

OF THE

Medical Officer of Health and School Medical Officer.

CARDIFF:
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PREFACE.

A Public Health Programme.

The year 1929 was one of departmental stocktaking rather than administrative progress. The Local Government Act, 1929, opened up questions affecting the adjustment and redistribution of the health services, some of which required an immediate answer. Time had therefore to be devoted to preparing the way for the impending transfer of the medical functions of the Guardians. Further, the accumulated experience of the Council as a health authority pointed to the need for new powers in many directions and the opportunity was taken to seek them through an Omnibus Bill prepared and promoted during the year. Again, the report on mental deficiency prepared by an Inter-Departmental Committee of the Board of Education and the Board of Control, in anticipation of which developments had been delayed, was issued, but at a time when bigger problems of reorganisation of education have tended to overshadow its recommendations. Above all, the state of trade and industry in this area has retarded public health progress during the year.

The present seems, therefore, an appropriate time for enumerating some of the more obvious lines of action which require to be taken in the interest of the health of the people. They are set out below in order depending partly on the branch of health work through which they may be approached, partly on their practicability, partly on their intrinsic importance and partly on the suitability of the present time for pursuing them.

A. General Health and Sanitation :—

(1) Relief of overcrowding in dwelling-houses and improvement of living conditions generally. More than 50 per cent. of the families coming under the observation of this Department are still living more than one family to a house, and many of these houses are grossly overcrowded (see page 63).

(2) Abolition of insanitary types of closet accommodation, particularly the hand-flushed closet so prevalent in this area. There are approximately 14,000 hand-flushed closets in Cardiff.

(3) Provision of sanitary dust-bins for dwelling-houses and other premises. Not more than 20 per cent. of the houses are thus equipped.

B. Hospital Provision :—

Co-ordination of hospital provision both within and without the Council's own organisation ; modernisation of some institutions of the Council ; and the provision of new accommodation for needs at present inadequately met. In particular :—

(1) Increased and improved accommodation for communicable diseases.

(2) Administrative separation of the hospital wards at the City Lodge from the Workhouse and the provision of a proper receiving and out-patient department. The erection and coming into use of Llandough Hospital will emphasise the need for the latter.

(3) Improved facilities for the care of fractures and the prevention of deformities and crippledom.

(4) Improved, increased and, perhaps, centralised accommodation for maternity, ante-natal and post-natal cases.

(5) Increased provision for the diseases of children, especially for preventive treatment of the kind given at the Lord Pontypridd Hospital.

(6) Increased accommodation for diseases of the ear, throat, nose and eye, especially in children and young persons.

C. Maternity and Child Welfare :—

In addition to the requirements mentioned in connection with hospital provision :—

(1) A home for mothers and infants for fostering and restoring breast-feeding.

(2) Health centres for promotion of mothercraft, including day-nursery provision for young children whose health or home conditions are unsatisfactory.
(3) Accommodation for the treatment of mothers and infants suffering from gonorrhœal infection, with special reference to the prevention of blindness due to ophthalmia neonatorum.

D. School Health Service :—
(1) Adequate accommodation for the Central Clinic, if possible in close association with hospital wards.
(2) Extension of open-air school provision.
(3) Provision of nursery schools or classes in certain areas.
(4) Special classes for mentally retarded children.
(5) Extension and improvement of special schools for the more retarded children.

E. Mental Deficiency and Juvenile Delinquency :—
(1) Adequate colony accommodation for trainable defectives.
(2) Better classification and segregation of untrainable defectives in existing institutions.
(3) Improved and extended occupation and training centres.
(4) Child guidance centre for children not defective but presenting problems of behaviour.

This list is far from being exhaustive, but it is probably comprehensive enough to indicate the variety and extent of the problems of physical and mental health which so far have been tackled only partially or not at all. Some of them are of the kind for which the Local Government Act, 1929, was intended to facilitate the provision.

The Cardiff Hospitals.

In view of the need for a comprehensive examination of the hospital problem in Cardiff, the existing provision deserves careful consideration. For this purpose a statement is included in Section 6 of the Report, setting out the beds available as at 1st April, 1930, the "appointed day" for transfer of poor-law functions. It reveals the magnitude of the institutional responsibilities for the sick which the Council have already undertaken, and of the experience they have acquired as hospital managers. The reconstituted Hospitals Sub-Committee, it may be noted, includes the Chairmen of all the Committees or Sub-Committees concerned with the management of these institutions. Council institutions contain over 2,000 beds for those requiring medical and nursing care, most of which are reserved for the population of the city, as against 677 beds in voluntary hospitals, considerably less than half of which are regularly used by the people of Cardiff. In addition, although no beds for tuberculosis are specifically set aside for Cardiff in institutions of the Welsh National Memorial Association (virtually a statutory joint authority for the treatment of tuberculosis for the whole of Wales and Monmouthshire), they contain on an average 109 cases from the city at any one time. It should be noted that by far the greatest number of beds provided by the Council are for the accommodation of chronic cases and the mentally afflicted or defective. There is a crying need for more and better provision for the acutely ill, which will partly be met by the erection of Llandough Hospital, the proposals under consideration for extending the Isolation Hospital and the Welsh National Memorial Association's scheme for building a new hospital for tuberculosis in this vicinity.

General Health Service.

The population estimated by the Registrar-General (224,200) is almost 3,000 less than his estimate for 1928. This reduction scarcely accords with the impressions of the officers of this Department, but the estimate has been accepted as a basis for the birth and mortality rates given in this Report.

The decline in the birth-rate, which is a notable feature of the vital statistics of Cardiff and the country generally during recent years, continued during 1929. The rate for Cardiff was 17·5 per 1,000, and, although this rate is the lowest ever recorded, it was not so low as the rates for England and Wales and the 107 Great Towns, which were 16·3 and 16·7 per 1,000 respectively. It will be seen on reference to Table V (Appendix I) that actually there are municipal wards in Cardiff where during the year the number of deaths exceeded the number of births, viz., Riverside, Plasnewydd and Penylan. On the other hand, several of the wards showed a great excess of births over deaths, viz., South, Grangetown, Splott, Llandaff and Gabalfa.

The excess of births over deaths for the city generally (1,028) was still lower than in previous years (1,409 in 1928 and 1,233 in 1927).

The crude death-rate (12·9 per 1,000) shows an increase as compared with that of 1928 (11·7 per 1,000), mainly due to the prevalence of influenza and measles. The mortality from measles (113 deaths, being at the rate of 0·50 per 1,000) exceeded anything experienced since 1912, but it is impossible in the absence of knowledge of all the cases to say whether the excess was due merely to heavy incidence or to the prevalence of a more fatal type of the disease.

The rate of infant mortality (84 per 1,000 births) was higher than in 1928 (77 per 1,000) when it was well below the average. This increase is also mainly attributable to measles.

The increase of diphtheria, to which attention has frequently been drawn, is reflected in a rise in the number of cases notified from 487 in 1928 to 735 in 1929 and of deaths in the same periods from 16 to 30. The case-mortality of 4·08 per cent. based on these figures is relatively low. As usually happens, the rise in diphtheria was associated with a correspondingly increased prevalence of scarlet fever, the numbers in 1928 and 1929 being 263 and 640 respectively.

Further information regarding the matters referred to above will be found in the body of the Report. In addition, special attention may be drawn to the following items :—

A report by Dr. E. P. Cathcart, Professor of Physiology, Glasgow University, on the dietaries of families in Cardiff (Appendix V, page 105).

A report on the result of Mr. Matheson's inquiry into the cause of the eruption on bathers in Roath Park Lake ; a very interesting problem and one which appears to be unique in this country (page 83).

A report by Dr. Panes on atmospheric pollution in Cardiff (Appendix III, page 98) and interesting statistics on the consumption of gas and electricity in this connection kindly supplied by the Secretary of the Cardiff Gas Light and Coke Company and the City Electrical Engineer (pages 85 and 86).

An account of five different occasions during 1929 on which smallpox was introduced into Cardiff (page 18).

An account of the first nine months' working of the arrangement with the Queen's Institute for District Nursing for the home-nursing of cases of pneumonia (page 23).

A report on the first year's working of the Lord Pontypridd Hospital, Dulwich House (page 30).

An extract of figures gathered by Dr. Dan Powell, Principal Medical Officer of the Welsh National Memorial Association, as to delay in notifying cases of tuberculosis (page 41).

An attempt to evaluate the benefits of attendance at child welfare consultations by comparison of the mortality of attenders with that of the general run of infants of corresponding age (page 51).

A further note on ray treatment for preventive purposes (page 59).

A note on measures taken to maintain a reasonable standard of repair and cleanliness on Corporation Housing Estates (page 64).

A report by Mr. Dixon on his first year's work as Public Analyst (page 72).

Port Sanitary Service.

The traffic at the port showed a slight increase as compared with last year, 8,132 vessels of 5,543,400 aggregate tonnage arriving, as against 7,735 of 5,085,415 tons in 1928. As bearing on the receipt of advance messages of communicable disease, it is important to observe that there is no material increase in the proportion of vessels arriving from foreign which carry wireless installations.

The most important development during the year was the great increase of deratisation resulting from the almost universal adoption throughout the world of the International Sanitary Convention, 1926. It has involved considerable alteration in the working arrangements of the staff. Incidentally, the issue of certificates has become a not unimportant source of revenue.

Mr. Matheson has continued his very valuable investigation on the rats and rat-fleas found on vessels, in warehouses and in the town generally. His report is not included in the Annual Report for 1929, but is reserved for publication along with the findings of later years.

School Health Service.

In addition to full details of all the work of this branch of the service, in the form required by the Board of Education, special reports which deserve attention are included, as follows :—

A report on the work carried out at Greenhill Open-Air School during the year (page 127).

A report on the work of the special classes for stammerers (page 132).

A report on X-ray work dealing with both the treatment of ringworm and radiography (pages 136 and 137).

A full report on the orthopædic scheme, including a very useful survey of the cases of poliomyelitis (infantile paralysis) known to the Department (page 140).

Mental Deficiency Service.

A brief survey of the problem of mental deficiency as it affects Cardiff is included along with the usual statistical tables (page 161).

As in previous years, Mr. Chant, Chief Clerk, has been mainly responsible for putting together the Report, while Mr. Pyatt and Mr. Holbourn, Chief Inspectors respectively of the town and port, have prepared most of the information contained in the sections bearing on their work.

RALPH M. F. PICKEN,
Medical Officer of Health and School Medical Officer.

Public Health Department,
City Hall, Cardiff,
July, 1930.

CITY OF CARDIFF.

PUBLIC HEALTH DEPARTMENT.

EXPENDITURE, 1928-29.

Service	Gross Expenditure	Income (Excluding Government Grants)	Net Cost of Service	Government Grants.	Net Cost to the Rates	Approximate Cost in pence to the Rates
HEALTH SERVICES:—	£ s. d.	£ s. d.	£ s. d.	£ s. d.	£ s. d.	
Sanitary Expenses	12,567 8 5	380 4 5	12,187 4 0	773 9 3	11,413 14 9	
Sale of Food and Drugs Acts ...	894 17 2	21 18 0	872 19 2	...	872 19 2	
Diseases of Animals Acts ...	332 14 10	4 4 8	328 10 2	...	328 10 2	
Midwives Acts	21 16 2	...	21 16 2	...	21 16 2	
Shops Acts	535 4 6	10 16 0	524 8 6	...	524 8 6	
Poisons and Pharmacy Act ...	...	1 5 6	...	...	...	2·31
Blind Persons Act, 1920 ...	1,463 11 8	5 1 6	1,458 10 2	...	1,458 10 2	
Penylan Observatory	186 15 3	...	186 15 3	...	186 15 3	
	16,002 8 0	423 10 1	15,580 3 5	773 9 3	14,806 14 2	
Less Poisons and Pharmacy Act—Excess Income over Expenditure	...	...	1 5 6	...	1 5 6	
			15,578 17 11	773 9 3	14,805 8 8	
Sanatorium (City Isolation Hospital)	15,061 17 6	1,632 3 3	13,429 14 3	...	13,429 14 3	2·37
Caerau Smallpox Hospital ...	2,068 12 8	333 5 0	1,735 7 8	...	1,735 7 8	
	33,132 18 2	2,388 18 4	30,743 19 10	773 9 3	29,970 10 7	4·68
PREVENTION AND TREATMENT OF TUBERCULOSIS	10,894 1 1	425 10 11	10,468 10 2	...	10,468 10 2	1·64
MATERNITY AND CHILD WELFARE SERVICE	12,791 4 11	3,323 7 1	9,467 17 10	4,689 11 10	4,778 6 0	0·75
VENEREAL DISEASES	6,054 7 4	...	6,054 7 4	4,567 18 3	1,486 9 1	0·23
SCHOOL MEDICAL SERVICE ...	10,186 11 6	462 13 3	9,723 18 3	4,861 19 2	4,861 19 1	0·76
MENTAL DEFICIENCY SERVICE ...	7,920 13 11	512 9 0	7,408 4 11	3,520 18 1	3,887 6 10	0·61
PORT SANITARY SERVICE	5,617 5 6	778 17 6	4,838 8 0	2,442 8 8	2,395 19 4	0·37
TOTALS	86,597 2 5	7,891 16 1	78,705 6 4	20,856 5 3	57,849 1 1	9·04

	s.	d.
Rate for all Municipal and Education purposes ...	10	4
Rate for Poor Law purposes	3	0
Total	13	4

1 rate = £7650 Rateable value - means from

GENERAL HEALTH SERVICE.

Section 1.

GENERAL STATISTICS.

Area (acres) :—	
Including inland water, foreshore and Flatholm...	13,628
Excluding foreshore and Flatholm	11,984
Excluding inland water, foreshore and Flatholm	11,580
Population (Registrar-General's estimate)	224,200
Number of persons per acre (exclusive of foreshore and Flatholm) ...	18·7
Number of inhabited houses (estimated)	43,000
Number of inhabited houses per acre (exclusive of foreshore and Flatholm)	3·59
Average number of persons per occupied house	5·2
Rateable value (October, 1929)	£1,970,995
Estimated product of a penny rate	£7,650

Section 2.

VITAL STATISTICS.

Births.

The numbers of births and still-births registered during the year, arranged in wards and sub-divided according to sex and legitimacy, are shown in Table I, Appendix I. The births registered according to the Registrar-General are summarised in the following brief statement :—

	Legitimate	Illegitimate	Totals
Males	1,892	77	1,969
Females	1,862	96	1,958
Totals	3,754	173	3,927
Rate per 1,000 population	16·7	0·8	17·5

The rates for former years and for other places are given for comparison :—

	Cardiff			England and Wales	107 Great Towns
	1929	1928	1919-1928	1929	1929
Birth-rate per 1,000	17·5	18·0	21·1	16·3	16·7

The birth-rate in each ward is given in Table V, Appendix I.

Deaths.

The deaths in 1929, classified according to age and cause (Registrar-General's short list), are set out in Table III, Appendix I. The ward distribution of the deaths and death-rates is included in Table V, and the causes of infant deaths in Table IV, Appendix I.

The following is the abbreviated extract of the death statistics required by the Ministry :—

	Males.	Females.	Total.	Death-rate per 1,000.
Deaths from all causes ...	1,516	1,383	2,899	12·9

	Deaths.	Rate per 1,000 Births,
Women in childbirth :—		
Sepsis	3	0·76
Other causes	11	2·80
Total	14	3·56

	Deaths.	Rate per 1,000 Births.
Infants under one year of age :—		
Legitimate	309	82
Illegitimate	21	121
Totals	330	84

	Deaths.	Rate per 1,000 Population.
Measles	113	0·50
Whooping Cough	24	0·11

	Deaths.	Rate per 1,000 Births.
Diarrhœa (under 2 years)	44	11 2

Certain of these rates are tabulated for comparison with previous years and other places as follows :—

	Cardiff			England and Wales	107 Great Towns
	1929	1928	1919-1928	1929	1929
Death-rate per 1,000	12·9	11·7	12·3	13·4	13·8
Infant Mortality (Deaths under 1 year per 1,000 Births)	84	77	82	74	79
Deaths of women in Childbirth per 1,000 Births :—					
Sepsis	0·76	2·44	2·25	1·80	1·79
Other Causes	2·80	3·42	2·72	2·53	2·40
Totals	3·56	5·86	4·97	4·33	4·19

Age Distribution of Population and Deaths. — The following table shows the estimated population, deaths and death-rates at several age periods :—

Age Periods—Years	Estimated Population	Number of Deaths	Death-rate per 1,000
0— 5	19,600	540	27·5
5—15	39,260	111	2·8
15—25	42,560	121	2·8
25—45	67,950	368	5·4
45—65	42,970	748	17·4
65 and upwards	11,860	1,011	85·2
All Ages	224,200	2,899	12·9

Cancer.

The number of deaths from cancer or malignant disease recorded in 1929 was 284, giving a death-rate per thousand of the population of 1·27 (males 1·23, females 1·30) as compared with 258 deaths and a death-rate of 1·13 per thousand (males 1·04,

females 1·23) in 1928, and with a death-rate of 1·11 (males 1·04, females 1·17) during the ten years 1919-28. The deaths during 1929 are analysed according to age, sex and localisation of the disease in the following table :—

Cancer—Malignant Disease	2-5 years		5-15 years		15-25 years		25-45 years		45-65 years		65-75 years		75 years and upwards		All Ages		
	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	Both Sexes
Buccal Cavity ...	...	...	...	...	...	...	...	...	12	...	8	1	5	...	25	1	26
Pharynx, Œsophagus, Stomach, Liver and Annexa	...	...	...	...	...	...	1	2	26	20	16	15	9	8	52	45	97
Peritoneum, Intestines and Rectum ...	...	...	...	...	...	...	2	...	11	18	13	8	8	7	34	33	67
FemaleGenital Organs	...	...	...	...	...	...	...	7	...	11	...	4	...	3	...	25	25
Breast	...	...	...	...	...	...	...	4	...	14	...	6	...	1	...	25	25
Skin	...	...	...	...	...	...	...	1	...	...	2	...	...	1	2	2	4
Other or Unspecified Organs	1	...	...	1	1	...	3	1	8	9	9	4	2	1	24	16	40
Totals ...	1	...	...	1	1	...	6	15	57	72	48	38	24	21	137	147	284

For comparison the cases voluntarily notified during 1929 are similarly analysed:—

Cancer—Malignant Disease	15-25 years		25-45 years		45-65 years		65-75 years		75 years and upwards		All Ages		
	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	Both Sexes
Buccal Cavity	...	...	...	...	6	...	3	...	1	...	10	...	10
Pharynx, Œsophagus, Stomach, Liver and Annexa	...	...	...	1	3	2	3	3	1	1	7	7	14
Peritoneum, Intestines and Rectum ...	...	...	1	1	2	2	4	1	1	2	8	6	14
Female Genital Organs	...	...	...	...	...	8	...	4	...	...	...	12	12
Breast	...	...	...	3	...	4	...	3	...	2	...	12	12
Skin	...	...	...	...	...	...	...	...	...	...	...	...	...
Other or Unspecified Organs	...	...	...	...	3	...	2	1	...	...	5	1	6
Totals	...	...	1	5	14	16	12	12	3	5	30	38	68

Cardiff Royal Infirmary.—Records on the forms drafted and supplied by the Ministry of Health have been kept by the Hospital Registrar, according to an arrangement with this Department, showing in detail the history, treatment and progress of cases of cancer of the breast and of the uterus since 1st January, 1926, and of the rectum since 1st January, 1928. A very simple form of return is given here, designed for the sole purpose of indicating the length of survival of the cases.

Cancer of Breast.

	Stage of the Disease *			Totals	Percentage
	Class I.	Class II.	Class III.		
Cases treated in 1926 :—					
Number	8	6	16	30	...
Discharged alive	8	6	15	29	96·7
Surviving at 31st December, 1929 ...	7	4	4	15	50·0
Cases treated in 1927 :—					
Number	6	11	29	46	...
Discharged alive	5	11	28	44	95·6
Surviving at 31st December, 1929 ...	5	6	10	21	45·6
Cases treated in 1928 :—					
Number	7	4	24	35	...
Discharged alive	7	3	20	30	85·7
Surviving at 31st December, 1929 ...	5	2	10	17	48·6
Cases treated in 1929 :—					
Number	9	13	13	35	...
Discharged alive	9	13	12	34	97·1
Surviving at 31st December, 1929 ...	9	12	11	32	91·4

Cancer of Uterus.

	Number	Percentage
Cases treated in 1926 :—		
Number	29	...
Discharged alive...	29	100·0
Surviving at 31st December, 1929	2	6·9
Cases treated in 1927 :—		
Number	19	...
Discharged alive	19	100·0
Surviving at 31st December, 1929	3	15·8
Cases treated in 1928 :—		
Number	37	...
Discharged alive...	37	100·0
Surviving at 31st December, 1929	13	35·1
Cases treated in 1929 :—		
Number	34	...
Discharged alive	34	100·0
Surviving at 31st December, 1929	31	91·2

Cancer of Rectum.

	Number	Percentage
Cases treated in 1928 :—		
Number	20	...
Discharged alive...	17	85·0
Surviving at 31st December, 1929	4	20·0
Cases treated in 1929 :—		
Number	25	...
Discharged alive	17	68·0
Surviving at 31st December, 1929	9	36·0

These tables bring out vividly the diminishing chance of survival with delay in seeking treatment for cancer of the breast, and the very different prospect for sufferers from the disease in the less accessible sites.

* Class I.—Cases in which, so far as could be ascertained, the growth was entirely confined to the breast, the axillary glands not being invaded.

Class II.—Cases in which the axillary glands were already invaded but in which there was no evidence of involvement of any other neighbouring or distant organ or tissue.

Class III.—Cases in which either the adjacent or distant organs or tissues were involved, *e.g.*, the pectoral muscles, the skin when ulcerated, the cervical glands, the opposite breast, etc.

(*Reports on Public Health and Medical Subjects*, No. 34 ; Ministry of Health.)

Deaths from Road Accidents.

The number of deaths from violence (excluding suicide) and the number and proportion of these due to road accidents in each year since 1923 are shown in the following table :—

Year	Total Deaths from Violence (excluding Suicide)	Deaths from Road Accidents	
		Number	Percentage
1923	100	14	14·0
1924	97	21	21·6
1925	91	23	25·3
1926	107	17	15·9
1927	103	20	19·4
1928	103	26	25·2
1929	98	16	16·3

As previously pointed out, the very rapid increase in mechanically propelled vehicles has not been associated with a comparable rise in the number of road accidents in Cardiff.

The deaths from road accidents in 1929 have been analysed in such a way as to show the type of vehicle and the class of individual involved. The results are presented in the following table :—

Vehicles	Fatal Accidents	Persons Killed					
		Drivers	Motor Cyclists	Passengers	Cyclists	Pedestrians	Totals
Heavy motor vehicles	5	...	...	2	...	3	5
Light motor cars	8	...	...	1	...	7	8
Motor cycles	2	...	1	...	...	1	2
Light motor cars and bicycles (non-motor)	1	...	...	...	1	...	1
Totals	16	...	1	3	1	11	16

Vehicles propelled by internal combustion engines have been responsible for the great majority of the fatalities, as might be expected since they now largely preponderate on the roads. Almost three-fourths .of the deaths occurred among pedestrians.

Section 3.

ACUTE COMMUNICABLE DISEASES.

Notifications, Admissions to Hospital, Deaths and Fatality Rates.

Disease	Cases Notified	Cases admitted to Hospital	Deaths	Percentage Fatality of Cases Notified
Smallpox	8	7	...	0·00
Scarlet Fever	640	512	2	0·31
Diphtheria	735	708	30	4·08
Enteric Fever	18	17	4	22·22
Pneumonia*	295	16	207	...
Puerperal Fever	34	8	3	8·82
Puerperal Pyrexia	82	5	...	...
Cerebro-Spinal Fever	4	3	1	25·00
Acute Poliomyelitis	7	2	2	28·57
Acute Polioencephalitis	1	...	...	0·00
Encephalitis Lethargica	6	3	2	33·33
Dysentery	1	...	1	100·00
Ophthalmia Neonatorum	60	...	2	3·33
Erysipelas	82	14	7	8·54
Malaria	5	...	2	40·00
Chickenpox	1,117	21	...	0·00

Smallpox.

Eight cases of smallpox were notified during the year, none of whom died. The infection was introduced on five different occasions, probably in all cases from infected areas in Glamorgan and Monmouthshire, although the connections were not definitely established in three instances in spite of the most searching investigations.

The first group of cases was discovered in the Central ward. An unvaccinated woman, aged 30, sickened with the disease on 21st January, and developed the rash on the 25th. A medical practitioner brought the case to the notice of the Public Health Department on 30th January, and the case was immediately removed to hospital. This woman's unvaccinated baby, aged 6 months, was also found to be suffering from the disease, having sickened on the 25th and developed the rash on the 28th January. Investigations made at the house revealed the fact that another unvaccinated child, aged 6 years, had recently recovered from what was thought to be chickenpox, although no medical man had seen her. This child was found to have about a dozen scars on her face, arms and legs, and there is no doubt that she had had a recent attack of smallpox. Her grandmother, who had not been vaccinated since infancy was also found to have a few scattered lesions peripherally disposed on her body, these being almost healed on the date of examination (30th January). She was also removed to hospital. Further inquiries elicited the information that the grandmother and the child of 6 years had been on a visit to an infected area in Glamorgan from 22nd December to 27th December, 1928. Both sickened with smallpox within a fortnight of their return to Cardiff, so that there can be very little doubt as to the source of their infection, although the actual infecting case was not discovered. No further cases occurred in Cardiff from this focus.

The next case came to light on 19th August, when an unvaccinated girl of 16 years, living in the Central ward, was notified as a case of chickenpox. In conformity with the usual practice, the case was visited on the same day by a medical officer of

* Only such cases of pneumonia as fall into the categories "acute primary" and "influenzal" are notifiable. Deaths from all forms of pneumonia are included in the fourth column.

the Department and found to be a case of smallpox. This girl had been on a visit to a town in Monmouthshire, and had there sickened with the disease on 21st July and developed the rash on the 26th. She was not seen by a medical practitioner until after her return to Cardiff. It was ascertained from her that other inmates of the house in Monmouthshire where she had stayed had a similar eruption, and a subsequent investigation by the County Medical Officer of Health concerned established the fact that these were " missed " cases of smallpox. No secondary cases occurred in the city from this source.

The next two cases were unusual, in that they could not be linked with any ascertained or probable source of infection. An unvaccinated girl of 12 years, living in the Cathays ward and attending a Cardiff Secondary School, sickened with smallpox on 15th September and developed the rash on the 20th. The case was notified and removed to hospital on 24th September. This girl had attended school while in an infectious condition up to the 23rd September, and it was considered advisable to regard the whole school population as contacts ; daily supervision and following up of absentees was therefore carried out for a period of 21 days from 24th September. No secondary cases having arisen up to 15th October, the school was regarded as free of infection. Another case, however, came to light on 12th November, when an unvaccinated girl of 12 years, living in the Adamsdown ward but taught in the same class as the previous case, was notified as a case of atypical chickenpox. She was found to be suffering from smallpox, having sickened on 1st November and developed the rash on 8th November. Obviously, no direct connection existed between the first and second cases, but the circumstances strongly suggested the existence of one or more " missed " cases amongst children attending the school. Arrangements were therefore promptly made for the medical inspection of all the children attending the school, and each child, stripped of all clothing except knickers, was closely examined by a female medical officer for evidences of recent or remote smallpox lesions. Children absent on the day of inspection were subsequently examined in the same way, but the findings were entirely negative. No other cases of smallpox had been notified in Cardiff during this particular period. Fortunately, the infection did not appear to have spread further from the unknown case associated with this school.

The last case during 1929 occurred in a maternity home, where the matron sickened with the disease on 5th December, developing the rash on the 9th. The diagnosis was established on 12th December and the case was removed to hospital. The source of infection in this case was derived most probably from an infected area in Glamorgan or Monmouthshire. The home takes in patients from a very wide area and has a great number of visitors from the mining valleys. It was established that no patient or member of the staff of the home had smallpox prior to the matron sickening. On the discovery of the case, the whole personnel of the institution was vaccinated or re-vaccinated and the home was placed in quarantine for three weeks. No further cases occurred.

The experiences of the past year confirm the view now commonly held that the prevailing type of smallpox possesses a low degree of infectivity. None of the patients was seriously ill after the eruption had made its appearance.

The following table shows the vaccinal state of the cases :—

Age Period—Years	Number of Cases	Number Unvaccinated	Number Vaccinated in Infancy	Number Vaccinated and Re-vaccinated before Infection	Number Vaccinated or Re-vaccinated after Infection
Over 40 ...	1	...	1	...	1
20–40 ...	2	2	...	...	2
10–20 ...	3	3	...	...	1
Under 10 ...	2	2	...	...	2
Totals ...	8	7	1	...	6

Vaccinal State of the Population.—The following table gives the results of the labour of the vaccination officers in connection with 4,148 children during the year :—

Successfully Vaccinated	Insusceptible	Postponed	Certificates of Exemption	Died Unvaccinated	Unaccounted for (including cases removed to other districts)
1,797	15	63	1,520	271	482

Comparison with previous years is made in the following table :—

	Percentage of Infants not returned as Vaccinated	Percentage of Certificates of Exemption
Nine years in the period 1901 and 1910	33·5	4·3
Eight „ „ „ 1911 and 1920	54·2	24·1
1921	42·5	29·5
1922	47·7	37·2
1923	35·5	23·5
1924	44·2	30·5
1925	48·1	31·3
1926	54·2	34·0
1927	52·2	29·5
1928	47·8	33·2
1929	56·7	36·6

Chickenpox.—In order that the discovery of aberrant cases of smallpox might be facilitated, chickenpox has been compulsorily notifiable since 17th March, 1927. During 1929 the number of cases of chickenpox notified was 1,117, and all doubtful cases, all cases over ten years of age—whether vaccinated in infancy or not—and all unvaccinated cases under ten years were visited by the medical staff.

Enteric Fever.

The number of notified cases of enteric fever was 18, and although this number is higher than has been usual during recent years, there is no indication that there is likely to be renewed prevalence of the disease in Cardiff. The number of deaths attributed to enteric fever during 1929 was four, corresponding to a death-rate per 1,000 of 0·02.

Scarlet Fever.

There was a great increase in the number of cases of scarlet fever notified as compared with the numbers in the few preceding years. The number notified was 640, as against 263 in 1928. Since 1921, when there were 683 cases, the number of cases each year has been relatively low, but for several years prior to that year the disease was very prevalent, as many as 1,351 being notified in 1920 and 2,166 in 1919. The number of deaths due to scarlet fever during 1929 was two, being equivalent to a death-rate of 0·01 per 1,000, showing that the disease continued to be of a mild type.

Diphtheria.

The number of cases of diphtheria occurring during the year also shows a considerable increase over the number of cases in 1928 and for many preceding years. This communicable disease was more prevalent than it had been since the years 1898-1902, during which its incidence was heavy. A high incidence may be anticipated

for another year or so, especially during the winter months. During 1929, 735 cases were notified, compared with 487 in 1928. The disease in some instances has been of a virulent type, but a case mortality of 4·08 per cent. indicates either that the the majority of the cases have not been excessively severe or that treatment was reasonably prompt, although the quality of the treatment provided in the Isolation Hospital must be counted as a factor in keeping down the fatality. Thirty deaths occurred, corresponding to a death-rate of 0·13 per 1,000 of the population, the rate in 1928 being 0·07 per 1,000.

Schick Testing and Active Immunisation.—Schick testing and active immunisation were continued during 1929 as far as the limitations of staff would permit. It was possible only to deal as a routine with children at seven schools, and the work done is set forth in the following table :—

SCHOOL CHILDREN.

School	Schick Tested	Positive		Positive Cases Immunised		Number Immunised but not Tested	Total Number Immunised
		Number	Percentage	Number	Percentage		
Roath Park C.—							
Boys	137	107	78·1	102	95·3	9	111
Girls	89	64	71·9	62	96·9	6	68
Infants	95	62	65·3	61	98·5	8	69
Marlborough Road C.—							
Boys	108	89	82·4	86	96·6	5	91
Girls	77	58	75·3	56	96·5	6	62
Infants	112	93	83·0	87	93·5	11	98
Kitchener Road C.—							
Boys	118	56	47·4	54	96·4	14	68
Girls	59	34	57·6	32	94·1	3	35
Infants	88	54	61·4	51	94·4	13	64
Llandaff N.—							
Boys	13	9	69·2	7	77·7	...	7
Girls	16	14	87·5	14	100·0	1	15
Infants	24	19	79·2	18	94·7	1	19
Hawthorn C.—							
Mixed	56	35	62·5	35	100·0	4	39
Infants	32	28	87·5	28	100·0	...	28
Llandaff North N.—							
Mixed and Infants	28	20	71·4	20	100·0	1	21
Llandaff C.—							
Mixed	26	20	76·9	20	100·0	2	22
Others	...	...	...	...	...	26	26
Totals ...	1,078	762	70·7	733	96·2	110	843

In addition, 96 children under school age were immunised (but not Schick tested) at child welfare centres.

Ophthalmia Neonatorum.

The following is a brief indication of the activity of the maternity and child welfare section of the Department in relation to ophthalmia neonatorum :—

Cases notified	60
Treatment—	
By Private Practitioners	12
,, ,, ,, assisted by District Nurses	14
At Child Welfare Centres, assisted by District Nurses	2
Institutional cases	28
At Cardiff Royal Infirmary	4
Results—	
Vision unimpaired	54
Vision impaired (one eye)	1
Certified as having died from the disease	2
Died from other causes	1
Left the District	2

During the year, 43 specimens of exudate from the eyes of individual infants notified or suspected to be suffering from ophthalmia neonatorum, including most of the notified cases, were submitted for microscopical examination for the presence of gonococci, with the following results :—

	Number.	Percentage.
Positive	6	14·0
Negative	37	86·0
Total	43	100

Non-Notifiable Acute Communicable Diseases.

The following statement shows the number of cases of usually non-notifiable communicable diseases which came to the knowledge of the Department during 1929 :—

Measles	1,479
Whooping Cough	177
Chickenpox*	1,117
Mumps	440

Measles.—Measles was very prevalent from the early part of the year until October. There were 113 deaths due to the disease during the year, being equivalent to a death-rate of 0·50 per 1,000 ; in 1928 the deaths numbered 21 and the death-rate was 0·09 per 1,000.

Whooping Cough.—The number of cases of whooping cough known to the Department during 1929 was less than for several years. The number of deaths certified as being due to the disease was 24, corresponding to a death-rate of 0·11 per 1,000, as against 28 deaths and a death-rate of 0·12 in 1928.

Diarrhœa, etc.—There were altogether 62 deaths due to diarrhœa and allied diseases ; 44 of these deaths occurred amongst infants under two years of age, giving a death-rate of 11·2 per 1,000 births, which rate corresponded exactly with that of 1928.

* Notifiable since 17th March, 1927.

Influenza.—A moderately severe epidemic of influenza occurred during the first quarter of 1929, and the disease became rather prevalent again in December. The number of deaths certified as being due to influenza during the year was 89. As usual, the following table is given to show the effect of these recurring epidemics on the deaths from all causes and those definitely connected with the respiratory system :—

Year	(1) Deaths from All Causes	(2) Deaths from Influenza and Respiratory Diseases	(3) Percentage of (2) in (1)
1917	2,433	471	19·4
1918	3,188	1,073	33·6
1919	2,652	666	25·1
1920	2,411	424	17·6
1921	2,452	429	17·5
1922	2,704	758	28·0
1923	2,721	484	17·8
1924	2,740	597	21·8
1925	2,916	534	18·3
1926	2,441	357	14·6
1927	2,853	639	22·4
1928	2,660	431	16·2
1929	2,899	514	17·6

Home Nursing of Pneumonia.—During the year an arrangement was made with the Queen's Institute of District Nursing for the home nursing of cases of pneumonia, the City Council undertaking to pay £50 per annum for the services rendered by the Institute irrespective of the number of cases dealt with. Some cases are referred to the Institute by general medical practitioners, and others, with the consent of the practitioners concerned, are referred by the Department. The necessary forms and record cards are provided by the Council, and the Institute reports monthly on all cases nursed under the scheme.

The following is a summary of the work done by nurses of the Institute in this connection from 1st April, 1929, when the scheme came into operation :—

Cases referred for home nursing	49
Visits	852
Cases in hand at end of year	2

Section 4.

CARDIFF ISOLATION AND SMALLPOX HOSPITALS.

Isolation Hospital.

The number of patients admitted to the Isolation Hospital (including the temporary Smallpox Annexe), the average daily number of patients under treatment, the number of patient-days and the average duration of residence are shown in the following table :—

Disease	Patients admitted	Average daily number of patients	Patient-days	Average duration of residence in days
Smallpox	1	0·1	30	30
Scarlet Fever	485	40	15,221	31
Diphtheria	643	83	30,392	47
Other Diseases	468	43	15,729	33
All Diseases	1,597	166	61,372	38

The annual report of the Medical Superintendent is given below :—

Report for 1929 *of John McGarrity, M.D., D.P.H., Resident Medical Superintendent of the Cardiff Isolation Hospital.*

" During the year there were admitted to the wards 1,597 patients, including a few members of the nursing and domestic staff of the hospital.

" The health of the staff was on the whole fairly satisfactory, though one nurse, who contracted enteric fever in the course of her duty, died. In addition, three nurses and two maids, shortly after arrival in hospital, contracted very mild attacks of diphtheria, and one nurse developed a mild attack of scarlet fever. No nurse or maid who was found to be immune to diphtheria and scarlet fever, either naturally or as the result of inoculations, contracted either of these diseases. In addition to a considerable number of minor ailments, 22 nurses and 19 maids suffered from attacks of tonsillitis, being a very much larger number than usual, and probably due in part to the fact that the nurses and maids were unduly overcrowded in their quarters.

" The work of testing the nurses and maids by means of the Schick and Dick tests was continued during the year. During the past five years (1925 to 1929 inclusive) 133 members of the nursing staff and 78 maids have been Schick tested ; 39 of the nurses and 25 of the maids were Schick positive, and of these, 26 nurses and 5 maids have been rendered definitely immune to diphtheria. During the past four years (1926 to 1929 inclusive) 117 nurses and 52 maids have been Dick tested and only 11 nurses and 3 maids were found to be positive reactors ; of these, 5 nurses have been immunised against scarlet fever. It is of interest to note that no nurse or maid was ever off duty as a result of any of the various inoculations given.

" During the year the usual lectures and tutorials have been given. In this connection the appointment of Sister Weir to the post of Sister Tutor has been a great help to Miss Chubb (Matron) and myself. Five nurses passed the preliminary examination in anatomy, hygiene, etc., and 4 failed, while 3 passed the Final State Examination in Fevers and 3 failed.

" The usual reports relating to the various infectious diseases treated in the hospital are given below.

" *Scarlet Fever.*—Five hundred and thirty-one patients were treated in the wards, of whom 485 were true cases of scarlet fever ; of the remainder, four merely suffered from tonsillitis, one from a septic rash following burns, and 32 from a variety of adventitious rashes. Nine patients were admitted as likely to be suffering from scarlet fever, but eight of these were in reality cases of measles, while one was a case of diphtheria. Six of the true cases of scarlet fever were sent into hospital as cases of diphtheria and one as a case of measles. Three deaths occurred among the scarlet fever patients ; in two instances death occurred in children who had developed scarlet fever following extensive burns, while the third patient was a woman who collapsed suddenly while having a bath. Four hundred and seventy-one patients suffered from simple scarlet fever, six were septic in type, while eight were subseptic. Sixty patients in all received injections with scarlet fever antitoxin.

" The principal complications are noted below :—

Complication.	Cases.	Percentage.
Arthritis	23 ...	4·7
Otorrhœa	37 ...	7·6
Rhinitis	26 ...	5·3
Late albuminuria	17 ...	3·5
Late adenitis	38 ...	7·8
Jaundice	1 ...	0·2
Tonsillitis	14 ...	2·9
Diphtheria	3 ...	0·6
Mastoid	1 ...	0·2

Table showing Age and Sex of Scarlet Fever Patients.

	0-5 years	5-10 years	10-15 years	15-25 years	25-45 years	Over 45 years	Totals
Recovered—							
Males	46	96	34	15	4	2	197
Females	57	133	55	30	9	1	285
Died—							
Males	1	...	...	...	...	...	1
Females	1	...	...	...	1*	...	2
Totals ...	105	229	89	45	14	3	485

Hospital mortality—0·62 per cent.

" *Diphtheria.*—Seven hundred and thirty-five patients were admitted to the wards, of whom 643 were true cases of diphtheria, while the remaining 92 were suffering from a variety of complaints, viz., seven from laryngitis, 40 from tonsillitis, one from tonsillitis and septicæmia (who died), one from tonsillitis and bronchiectasis, one from rhinitis, one from syphilitic ulceration of the throat, one from quinsy, 30 were merely carriers (although in three of these cases difficulty in diagnosis had arisen because of the presence of a septic condition of the throat), abscess of the neck following adenitis and mumps respectively, while six patients were in reality suffering from scarlet fever and four from measles. One of the true cases of diphtheria was admitted as a possible case of scarlet fever.

* Death due to accident.

Table showing Type of Diphtheria and Mortality.

Type	Number	Died	Mortality per cent.
Faucial only	437	6	1·37
Faucial and nasal	132	12	9·09
Faucial and laryngeal	31	1	3·22
Faucial, laryngeal and nasal	4	1	25·00
Laryngeal only	10	1	10·00
Nasal only	28	2	7·14
Nasal and ear	1	...	0·00
Totals	643	23	3·58

" The above table shows that there were 23 deaths during the year, representing a hospital mortality of 3·58 per cent., compared with 3·38 in 1928, 4·8 in 1927, 4·9 in 1926 and 5·3 in 1925.

" Forty-one patients suffered from laryngeal obstruction, and of these three died, representing a death-rate of 7·31 per cent. of laryngeal cases. Twenty-nine of the 41 patients were given steam inhalation only, and eight were subjected to intubation, of whom two died. Three children were subjected to tracheotomy before admission to hospital and all of them made a satisfactory recovery. One other child, who died and who had some laryngeal obstruction, really died of toxæmia associated with early heart failure.

" Types of post-diphtheretic paralysis :—

Type.	Number.
Palatal paralysis	39
Strabismus	7
Ciliary paralysis	1
Paralysis of the neck	24
Pharyngeal paralysis	8
Paralysis of legs	24
Facial paralysis	1
Paralysis of muscles of the back	3
Paralysis of muscles of the hand	1
Paralysis of arms	1
Paralysis of diaphragm	0
Ptosis	0
Total	109

" Sixty patients in all suffered from paralysis. The paralysis rate was therefore 9·3 per cent., as compared with 8·8 last year, 6·9 in 1927, 6·3 in 1926 and 8·3 in 1925.

" Circulatory failure occurred in 98 patients. Thirty-five of these showed only slight failure as evidenced by weak heart sounds and a very soft pulse. Twenty-five patients had, in addition, definite irregularity of the pulse and heart, while the remainder (38 in number) had quite serious circulatory failure accompanied by vomiting. Of these 38 patients, 21 died, and it is interesting to note that 15 of them died of early heart failure within the first two weeks or so, and only five died of late heart failure occurring in the sixth week. One other child died more from marasmus than from circulatory failure. Two other deaths occurred in the diphtheria wards—one (a man of 56) from influenzal-pneumonia, and another patient from tonsillitis and septicæmia with an accompanying broncho-pneumonia.

Table showing the Diphtheria Death-rate according to the Day of Disease on which Serum was given.

Day of Disease on which Serum given	Number of Patients	Number of Deaths	Number of Deaths per cent.
1st	13	...	0·00
2nd	144	2	1·39
3rd	161	6	3·72
4th	110	4	3·63
5th	81	6	7·41
Later than 5th	134	5	3·73
Totals	643	23	3·58

" Rashes occurred in 57 instances following the giving of antitoxin. The type of erythemas in five instances were scarlatiniform, in 19 morbilliform, in 29 urticarial in type, in 3 circinate, while in one instance the erythema was of the mixed variety. Apart from the rashes, no reactions of note occurred, even after intravenous inoculation with concentrated serum.

Table showing Age and Sex of Diphtheria Patients.

	0-5 years	5-10 years	10-15 years	15-25 years	25-45 years	Over 45 years	Totals
Recovered—							
Males	78	133	37	21	10	1	280
Females	61	144	56	44	31	4	340
Died—							
Males	4	7	1	...	...	...	12
Females	5	5	1	...	...	...	11
Totals ...	148	289	95	65	41	5	643

Hospital mortality—3·58 per cent.

" It is interesting to note that 68·0 per cent. of the total diphtheria patients and 91·3 per cent. of the deaths were of patients under 10 years of age.

" *Measles.*—Two hundred and five patients were admitted to the wards. Of these, 200 were true cases of measles, while one was really a case of scarlet fever, two were cases of rubella, one merely suffered from coryza, and one had an erythema due to some cause unknown. Fifteen of the true cases of measles were admitted to hospital as likely to be suffering from other infectious diseases, viz., five as cases of diphtheria, eight as cases of scarlet fever, and three as cases of rubella. Twenty-four deaths occurred among the measles patients, representing a hospital mortality of 12 per cent. Twenty of these patients died with broncho-pneumonia as a serious complication, although enteritis was also present in nine instances as a concurrent cause of death, and three others of the twenty were debilitated marasmic children. Of the remaining four, three died from enteritis and one child died from marasmus alone.

" The principal complications were as follows :—

Complication.	Number.	Percentage.
Laryngitis	7	3·5
Broncho-pneumonia	32	16·0
Otorrhœa	19	9·5
Previous chronic otorrhœa	10	5·0
Adenitis	7	3·5
Conjunctivitis	3	1·5
Enteritis	16	8·0
Diarrhœa (with green stools)	7	3·5
Tonsillitis	1	0·5
Diphtheria	1	0·5

Table showing Age and Sex of Measles Patients.

	0-1 year	1-2 years	2-3 years	3-4 years	4-5 years	5-10 years	10-15 years	Totals
Recovered—								
Males	9	18	17	13	17	21	5	100
Females	3	12	17	10	10	22	2	76
Died—								
Males	5	2	2	...	2	...	...	11
Females	2	4	1	3	2	1	...	13
Totals	19	36	37	26	31	44	7	200

Hospital mortality—12 per cent.

"*Enteric Fever.*—Twenty-two patients were admitted to the wards, of whom 16 were true cases of the disease. The other six patients were finally diagnosed as follows:—One diarrhœa and vomiting, one constipation, one influenza, one influenzal-pneumonia, one lobar pneumonia and one tuberculous glands in the abdomen. Of the true cases, 15 were patients suffering from *Bacillus Typhosus* infection and one from *Bacillus Paratyphosus B* infection. There were three deaths among the enteric fever patients, including a night nurse of the hospital. Hæmorrhage occurred as a complication in three patients, in two of them with fatal results. Four patients relapsed.

"*Erysipelas.*—Fourteen patients were admitted to the wards, of whom twelve were true cases of the disease. All the twelve patients suffered from facial erysipelas, but one of the twelve, who died, also had erysipelas of the leg. In only one instance was there a history of a previous attack of the disease. None of the cases relapsed. Two of the patients received fairly large doses of polyvalent anti-streptococcal serum, and the other ten were given injections of scarlet fever antitoxin. The other two patients, admitted as likely to be suffering from erysipelas, in reality had cellulitis of the right arm and an abscess of the right side of the face respectively.

"*Meningitis (Cerebro-Spinal Fever).*—Six patients were admitted as likely to be suffering from some form of meningitis. Of these, only one was a true case of cerebro-spinal meningitis. One other true case of cerebro-spinal meningitis was admitted to hospital as a possible case of encephalitis lethargica. The other five patients were finally diagnosed as follows:—One cerebral hæmorrhage, one, who died, tuberculous meningitis, one, who died, acute polioencephalitis, one, who also died, streptococcal meningitis with a history of chronic ear trouble, and one child merely suffered from meningism associated with whooping cough.

"*Whooping Cough.*—Nine patients were admitted to the wards, of whom two died, one with broncho-pneumonia as a complication and one from convulsions. Complications occurred in three others in the shape of broncho-pneumonia.

"*Chickenpox.*—Twenty-five patients were admitted as likely cases of chickenpox, of whom 23 were true cases. One patient was really suffering, not from chickenpox, but from a syphilitic rash, and one from an erythema of some kind, of which the cause was unknown. One patient suffering from chickenpox died, but the cause of death was a fatal form of purpura.

"*Puerperal Fever and Puerperal Pyrexia.*—Fourteen patients were admitted, and all but one were suffering from puerperal fever or pyrexia, while one merely suffered from an abscess of the breast. Three of the thirteen patients died, the other ten making a good recovery. One of the patients who died also suffered from concurrent erysipelas. Twelve of the puerperal cases were treated with fairly large doses either of polyvalent anti-streptococcal serum or of scarlet fever antitoxin, with, on the whole, favourable results.

"*Other Diseases.*—In addition to all the above-mentioned diseases, there were admitted to the wards thirty-six other patients who were finally diagnosed as follows :—

Disease.	Number.
Addiction to drugs	1
Pneumonia following removal of tonsils	1
Influenza	1
Anterior poliomyelitis	1*
Tuberculous meningitis (all died)	3
Influenzal-pneumonia (2 died)	3
Acute rheumatism	4
Broncho-pneumonia (died)	1
Lymphangitis	1
Parotitis (mumps)	1
Tonsillitis	8
Bacillary dysentery	4
Acne	1
Pyelitis	1
Gastritis	1
Tertiary syphilis	1
Septic throat following removal of tonsils with concurrent whooping cough and broncho-pneumonia	1
Septic throat following removal of tonsils	1
Smallpox	1
Total	36

"*Laboratory Work.*—The following table contains a summary of the bacteriological examinations conducted in the hospital laboratory during the year :—

Examinations	Positive	Negative	Totals
Specimens for Diphtheria	1,260	1,845	3,105
Blood for Widal reaction	5	6	11
Miscellaneous specimens, including examination of cerebro-spinal fluid	...	...	26
Total	...	...	3,142

"Many examinations of urine, etc., are not included in the above table."

Smallpox Hospital.

The Cardiff Smallpox Hospital, Caerau, near Cardiff, was occupied by cases of smallpox for 31 weeks during 1929. Altogether, 69 patients were admitted, six of whom were from Cardiff (City), one from Cardiff (Port), the remaining cases being admitted at the request and treated at the expense of other local authorities, as follows :—Monmouthshire County Council, 49 ; Caerphilly Urban District Council, 6 ; Pontypridd Urban District Council,7. All the cases made a good recovery.

The following statement shows the number admitted, the average daily number under treatment, the number of patient-days and the average duration of residence of the cases during the period which the hospital was occupied :—

Patients	69
Average daily number of patients	8
Patient-days	1,716
Average duration of residence in days	25

*This patient, a boy, who was diagnosed anterior poliomyelitis, was undoubtedly suffering from something which was clinically indistinguishable from this disease, but he made such a complete recovery that it is possible that he really suffered from some form of peripheral neuritis.

Section 5.

LORD PONTYPRIDD HOSPITAL, DULWICH HOUSE.

Report for 1929 *by Dr. Chris. J. McSweeney.*

This hospital became the property of the Cardiff City Council as the result of the bequest of the late Lord Pontypridd and the generosity of the trustees of the James Pyke Thompson bequest. It was taken over on 1st April, 1929, and was opened for the reception of patients on 8th April. The hospital is reserved for the treatment of early acute rheumatic conditions in children, more especially those in which early signs of heart involvement are present. It is administered through the Public Health Department and is financed out of funds derived from the legacy left to the Council in 1927 by the late Lord Pontypridd. The parents, wherever possible, pay contributions towards the cost of the maintenance of their children. The hospital is situated in the western part of the city, near Llandaff Fields, and possesses fairly extensive and very attractive grounds.

During the period 8th April—31st December, 1929, 72 cases were admitted and 54 were discharged, 18 children remaining in hospital on 31st December. Of the 54 children discharged, 52 returned to their own homes and two were transferred to the City Isolation Hospital, one of these having developed diphtheria and the other having been found to be a diphtheria carrier. Both these cases had recovered from active rheumatism at the time of discharge, and in this review are included with the cases treated to a conclusion—a group comprising 45 children. Nine children were withdrawn after short periods for various reasons by their parents. In most cases in this group the stay in hospital was less than a week, and no material improvement had been effected in the rheumatic condition at the time of discharge. The remaining 45 children had all reached a quiescent stage of the disease when discharged after an average stay in hospital of 84·4 days. The average gain in weight during this period was a little more than 5½ lb. per case. Only two children lost weight.

Cases are selected for admission at a special clinic to which rheumatic cases, more particularly those presenting early manifestations, are referred. During the year, 215 children were under observation at this special clinic. Sixty-six of the 72 admissions were first ascertained through the clinics. In addition, five cases were brought to the notice of the Department by private practitioners and one was sent from the Out-patient Department of the Cardiff Royal Infirmary.

The medical reasons for admission of the 72 cases recommended for hospital treatment were as follows :—

Chorea	16
Rheumatic pains...	14
Rheumatic fever	1
Early cardiac signs	9
Chorea with rheumatic pains	2
Chorea and early cardiac signs	7
Chorea and permanent heart disease	4
Rheumatic pains and early cardiac signs	14
Rheumatic pains and permanent heart disease ...	4
Chorea, rheumatic pains and early cardiac signs ...	1
Total	72

All children admitted were of school age.

As usual, chorea was found to be much more frequent in girls than boys—22 cases as against 8. Of all other rheumatic manifestations, 27 occurred in boys and 15 in girls.

Cardiac Involvement.—Of the total admissions, the heart was involved to a minor degree in 31, to a serious (permanent) degree in eight, and not definitely involved in 33.

Generally speaking, the lesser degrees of heart involvement tended to clear up with treatment in hospital, although in four cases, in spite of rest in bed, the heart condition steadily progressed and had become permanent before discharge. The following table shows the results of hospital treatment so far as the heart was concerned in the 45 cases treated to a conclusion :—

	On Admission	On Discharge
Minor cardiac manifestations	19	3
Permanent heart disease	7	11
Normal hearts	19	31

It is fair to assume that many of the children admitted and discharged with normal hearts were prevented by hospital treatment from developing cardiac complications as a sequel to the acute rheumatic manifestations which determined their admission to hospital.

The heart lesions encountered during the year in all cases involved the mitral valve. In one case mitral stenosis had developed prior to admission. As a general rule, cases with established heart lesions are not considered suitable cases for admission to hospital. In a few cases of this type, however, the occurrence of a fresh manifestation of the disease (*e.g.*, severe pains or a marked attack of chorea in a child where the home conditions did not allow of adequate rest) was the reason for the admission of children with hearts already irremediably damaged.

The study of the earlier phases of rheumatic carditis promises to be a very interesting one. Almost in all cases admitted to hospital (which, of course, are obviously a selected group) some abnormality could be detected in the cardio-vascular system. The physical sign most frequently met with was a want of clearness in the first mitral sound of the heart combined with a slight enlargement of the left ventricle, sometimes accompanied by a sharpening of the second sound. All grades of this condition were met with, the severer "blurrings" merging into the soft systolic murmurs, which in very early rheumatism seem to be localised in the apical region and expressive rather of dilatation and want of tone in the cardiac musculature rather than actual regurgitation. The most surprising of our early experiences in this work has been the observation that indefinite cardiac signs increase without obvious aggravation of the constitutional disturbance. In some cases it would seem that variability in the pulse rate (more especially a faster pulse rate during sleep) may be the only sign of increasing involvement of the heart in juvenile rheumatism. Observations on these earlier phases of the disease may throw some light on the sequence of events in those cases of acquired heart disease so frequently found at school inspections where there is no history of frank manifestations of rheumatism.

The heart lesions which seemed to benefit most from in-patient treatment were those indicative of early rheumatic involvement, exhibited by a softening or blurring of the first sound at the mitral area or a soft murmur localised at the apical region and accompanied by a slight degree of pyrexia, pallor, weakness, languor and sometimes shortness of breath on exertion. Frequently, rest in bed for a period of three or four weeks seemed to be sufficient to cause these signs to disappear. It was noticed that open-air treatment very often (sometimes in dramatic fashion) stabilised a swinging temperature due to active rheumatism. The construction of the hospital does not, however, lend itself to the application of open-air treatment on as wide a scale as one would desire. It is nevertheless possible to wheel the beds in the ground floor wards out on the lawn during fine weather. For the whole of the summer a shelter in the grounds—open completely on two sides—was utilised as an open-air ward and accommodated three children, as well as a nurse who slept there at night. The children in this ward very rapidly improved in general health, became deeply pigmented, and seemed to part with their rheumatic manifestations more quickly than those sleeping within doors.

Complications other than Cardiac.—These were remarkably few. Four children developed follicular tonsillitis, two developed periodontal abscess, one otorrhœa and one bronchitis. To minimise the risk of the introduction of diphtheria, the throats of all children were swabbed on admission, and if there was any abnormal local condition in the nose a nasal swab was also taken.

Management of the Cases.—The aim in treatment is to safeguard the heart during acute rheumatic manifestations and to prevent the development of permanent cardiac disease so far as is possible by the provision of rest and careful management. This object is attained by insisting on absolute rest in bed during the acuter stages, followed by a gradual return to normal activity when the disease has become quiescent. Drugs, other than iron tonics, are used very little. Salicylates are employed only for the relief of pain. All patients are kept lying flat for two or three weeks following admission and are not allowed to sit up or even feed themselves. When the acuter stages have passed off, the patient is permitted to feed himself, and about a week later, if no developments have occurred in the meantime, he is allowed to sit up for twenty minutes. The sitting-up period, in the convalescing cases, is then increased by increments of twenty minutes every two or three days, until the patient is sitting up in bed for three hours each day. A few days later he is allowed up in blankets, and later dresses and walks about. Return to normal activities is gradual, the patient at first walking about only on the level.

After-Care.—Cases discharged from hospital are not allowed to resume school until at least one month has elapsed. At the end of this time they are re-examined at the clinic for rheumatism and, if keeping well, are then re-admitted to school. Even then, all cases are kept under observation at the clinic and, if necessary, re-admitted to hospital in the event of a serious relapse. At the time of writing (April, 1930) there has been only one such re-admission, but it is, of course, far too early yet to assess the permanency of any results obtained from the treatment of this group of cases.

Heredity in Rheumatism.—One other feature noted in the first year of the hospital's working was so unexpected that it appears worthy of comment. Of the 72 cases admitted, it was possible to obtain reliable information concerning the family history in 66 for the purpose of case records. In 32 of these (roughly 44 per cent.) one or other parent gave a history of rheumatic fever, chorea or rheumatic pains during childhood, the manifestation in each case being sufficiently severe to cause them to lie up for a long period. Further, eleven of the 72 children admitted to hospital had one or more brothers and/or sisters affected with definite juvenile rheumatism. After allowing for the fact that the children admitted to hospital were a selected class rather than a random sample of rheumatic children, in that they mostly suffered from early cardiac manifestations, it would appear that hereditary influences may play a bigger part in the causation of this disease than has been hitherto believed.

Section 6.

CARDIFF HOSPITALS.

In the Report for 1928 information was given about the hospitals then under the management of the Health Committee. On 1st April, 1930, a large institutional organisation was transferred to the Council under the Local Government Act. Difficult questions have to be faced as to the use of these institutions and the future relationship between the Council and the managers of voluntary hospitals, some of which are already the subject of joint conference. It may therefore be useful to show here the amount of accommodation for the sick and others in need of special care, provided by the Council and other bodies, classified according to the type of function it subserves.

Institutional accommodation on 31st March, 1930, for sick, infirm, aged and mentally abnormal persons and for maternity :—

Institution	Total available Beds		Approximate Number available for Cardiff.
Isolation Hospital (including old Smallpox Hospital)		151*	151*
Caerau Smallpox Hospital		31†	31†
Flatholm Hospital (for Cholera, Yellow Fever and Plague) ...		16	16
Lord Pontypridd Hospital (Dulwich House)		20	20
City Lodge Hospital‡ :—			
Acute Diseases	187		
Maternity :—			
Mothers	23		
Infants	14		
Tuberculosis	53		
Mental Cases	12		
Chronic, Aged and Infirm	375		
	—	664	564
Ely Institution‡ :—			
Mental Cases (including Mental Defectives)	380		
Chronic, Aged and Infirm	60		
	—	440	350
Mental Hospital		789	789
Total Rate-provided		2,111	1,921
Cardiff Royal Infirmary :—			
General	380		
Maternity :—			
Mothers	31		
Infants	25		
Convalescent Home	54		
	—	490	260
Prince of Wales' Hospital :—			
General	63		
Country Branch	50		
	—	113	11
Royal Hamadryad Seamen's Hospital		74	...
Total Voluntary		677	271
Grand Total		2,788	2,192
Sanatoria and Hospitals of the Welsh National Memorial Association		...	109

* Total adult accommodation on the basis of 144 sq. ft. per adult bed. This represents about 230 available beds and cots when allowance is made for children under 10 years.

† On the basis of 154 sq. ft. per bed, representing about 48 beds actual accommodation when allowance is made for children under 10 years.

‡ The accommodation for chronic, aged and infirm in the City Lodge and Ely Institution and for patients suffering from mental diseases, disorders or defects at Ely Institution fluctuate slightly with requirements. Many of the beds set apart for chronic cases at the City Lodge are really occupied by patients requiring continuous medical or surgical and nursing care. The figures for Ely Institution also include accommodation approved by the Board of Control for mental defectives (about 70) who are chargeable to the Mental Deficiency Committees of the Authorities responsible for their maintenance.

Section 7.

TUBERCULOSIS.

New Cases.—The following tables show the age distribution and localisation of the disease among new cases of tuberculosis coming to the knowledge of the Department during the year :—

Cases of Tuberculosis by Age and Sex.

Age Periods—Years	New Cases*					
	Pulmonary			Non-Pulmonary		
	Males	Females	Totals	Males	Females	Totals
0— 1	...	1	1	2	3	5
1— 5	...	1	1	10	15	25
5—10	6	1	7	11	10	21
10—15	2	8	10	8	9	17
15—20	21	18	39	3	4	7
20—25	36	27	63	8	6	14
25—35	49	52	101	6	6	12
35—45	49	22	71	5	...	5
45—55	24	16	40	2	1	3
55—65	14	11	25	...	1	1
65 and upwards	2	2	4	1	...	1
Totals	203	159	362	56	55	111

Cases of Tuberculosis by Localisation of Disease and Sex.

Form of Tuberculosis	New Cases*		
	Males	Females	Totals
Respiratory System	203	159	362
Nervous System	6	10	16
Intestines and Peritoneum	9	7	16
Vertebral Column	9	3	12
Joints	8	12	20
Other Organs	20	21	41
Disseminated Tuberculosis	4	2	6
Totals	259	214	473

Sources of Ascertainment.—The new cases of tuberculosis* were ascertained as follows :—

Source	Pulmonary	Non-Pulmonary	Totals
General Medical Practitioners	142	20	162
Welsh National Memorial Association	116	42	158
Medical Officers of Institutions	64	24	88
Other Medical Officers	7	5	12
Otherwise ascertained	33	20	53
Totals	362	111	473

* Including cases notified after death, deaths of cases not notified and cases ascertained otherwise than by formal notification.

Home Conditions.—A detailed analysis is given below, showing the actual living and sleeping conditions within their own tenements of 288 new cases of pulmonary tuberculosis coming to the knowledge of the Department during 1929.

Living accommodation of 288 Patients in Private Houses.

Rooms in Tenement (*i.e.*, house or part of house occupied by one family)	Patients			Total Number of Persons in Household			
	Males	Females	Totals	Over 10 years	Under 10 years	Lodgers	Totals
1 room	5	3	8	12	2	...	14
2 rooms	18	20	38	99	38	...	137
3 rooms	13	13	26	84	37	...	121
4 rooms and over ...	116	100	216	996	191	3	1,190
Totals ...	152	136	288	1,191	268	3	1,462

In addition to the foregoing 288 cases, there were 22 cases (14 males and 8 females) in institutions and 19 males in lodging houses. Information as to the living accommodation of the remaining 33 cases (18 males and 15 females) could not be ascertained for various reasons.

Sleeping Accommodation of 288 Patients suffering from Pulmonary Tuberculosis and living in Private Houses.

Rooms in Tenement (*i.e.*, house or part of house occupied by one family)	Patients				Contacts		
	With Room to Self	With Bed but not Room to Self	With neither Bed nor Room to Self	Totals	Sleeping in same Bed as Patient	Sleeping in separate Bed but in same Room as Patient	Totals
1 room	4	...	4	8	5	1	6
2 rooms	6	2	30	38	44	22	66
3 rooms	8	3	15	26	16	13	29
4 rooms and over ...	116	18	82	216	92	55	147
Totals ...	134	23	131	288	157	91	248

As in previous years, this table reveals a very serious state of affairs. Only 46·5 per cent. of the new cases had sleeping rooms to themselves, and the number of contacts exposed to infection in the same bedrooms was 248.

Occupational Incidence.—During 1924 a beginning was made to collate this information in such a way that use might be made of it when it covered a sufficiently long period. The classification is obviously important in relation to our high incidence of tuberculosis. The following tables show the occupational incidence among 259 males and 214 females notified or otherwise ascertained during 1929 to be suffering from tuberculosis.

MALES.

	Pulmonary	Non-Pulmonary	Totals
Accountants	1	...	1
Insurance, Commission, etc., Agents	3	1	4
Commercial Travellers	1	...	1
Clerks	15	2	17
School Teachers and Students	1	1	2
Shopkeepers and Shop Assistants	11	1	12
Butchers	4	...	4
Publicans and Boarding-House Keepers	4	...	4
Tailors	3	...	3
Printers	2	...	2
Factory Workers	4	...	4
Laundry Workers	1	...	1
Warehousemen, etc.	3	...	3
Postmen	2	...	2
Messengers and Porters	4	...	4
Railway Workers	3	...	3
Engineers and Fitters	2	...	2
Electricians	6	...	6
Seamen	41*	9†	50
Masons	3	...	3
Plasterers	1	...	1
Painters	4	...	4
Plumbers and Gas Fitters	1	...	1
Carpenters and Joiners	5	...	5
Boilermakers and Riveters	3	...	3
Tinsmiths	2	...	2
Colliers	3	...	3
Coal Trimmers	2	...	2
Steel Workers	2	...	2
Chauffeurs and Motor Drivers	2	...	2
Tram and Bus Conductors	3	...	3
Hauliers and Van Men	3	...	3
Hawkers	2	...	2
Gardeners	1	...	1
Labourers (various)	25	5	30
Ex-Soldiers and Sailors	3	...	3
Miscellaneous	14	4	18
No occupation or unknown	5	3	8
Children of School Age	8	18	26
Children under School Age	...	12	12
Totals	203	56	259

* British, 12; coloured, 21; other foreign seamen, 8.

† British, 1; coloured, 7; other foreign seamen, 1.

FEMALES.

	Pulmonary	Non-Pulmonary	Totals
Nurses	1	...	1
School Teachers and Students	3	1	4
Clerks, Typists, etc.	6	...	6
Shopkeepers and Shop Assistants	6	...	6
Waitresses	2	...	2
Laundry Workers	1	...	1
Tailoresses	5	...	5
Factory Workers	7	1	8
Packers	2	...	2
Domestic Servants	18	7	25
Charwomen	2	...	2
Housewives	75	7	82
Miscellaneous	4	...	4
No occupation or unknown	18	6	24
Children of School Age	9	15	24
Children under School Age	...	18	18
Totals	159	55	214

The most notable feature, as usual, is the large number of cases among seamen, which is out of all proportion to the total seafaring population.

Place of Birth of Patients and their Parents.—The inquiry into the place of birth of patients and their parents, the purpose of which was explained in the Report for 1926, was continued during 1929, but the tabular information is not included in this Report. The statistics for a number of years will, however, be given in a later Report, when the number of cases recorded is sufficiently large to make them of greater value and significance.

Known Cases of Tuberculosis.—In the following tables the number of cases of tuberculosis on the register at 31st December, 1929, is shown, and also the number of these who were under regular observation by the tuberculosis nurses :—

Pulmonary Tuberculosis : Cases on the Register at 31st December, 1929.

Municipal Wards, etc.	Males				Females				Grand Totals
	Under 5 years	5–15 years	Over 15 years	Totals	Under 5 years	5–15 years	Over 15 years	Totals	
Central	...	...	32	32	...	1	21	22	54
Lodging Houses, etc.	...	...	2	2	...	...	...	...	2
South	...	2	24	26	...	...	24	24	50
Lodging Houses, etc.	...	...	1	1	...	...	...	...	1
Cathays	...	1	39	40	...	...	20	20	60
Adamsdown	...	1	32	33	...	1	33	34	67
Lodging Houses, etc.	...	...	4	4	...	...	...	...	4
Riverside	...	1	40	41	...	1	34	35	76
Canton	...	2	31	33	...	...	24	24	57
Grangetown	...	1	36	37	...	2	18	20.	57
Roath	...	1	30	31	...	1	20	21	52
Plasnewydd	...	...	26	26	...	...	32	32	58
Splott	...	2	37	39	1	1	46	48	87
Penylan	...	...	28	28	...	...	17	17	45
Llandaff	...	1	38	39	1	1	46	48	87
Gabalfa	...	2	39	41	...	...	24	24	65
Institutions*	...	2	25	27	...	1	15	16	43
Removed and not traced	...	3	31	34	...	...	22	22	56
Totals ...	...	19	495	514	2	9	396	407	921

Non-Pulmonary Tuberculosis : Cases on the Register at 31st December, 1929.

Municipal Wards, etc.	Males				Females				Grand Totals
	Under 5 years	5–15 years	Over 15 years	Totals	Under 5 years	5–15 years	Over 15 years	Totals	
Central	...	2	7	9	1	4	3	8	17
Lodging Houses, etc.	...	...	...	...	...	...	...	...	...
South	2	6	5	13	1	5	6	12	25
Lodging Houses, etc.	...	...	...	...	...	...	...	...	...
Cathays	2	4	12	18	...	2	5	7	25
Adamsdown	1	10	13	24	...	5	5	10	34
Lodging Houses, etc.	...	...	4	4	...	...	...	...	4
Riverside	...	2	6	8	...	...	8	8	16
Canton	...	8	5	13	1	1	5	7	20
Grangetown	...	3	10	13	...	7	5	12	25
Roath	...	6	9	15	...	3	8	11	26
Plasnewydd	...	3	9	12	1	1	6	8	20
Splott	...	4	12	16	...	1	17	18	34
Penylan	...	...	5	5	...	...	9	9	14
Llandaff	4	6	14	24	2	8	17	27	51
Gabalfa	...	2	5	7	...	1	8	9	16
Institutions*	...	...	4	4	1	...	2	3	7
Removed and not traced	...	2	6	8	...	4	9	13	21
Totals ...	9	58	126	193	7	42	113	162	355

* The cases shown as being in institutions are those who permanently reside in institutions and those temporarily residing in institutions whose home addresses are unknown.

Cases of Tuberculosis under Observation by Tuberculosis Nurses at 31st December, 1929.

Municipal Wards, etc.	Pulmonary			Non-Pulmonary			Grand Totals
	Males	Females	Totals	Males	Females	Totals	
Central	31	22	53	9	8	17	70
Lodging Houses, etc.	2	...	2	...	...	...	2
South	26	24	50	13	12	25	75
Lodging Houses, etc.	1	...	1	...	...	...	1
Cathays	39	20	59	18	7	25	84
Adamsdown	33	34	67	24	10	34	101
Lodging Houses, etc.	4	...	4	4	...	4	8
Riverside	38	33	71	8	8	16	87
Canton	32	24	56	13	7	20	76
Grangetown	37	20	57	13	12	25	82
Roath	30	19	49	15	11	26	75
Plasnewydd	25	30	55	12	8	20	75
Splott	39	48	87	16	18	34	121
Penylan	28	17	45	5	8	13	58
Llandaff	38	47	85	23	27	50	135
Gabalfa	40	24	64	7	9	16	80
Totals ...	443	362	805	180	145	325	1,130

Cases of suspected Tuberculosis (unnotified) under Observation by Tuberculosis Nurses at 31st December, 1929.

Municipal Wards	Males	Females	Totals
Central	2	4	6
South	6	7	13
Cathays	1	...	1
Adamsdown	10	4	14
Riverside	4	10	14
Canton	9	10	19
Grangetown	6	8	14
Roath	3	11	14
Plasnewydd	3	4	7
Splott	8	9	17
Penylan	2	2	4
Llandaff	19	12	31
Gabalfa	3	6	9
Totals	76	87	163

The actual number of known cases of tuberculosis at the end of 1929 was 1,276 as compared with 1,367 the previous year. The last two tables reveal the very satisfactory extent to which cases and suspected cases are under the supervision of the Department. The tuberculosis nurses made 432 first visits and 2,779 revisits during the year.

Deaths.—According to local records, 256 deaths from pulmonary tuberculosis and 41 from other forms of tuberculosis occurred during 1929. The death-rate per 1,000 from pulmonary tuberculosis was 1·14, compared with 1·01 in 1928 and with 1·25 during the ten years 1919-28; the death-rate from other forms of the disease was 0·18 per 1,000, as against 0·20 in 1928 and 0·26 during the ten years 1919-28.

The deaths were distributed as to place of death as follows :—

Place of Death	Pulmonary	Non-Pulmonary	Totals
Tuberculosis Hospitals :—			
Glan Ely	24	3	27
Cefn Mably	...	...	...
Sanatoria	3	...	3
City Lodge (Union Hospital)	44	15	59
Cardiff Royal Infirmary	3	3	6
Royal Hamadryad Seamen's Hospital	2	1	3
Other Institutions	7	3	10
Lodging Houses...	5	...	5
Private Dwelling-houses	168	16	184
Totals	256	41	297

The two following tables show the age distribution and localisation of the disease among the deaths from tuberculosis during the year.

Deaths from Tuberculosis by Age and Sex.

Age Periods—Years	Deaths					
	Pulmonary			Non-Pulmonary		
	Males	Females	Totals	Males	Females	Totals
0— 1	...	...	...	2	2	4
1— 5	...	...	...	1	8	9
5—10	1	2	3	3	3	6
10—15	...	5	5	1	1	2
15—20	15	11	26	2	1	3
20—25	18	24	42	4	4	8
25—35	31	48	79	3	...	3
35—45	27	18	45	1	1	2
45—55	25	8	33	3	...	3
55—65	12	6	18	...	...	...
65 and upwards	4	1	5	...	1	1
Totals ...	133	123	256	20	21	41

Deaths from Tuberculosis by Localisation of Disease and Sex.

Form of Tuberculosis	Deaths		
	Males	Females	Totals
Respiratory System	133	123	256
Nervous System	5	10	15
Intestines and Peritoneum	3	3	6
Vertebral Column	3	...	3
Joints	...	2	2
Other Organs	2	1	3
Disseminated Tuberculosis	7	5	12
Totals	153	144	297

Fifty-three of the 297 deaths (17·8 per cent.) were of cases previously unknown to the Department, 33 of these being pulmonary cases (12·9 per cent.) and 20 non-pulmonary (48·8 per cent.).

From time to time special reference has been made in these Annual Reports to the lateness of notification of cases of tuberculosis and to the numbers not notified at all. The percentage of cases of pulmonary tuberculosis dying without being notified is usually about 12. In this connection a report by the Principal Medical Officer of the Welsh National Memorial Association, submitted to the Medical Committee of the Association in December, 1929, is of interest. It deals with cases of tuberculosis (all forms) who died during the year ended 31st March, 1929, (*a*) within six months and (*b*) within 6 to 12 months of being seen by the Association's Tuberculosis Officers. The following is a summary of the detailed information given in the report :—

Reason	Cases dying within 6 months				Cases dying within 6-12 months			
	Whole of Wales & Mon.		Cardiff		Whole of Wales & Mon.		Cardiff	
	Number	Percentage	Number	Percentage	Number	Percentage	Number	Percentage
(*a*) Patients' failure to consult their own Doctor until the last stage of the disease ; *or*	242	38·2	16	30·8	102	37·9	3	9·1
(*b*) Their own reluctance (expressed to their Doctors) to be submitted to any official interference ; *or* ...	82	12·9	6	11·5	40	14·8	13	39·4
(*c*) Possibly in some cases delay on the part of the Doctor in notifying the case after it had been diagnosed ...	88	13·9	14	26·9	43	16·0	9	27·3
(*d*) Short acute illnesses or tuberculosis a terminal condition	123	19·4	13	25·0	55	20·4	8	24·2
(*e*) Errors or delay in diagnosis ...	63	9·9	...	...	16	5·9	...	...
(*f*) Transfers from outside areas ...	31	4·9	3	5·8	13	4·8	...	...
(*g*) Other reasons...	4	0·6	...	...	...	...	...	...
Totals	633	100	52	100	269	100	33	100

Although the numbers for Cardiff in the above table are relatively small, those under (*b*) and (*c*) compare unfavourably with the figures for the whole of Wales and Monmouthshire, and confirm the statements made in previous Reports to the effect that the services provided for the treatment of tuberculosis are not always used by the public to the best advantage.

Treatment.—The following tables give particulars of Cardiff cases examined and of cases treated under the scheme of the Welsh National Memorial Association during 1929.

1.—Work of the Dispensary.

Diagnosis	Pulmonary				Non-Pulmonary				Totals			
	Adults		Children		Adults		Children		Adults		Children	
	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.
A.—New cases examined during the year (excluding contacts):—												
(*a*) Definitely tuberculous	112	92	1	3	10	6	20	15	122	98	21	18
(*b*) Doubtfully tuberculous	...	...	...	...	...	...	...	...	46	29	16	17
(*c*) Non-tuberculous	...	...	...	...	...	...	...	...	82	80	40	41
B.—Contacts examined during the year:—												
(*a*) Definitely tuberculous	...	...	2	1	...	...	...	...	...	...	2	1
(*b*) Doubtfully tuberculous	...	...	...	...	...	...	...	...	1	3	5	3
(*c*) Non-tuberculous	...	...	...	...	...	...	...	...	16	12	34	33
C.—Cases written off the Dispensary Register as:—												
(*a*) Cured	13	3	1	...	2	5	9	2	15	8	10	2
(*b*) Diagnosis not confirmed or non-tuberculous (including cancellation of cases notified in error) ...	...	...	...	...	...	...	...	...	104	105	85	83
D.—Number of persons on Dispensary Register on 31st Dec., 1929:—												
(*a*) Diagnosis completed	376	225	18	13	65	64	64	55	441	289	82	68
(*b*) Diagnosis not completed	...	...	...	...	...	...	...	...	42	28	22	22

1.	Number of persons on Dispensary Register on 1st January, 1929 ...	961
2.	Number of patients transferred from other areas and of "lost sight of" cases returned	17
3.	Number of patients transferred to other areas and cases "lost sight of"	126
4.	Died during the year	166
5.	Number of observation cases under A (*b*) and B (*b*) above in which period of observation exceeded 2 months	117
6.	Number of attendances at the Dispensary (including contacts) ...	5,247
7.	Number of attendances of non-pulmonary cases at orthopædic out-stations for treatment or supervision	219
8.	Number of attendances at General Hospitals or other institutions approved for the purpose of patients for:—	
	(*a*) "Light" treatment	371
	(*b*) Other special forms of treatment	36
9.	Number of persons to whom dental treatment was given at or in connection with the Dispensary	—
10.	Number of consultations with medical practitioners:—	
	(*a*) At homes of applicants	141
	(*b*) Otherwise	13
11.	Number of other visits by Tuberculosis Officers to homes	89
12.	Number of visits by Nurses or Health Visitors to homes for Dispensary purposes	3,211
13.	Number of:—	
	(*a*) Specimens of sputum, etc., examined	632
	(*b*) X-ray examinations made in connection with Dispensary work	268

14. Number of Insured Persons on Dispensary Register on 31st December 1929 522
15. Number of Insured Persons under domiciliary treatment on 31st December, 1929 35
16. Number of reports received during the year in respect of Insured Persons
    (*a*) Form G.P. 17 45
    (*b*) Form G.P. 36 63

2.—Residential Treatment.

			In Institutions on 1st Jan., 1929	Admitted during year	Discharged during year	Died in Institutions	In Institutions on 31st Dec., 1929
Number of Patients	Adults	M.	32	110	83	11	48
		F.	42	83	77	16	32
	Children	M.	11	17	9	2	17
		F.	5	10	4	2	9
Number of Observations	Adults	M.	...	8	6	...	2
		F.	...	9	9	...	...
	Children	M.	1	7	7	...	1
		F.	...	3	3	...	...
Totals			91	247	198	31	109

3.—Immediate Results of Treatment of Patients and of Observation of Doubtful Cases discharged from Residential Institutions during 1929.

(*a*) Sanatorium (Pulmonary Cases).

(i) Tuberculous Cases :—

Condition at time of Discharge	Duration of Residential Treatment												Totals
	Under 3 Months			3–6 Months			6–12 Months			More than 12 Months			
	M.	F.	Ch.	M.	F.	Ch.	M.	F.	Ch.	M.	F.	Ch.	
Quiescent	...	...	...	8	4	1	...	5	1	1	...	...	20
Improved	4	1	...	17	11	...	2	7	1	1	...	...	44
No material improvement ...	4	1	...	5	5	...	1	3	...	...	...	...	19
Died in Institution	...	...	...	...	...	...	...	...	...	...	...	...	...

(ii) Observation Cases :—

Condition at time of Discharge from Observation	Duration of Residential Treatment.												Totals
	Under 1 week			1–2 weeks			2–4 weeks			More than 4 weeks			
	M.	F.	Ch.	M.	F.	Ch.	M.	F.	Ch.	M.	F.	Ch.	
Tuberculous	...	...	...	1	...	...	3	1	...	...	2	4	11
Non-tuberculous	...	...	...	...	...	...	...	...	...	...	1	1	2
Doubtful	...	...	1	...	...	...	...	...	...	...	1	...	2

(*b*) Hospital (Pulmonary Cases).

(i) Tuberculous Cases :—

Condition at time of Discharge	Duration of Residential Treatment												Totals
	Under 3 Months			3–6 Months			6–12 Months			More than 12 Months			
	M.	F.	Ch.	M.	F.	Ch.	M.	F.	Ch.	M.	F.	Ch.	
Quiescent	...	...	...	...	...	...	...	1	...	...	...	...	1
Improved	11	4	...	9	11	1	1	3	...	1	...	...	41
No material improvement ...	6	10	...	4	6	...	2	...	...	...	1	...	29
Died in Institution	6	6	...	4	3	1	1	3	1	...	3	...	28

(ii) Observation Cases :—

Condition at time of Discharge from Observation	Duration of Residential Treatment												Totals
	Under 1 week			1–2 weeks			2–4 weeks			More than 4 weeks			
	M.	F.	Ch.	M.	F.	Ch.	M.	F.	Ch.	M.	F.	Ch.	
Tuberculous	...	...	1	...	1	...	...	1	...	...	...	...	3
Non-tuberculous	...	...	...	...	...	...	...	...	...	...	2	...	2
Doubtful	...	...	1	...	...	...	...	...	...	1	...	...	2

(*c*) Hospital (Non-Pulmonary Cases).

(i) Tuberculous Cases :—

Condition at time of Discharge	Duration of Residential Treatment												Totals
	Under 3 months			3–6 months			6–12 months			More than 12 months			
	M.	F.	Ch.	M.	F.	Ch.	M.	F.	Ch.	M.	F.	Ch.	
Quiescent	1	...	1	...	1	...	1	...	...	...	...	1	5
Improved	1	...	...	...	...	...	3	1	...	...	1	2	8
No material improvement ...	1	...	3	...	...	1	...	...	1	...	...	...	6
Died in Institution	...	...	1	...	...	...	...	1	1	...	...	...	3

(ii) Observation Cases :—

Condition at time of Discharge from Observation	Duration of Residential Treatment												Totals
	Under 1 week			1–2 weeks			2–4 weeks			More than 4 weeks			
	M.	F.	Ch.	M.	F.	Ch.	M.	F.	Ch.	M.	F.	Ch.	
Tuberculous	...	...	...	...	...	...	...	...	...	...	...	...	...
Non-Tuberculous	...	...	...	...	...	...	...	...	...	...	...	...	...
Doubtful	...	...	...	...	...	...	1	...	...	...	...	2	3

Section 8.

VENEREAL DISEASES.

The following is a summary of the returns from treatment centres established under the Public Health (Venereal Diseases) Regulations, 1916 :—

	Cardiff Royal Infirmary	Royal Hamadryad Seamen's Hospital*	Auxiliary Centre for Mothers and Children	Institutions outside Cardiff	Totals
A. Number of persons residing in Cardiff dealt with during the year for the first time and found to be suffering from :—					
Syphilis	226	239	46	5	516
Soft Chancre	7	96	...	1	104
Gonorrhœa	349	348	111	10	818
Conditions other than Venereal ...	192	21	117	3	333
Totals	774	704	274	19	1,771
B. Number of attendances of all patients residing in Cardiff	9,914	15,027	3,757	95	28,793
C. Aggregate number of "in-patient days" of all patients residing in Cardiff ...	7	2,093	...	46	2,146
D. Number of doses of arsenobenzene compounds given to patients residing in Cardiff	1,335	1,008	423	6	2,772

Examination of pathological material from patients residing in Cardiff :—

	For detection of			For Wassermann Reaction
	Spirochætes	Gonococci	Other Organisms	
Specimens examined at Treatment Centres :—				
Cardiff Royal Infirmary	...	426	...	748
Royal Hamadryad Seamen's Hospital* ...	86	161	...	...
Specimens examined at the Cardiff and County Public Health Laboratory from :—				
Treatment Centres—				
Royal Hamadryad Seamen's Hospital* ...	...	4	...	317
Auxiliary Centre for Mothers and Children ...	1	550	...	187
Public Health Department	...	81	...	987
Other sources	5	173	...	441
	— 6	— 808	— ...	— 1,932
Totals	92	1,395	...	2,680

* The figures relate to seamen only, whether residents of Cardiff or not.

Results of Treatment.—The following summaries relating to *all persons* treated during 1929 have been prepared from the annual returns of the clinical officers, and show the conditions under which patients ceased treatment at the treatment centres during the year :—

Cardiff Royal Infirmary.

	Syphilis		Soft Chancre		Gonorrhœa		Conditions other than Venereal		Totals			Percentage
	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	Both Sexes	
(1) Number of cases under treatment or observation at the beginning of the year (including cases marked off in a previous year and which returned during the year suffering from the same infection)	186	158	4	3	234	58	2	1	426	220	646	41·4
(2) Number of cases dealt with for the first time (*a*) Of less than one year's standing ...	133	63	6	4	338	62	184	53	700	215	915	58·6
(*b*) Of more than one year's standing ...	28	28	...	...	11	5						
Totals	347	249	10	7	583	125	186	54	1,126	435	1,561	100
(3) Number of cases that ceased to attend—												
(*a*) Before completing the first course of treatment ...	54	14	...	...	140	13	...	...	194	27	221	16·5
(*b*) After one or more courses but before completion of treatment	65	45	...	...	...	...	...	...	65	45	110	8·2
(*c*) After completion of treatment but before final tests as to cure	...	...	6	2	89	10	...	...	95	12	107	7·9
(4) Number of cases transferred to other treatment centres after treatment...	...	...	...	...	...	...	...	...	...	...	...	...
(5) Number of cases discharged after completion of treatment and observation	47	7	2	2	130	17	...	...	179	26	205	15·3
(6) Number of cases remaining under treatment or observation at the end of the year	181	183	2	3	224	85	15	6	422	277	699	52·1
Totals	347	249	10	7	583	125	15	6	955	387	1,342	100

Royal Hamadryad Seamen's Hospital (Seamen only).

	Syphilis	Soft Chancre	Gonorrhœa	Conditions other than Venereal	Totals	Per-centage
(1) Number of cases under treatment or observation at the beginning of the year (including cases marked off in a previous year and which returned during the year suffering from the same infection) ...	63	12	63	...	138	16·4
(2) Number of cases dealt with for the first time... (*a*) Of less than one year's year's standing ...	169	96	313	21	704	83·6
(*b*) Of more than one year's standing	70	...	35			
Totals	302	108	411	21	842	100
(3) Number of cases that ceased to attend :—						
(*a*) Before completing the first course of treatment	98	12	111	...	221	27·3
(*b*) After one or more courses but before completion of treatment	33	...	...	...	33	4·0
(*c*) After completion of treatment but before final tests as to cure	30	...	66	...	96	11·7
(4) Number of cases transferred to other treatment centres after treatment	34	6	96	...	136	16·5
(5) Number of cases discharged after completion of treatment and observation	51	78	75	...	204	24·6
(6) Number of cases remaining under treatment or observation at the end of the year ...	56	12	63	...	131	15·9
Totals	302	108	411	...	821	100

Auxiliary Centre for Mothers and Children.

	Syphilis		Soft Chancre		Gonorrhœa		Conditions other than Venereal		Totals			Percentage
	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	Both Sexes	
(1) Number of cases under treatment or observation at the beginning of the year (including cases marked off in a previous year and which returned during the year suffering from the same infection)	42	130	...	1	...	203	18	106	60	440	500	64·8
(2) Number of cases dealt with for the first time (*a*) Of less than one year's standing...	5	10	...	...	...	80	7	110	14	260	274	35·2
(*b*) Of more than one year's standing...	2	29	...	...	...	31						
Totals	49	169	...	1	...	314	25	216	74	700	774	100
(3) Number of cases that ceased to attend— (*a*) Before completing the first course of treatment	15	31	...	...	...	44	...	...	15	75	90	16·8
(*b*) After one or more courses but before completion of treatment	...	5	...	...	...	...	...	...	...	5	5	0·9
(*c*) After completion of treatment but before final tests as to cure	...	6	...	...	...	20	...	...	...	26	26	4·8
(4) Number of cases transferred to other treatment centres after treatment ...	...	2	...	...	...	1	...	...	...	3	3	0·5
(5) Number of cases discharged after completion of treatment and observation	6	22	...	1	...	110	...	...	6	133	139	25·8
(6) Number of cases remaining under treatment or observation at the end of the year	28	103	...	...	...	139	...	5	28	247	275	51·2
Totals	49	169	...	1	...	314	...	5	49	489	538	100

The number of doses of arsenobenzene compounds supplied to medical practitioners (other than at treatment centres) during the year was 819.

Section 9.

MATERNITY AND CHILD WELFARE.

Notification of Births and Still-births.—The following statement shows the numbers of births and still-births notified during the year :—

	Births.	Still-births.
By Medical Practitioners	41 ...	3
By Midwives	2,876 ...	124
By Queen's Nurses	582 ...	20
By Parents	28 ...	—
From Cardiff Royal Infirmary ...	486 ...	91
From City Lodge	89 ...	10
Totals	4,102 ...	248

Child Welfare Consultations.—The following is a record of the attendances at the several centres.:—

Centre	Consultations	First Attendances	Total Attendances
Central	45	215	2,146
South	47	131	1,124
Glossop Terrace	93	454	4,513
Canton	91	387	3,713
Grangetown	93	322	3,329
Splott	91	347	3,646
Gabalfa	93	299	3,300
Llandaff North	45	43	904
Ely	93	327	3,363
Totals	691	2,525	26,038

The following tabular statement shows the conditions found by medical officers in 2,035 infants under one year and 329 children between one and five years who were examined for the first time during 1929, and also the diseases or defects discovered subsequent to the first examination of children attending the consultations for the first time during 1929 or previously :—

	Examined for first time		Diseases or Defects found in Children not attending for the first time	
	Under 1 year	1 year and over	Under 1 year	1 year and over
Number examined :—				
Normal	1,406	85	...	...
Individual cases found with Diseases or Defects	629	244	...	...
Diseases or Defects found :—				
Injury at Birth	6	1	...	...
Congenital Malformation or Defect	61	1	17	2
Prematurity	28	1	...	...
Congenital Debility	36	1	...	2
Malnutrition (cause not specified) or Debility (not congenital)	76	30	29	47
Anæmia (cause not specified)	4	9	4	20
Diseases or defects of :—				
Skin (Non-syphilitic) :				
Systemic	28	7	121	49
Contagious	21	29	69	86
Irritative	40	11	157	69
Eye : Ophthalmia Neonatorum	15	...	2	3
Squint	5	7	6	20
Other	17	9	52	34
Ear : Otorrhœa	12	11	59	63
Other	1	3	14	11
Nose and Throat :				
Enlarged Tonsils and/or Adenoids	4	21	19	97
Other	7	9	33	34
Heart and Circulation : Congenital	10	2	3	2
Rheumatic	...	2	...	2
Other	...	...	1	2
Respiratory System (non-tuberculous)	45	17	298	104
Digestive System : Hernia—Umbilical	83	1	27	3
Other	20	2	31	7
Other Diseases	89	23	355	136
Nervous System : Chorea	...	1	2	2
Other	...	3	3	10
Genito-Urinary System : Phimosis	60	5	28	8
Other	7	5	11	20
Tuberculosis : Pulmonary—				
Definite	...	...	...	...
Suspected	...	...	1	1
Non-Pulmonary	...	5	...	8
Defective Teeth	1	77	7	135
Rickets	10	19	19	47
Other Deformities	12	5	9	12
Rheumatism (not Cardiac or Nervous)	...	1	...	...
Syphilis	3	...	1	1
Other Diseases or Defects	40	23	65	77

Sixty-three infants under one year who had attended the consultations died during 1929. The following table shows the causes of and ages at death in these cases :—

	4 weeks—3 months	3–6 months	6–9 months	9–12 months	Totals
Measles	...	3	4	5	12
Whooping Cough	...	1	1	1	3
Influenza	...	1	...	...	1
Tuberculosis of Nervous System	...	...	1	...	1
Tuberculosis of Intestines and Peritoneum ...	1	...	...	...	1
Other Tuberculous Diseases	...	...	1	...	1
Meningitis	...	...	1	...	1
Convulsions	...	2	...	...	2
Bronchitis	1	...	...	2	3
Pneumonia	...	4	6	4	14
Other Respiratory Diseases	...	...	...	1	1
Diarrhœa and Enteritis	3	7	2	1	13
Hernia	...	...	...	1	1
Congenital Debility	1	2	...	...	3
Premature Birth	...	1	...	...	1
Suffocation in Bed	1	...	...	...	1
Other Causes	1	1	1	1	4
Totals	8	22	17	16	63

These 63 deaths correspond to a rate of 25 per 1,000 first attendances at the consultations, compared with a total rate of 47 deaths at similar ages (*i.e.*, 4 weeks to 12 months) per 1,000 births for the city generally.

Ante-natal Consultations.—The record of attendances at the ante-natal clinics is given in the following statement :—

Clinic	Consultations	First Attendances	Total Attendances
Canton	46	253	1,042
Gabalfa	46	113	517
Glossop Terrace	98	803	3,340
Totals	190	1,169	4,899

An analysis of new cases (definitely pregnant) attending the clinics and who were confined during 1929 is given below.

Type of case :—	
Primiparæ	285
Multiparæ	638
Total	923

Of these 923 cases, 492 were found to be suffering from 675 diseases, abnormalities or defects, as follows :—

Albuminuria	52
Bell's palsy	1
Anæmia	5
Chorea	2
Conditions requiring version	4
Contracted pelvis	25
Dental defects requiring treatment	239
Diabetes	2
Enlargement of thyroid	3
Fibroids	4
Hæmorrhage	29
Hæmorrhoids	3
Heart conditions	13
Hernia	2
Hydrometra	4
Malpresentation	1
Mastitis	1
Otorrhœa	2
Oxyuris	3
Respiratory diseases	22
Rheumatism	1
Skin diseases	8
Syphilis	24
Tonsillitis	3
Toxæmia	1
Tuberculosis (Pulmonary)	3
Vaginal discharge	150
Varicose veins and œdema	54
Vomiting	14
Total	675

Place of confinement :—

Private dwelling-houses	457
Maternity Hospital (Cardiff Royal Infirmary) ...	415
City Lodge Hospital	16
Private Maternity Homes	2
Outside Cardiff	9
Not traced	24
Total	923

Since June, 1925, pregnant women attending the ante-natal clinics have been subjected to a blood examination for syphilis. The usual technique has been considerably simplified, the Wassermann reaction being done with 1 c.c. of blood serum only. The specimen is collected in a Wright's capsule after applying a tourniquet below the knuckle and pricking the patient's thumb near the nail bed. The operation is simple, easy to perform and not alarming to the patients, who readily consent to it. The results to the end of 1929 show that of 2,909 such routine tests, 84, or 2·9 per cent., were positive. Patients found at the ante-natal clinics to be suffering from syphilis are referred for treatment to the auxiliary treatment centre for mothers and children, which is conducted in close co-operation with the maternity and child welfare section of the Department.

Maternity Hospital.—The numbers of expectant mothers in necessitous circumstances, or suffering from abnormalities of pregnancy, and emergency cases admitted to the Maternity Hospital (Cardiff Royal Infirmary) were as follows :—

Complicated cases sent by General Practitioners ..	57
Cases admitted through Ante-natal Clinics ...	398
Other Cardiff cases	2
Total	457

Maternity and Nursing Homes.—At 31st December, 1929, there were 23 registered nursing homes, 11 providing for maternity cases only, 6 providing for surgical and/or medical cases only and 6 providing for both maternity and other cases. The total number of beds in the registered nursing homes was 161, of which 73 were available for maternity cases. All the homes for which application for registration was made were duly registered after careful inspection and remedy of defects.

Extra-Domiciliary Confinement.—The number and proportion of births registered as having occurred away from private dwelling-houses during 1929 are given below :—

Place of Birth	Number	Number per 1,000 Births
Cardiff Royal Infirmary	401	102
City Lodge Hospital	78	20
Private Maternity Homes	149	38
Totals	628	160

The proportion of births belonging to Cardiff which occurred in the two institutions mentioned and in private maternity homes in 1919 (*i.e.*, the first complete year since the Maternity Branch of the Cardiff Royal Infirmary has been open) was 49 per 1,000 births. From 1919 to 1926 the proportion rose gradually each year to 142, but dropped to 132 and 130 per 1,000 births in 1927 and 1928 respectively. The proportion in 1929 (160 per 1,000 births) is the highest yet recorded.

Dental Clinic.—The following is a record of the year's work :—

	Mothers	Children	Totals
nspected	227	176	403
'reated	466	163	629
ttendances :—			
For inspection	227	176	403
For treatment	869	171	1,040
'eeth extracted	2,131	665	2,796
'eeth filled	9	21	30
)ressings	31	1	32
calings	34	...	34
næsthetics administered :—			
General	292	167	459
Local	129	...	129
upplied with dentures	103	...	103

Dentures supplied :—

Full upper	80
Partial upper	17
Full lower	65
Partial lower	15
Cost of dentures	£157 5s. 6d.
Amount reclaimed from patients	£24 8s. 0d.
Amount recovered from patients	£14 14s. 0d.

Domiciliary Visits by Health Visitors.—The following is a summary of the visits by the health visitors in connection with maternity and child welfare :—

Births—First visits		3,590
Births and infant deaths—Combined visits		103
Infant deaths investigated		187
Still-births investigated		177
Routine visits	Infants under one year	7,335
	Children over one year	8,614
Expectant mothers	First visits	147
	Re-visits	41
Infectious Diseases :—		
Ophthalmia Neonatorum	First visits	50
	Re-visits	107
Puerperal Fever	First visits	10
	Re-visits	—
Measles	First visits	1,208
	Re-visits	248
Whooping Cough	First visits	188
	Re-visits	2
Mumps	First visits	519
	Re-visits	6
Financial inquiry—Visits		524
Other visits		3,614
	Total	26,670

Supply of Free Milk.—Milk was supplied free of charge in necessitous cases and on medical certificate to the following extent :—

	Fresh Milk—Grade A (T.T.)		Dried Milk	
	Individual Cases	Pints Granted	Individual Cases	Pounds Granted
Children	1,010	30,806	273	1,786
Mothers	876	26,632	...	...
Totals	1,886	57,438	273	1,786

Feeding of Infants.—With the object of ascertaining the effects of breast feeding as compared with artificial feeding of infants, the following table has been prepared from the records of the Department. It refers to certain infants born in 1928, and

shows the type of feeding and the numbers who survived or died before reaching the end of the first year of life.

	Number		Living at end of 1 year from birth		Died under 1 year of age	
Entirely breast fed—						
For 6–9 months	487		480		7	
Beyond 9 months	9		9		...	
For 3–6 months	668		660		8	
For 0–3 months	1,131		1,017		114	
	——	2,295	——	2,166	——	129
Partially breast fed—						
For 6–9 months	6		6		...	
Beyond 9 months	...		...		...	
For 3–6 months	17		17		...	
For 0–3 months	831		772		59	
	——	854	——	795	——	59
Artificially fed from birth		202		180		22
Record incomplete		125		38		87
Totals		3,476		3,179		297

Among the children artificially fed from birth the mortality was as high as 10·9 per cent., whereas it reached only 5·6 per cent. in the totally breast-fed and 6·9 per cent. in the partially breast-fed. These proportions correspond closely to those given for the previous year.

Training of Midwives.—Four free studentships were awarded to women by the City Council for attendance at the courses of lectures given at the Welsh National School of Medicine, and one woman selected by examination was provided with a scholarship for practical training at the Queen's Institute of District Nursing.

Midwives Practising in Cardiff.—The number of midwives practising in Cardiff at the end of the year was 126. These may be classified as follows :—

According to qualifications :—

Bona fide	10
Certificate of Central Midwives Board	116
Total	126

According to type of practice :—

Attached to public institutions	31
Conducting private maternity homes	11
Dealing with less than five cases per annum	11
Monthly nurses	10
Others	63
Total	126

Officers of the Department made 240 visits of inspection of midwives, and midwives' appliances, etc., were disinfected in 9 instances.

The following is a record of the work of midwives in Cardiff during the year in relation to the births which were the subject of visits by the health visitors :—

Attendances at births by midwives* as ascertained by health visitors :—

(*a*)	Alone	1,843
(*b*)	With a medical practitioner :—	
	(i) Medical practitioner engaged	776
	(ii) Medical practitioner called in emergency ...	568

Attendances at still-births by midwives* :—

(*a*)	Alone	33
(*b*)	With a medical practitioner :—	
	(i) Medical practitioner engaged	66
	(ii) Medical practitioner called in emergency ...	54

Medical Practitioners called in by Midwives in Emergency.—During the year the number of instances in which medical practitioners were called in by midwives in emergency was 826, and claims for emergency fees were made by practitioners in 489 cases. The fees claimed totalled £720 14s. 6d. and in 166 instances fees amounting to £138 15s. 11d. were reclaimed from patients. The sum actually recovered during the year was £125 19s. 3d. (including sums reclaimed in 1928). The proportion recovered of the amount paid to practitioners was 17·5 per cent.

The following statement gives the reasons for medical help being summoned by midwives :—

(1)	MOTHER.—		
	(*a*) *Pregnancy*—		
	Abortion	59	
	Hæmorrhage	18	
	Albuminuria and œdema and other toxic causes	14	
	Other causes	4	
		—	95
	(*b*) *Labour*—		
	Abnormal presentation	28	
	Premature labour	34	
	Obstructed and delayed labour	254	
	Placenta prævia, ante-partum hæmorrhage and eclampsia, and other toxic causes ...	35	
	Post-partum hæmorrhage and retained and ahherent placenta	46	
	Ruptured perineum	130	
	Other causes	31	
		—	558
	(*c*) *Lying-in*—		
	Pyrexia, secondary post-partum hæmorrhage and phlegmasia and other septic causes ...	43	
	Other causes	6	
		—	49
(2)	INFANT.—		
	Debility	44	
	Inflammation of or discharge from eyes	38	
	Other causes	42	
		—	124
	Total		826

* Other than those engaged in midwifery at the Cardiff Royal Infirmary and the City Lodge.

Puerperal Fever and Puerperal Pyrexia.—Statistics as to the number of cases of puerperal fever and puerperal pyrexia notified during the year under the Public Health (Notification of Puerperal Fever and Puerperal Pyrexia) Regulations, 1926, are given in the section dealing with communicable diseases and in the statistical tables (Appendix I), but as the work involved comes within the province of maternity and child welfare it is referred to here. Thirty-four cases of puerperal fever and 82 cases of puerperal pyrexia were notified, 8 of the former and 5 of the latter being removed to the Isolation Hospital for treatment ; 1 case of puerperal fever was referred to the Queen's Institute of District Nursing for home nursing. General practitioners sought the assistance of the Department in several cases, but a specialist consultation was not required in any instance.

Deaths due to Conditions of Pregnancy and Parturition.—During the war, according to local records, 14 deaths were registered as being due to conditions of pregnancy and parturition. The following is a classification according to the type of assistance engaged or employed in these cases :—

	Sepsis	Other Causes	Totals
(1) No medical practitioner or midwife engaged ...	...	1	1
(2) Medical practitioner engaged—			
(*a*) Treated or confined at home	...	2	2
(*b*) Transferred to institution	1	6	7
	— 1	— 8	— 9
(3) Midwife only engaged—			
(*a*) No medical aid sought	...	...	...
(*b*) Medical aid sought	...	...	...
(*c*) Transferred to institution	2	1	3
	— 2	— 1	— 3
(4) Admitted to institution by previous arrangement ...	...	1	1
Totals	3	11	14

Home Nursing.—The following is a record of the work done by the Queen's Institute of District Nursing for the maternity and child welfare section of the Department :—

Cases referred to the Institute during 1929 :—

Ophthalmia neonatorum	16
Ophthalmia (other than ophthalmia neonatorum) ...	6
Other eye diseases	18
Impetigo	26
Otitis media	14
Otorrhœa	19
Puerperal fever	1
Other diseases	124
Total	224

Visits during 1929 :—

To cases referred during 1929	3,986
,, ,, ,, 1928	123
Total ...	4,109

Home Helps.—" Home Helps " were provided by the Department in 60 cases in which mothers confined at home were without adequate domestic help and without means of obtaining it.

Crippling Defects and Orthopædics.—A report by Dr. Betenson dealing with the work of the orthopædic scheme is included in the Annual Report on the School Medical Service (page 140) and only such records regarding children under school age as are not included there are dealt with in this part of the Report. The clinic and the facilities for treatment exist both for school children and for children under school age. A classification of new cases under 5 years of age examined for the first time during 1929 is given on page 141.

The following is a summary of the work carried out at the orthopædic clinic during 1929 :—

	Children under School Age.
Consultation Clinic :—	
Examined for first time	87
Recommended for treatment for first time	50
Previously treated, recommended for additional treatment	41
Recommendations for :—	
Treatment in Hospital	17
Treatment at Clinic (Special and Routine)	41
Appliances	6
Alterations to appliances	2
Special boots	1
Alterations to boots	18
Other forms of treatment	6
Treated at Clinic for first time	3
Attendances at Clinic	295
Routine Treatment (massage, electricity, exercises, etc.) :—	
Treated at Clinic for first time	40
Attendances for routine treatment	982

The following statement relates to treatment at and provision of appliances, etc., through the Prince of Wales' Hospital, Cardiff, during 1929 :—

	Children under School Age.
Hospital Treatment :—	
Admitted to Prince of Wales' Hospital—	
(*a*) Day cases	4
(*b*) Other cases	5
Under treatment at Prince of Wales' Hospital at end of 1929	—
On Prince of Wales' Hospital waiting list at end of 1929—	
(*a*) Day cases	3
(*b*) Other cases	6
Other treatment or provision (including appliances, etc., provided following hospital treatment) :—	
Appliances provided	13
Appliances altered	2
Special boots provided	4
Alterations to boots	15
Other forms of treatment provided	2

Venereal Diseases.—Tabular statements relating to the work of the auxiliary treatment centre for mothers and children are included in the section dealing with venereal diseases (page 45).

Radiography.—The X-ray apparatus is used for radiography for both maternity and child welfare and school medical service cases, and a note by Dr. Anderson on the work done during 1929 is contained in the Annual Report on the School Medical Service (page 137), from which it will be seen that 80 individual maternity and child welfare cases were dealt with. Details of the X-ray examinations carried out are given in the table on page 138.

Artificial Light Treatment.—Artificial light treatment of delicate children under five years of age, which was commenced at the Central Clinic in February, 1928, has been continued during 1929. A full description of the apparatus and of the routine followed was given in the Report for 1928. A report on the work of the clinic during 1929 by Dr. Gibbs is given below.

Report by Dr. Nancy K. Gibbs on the Artificial Light Treatment Clinic.

" The number of children and diseases treated for the first time during 1929 is shown in the following table :—

Alopecia	2
Asthma	1
Cervical adenitis	1
Cœliac disease	1
Debility	3
Malnutrition	4
Malnutrition and anæmia	4
Malnutrition and anorexia	1
Malnutrition and debility	1
Marasmus	1
Nasal and bronchial catarrh	1
Rickets	36
Rickets and anæmia	1
Total	57

" The total number of attendances for treatment during the year was 884.

" The same method of treatment was used as last year, viz., to aim at a ' reactionary erythema ' at each exposure. This is usually considered to be the optimum treatment for rickets, which is the disease most commonly treated, and undoubtedly the satisfactory results bear this out.

" As one would expect with this line of treatment, pigmentation was never marked, and children under a few years of age are recognised to follow no rule in this respect.

" Again one of the earliest results of treatment was an increase in brightness and alertness. As usual, all cases who failed to attend were visited by a nurse at least once. If a second visit were required, parents were asked to state definitely whether or not they intended to continue treatment. This is necessary in view of the fact that the waiting list contains at least twice as many children as we are treating. The worst attenders were the cases where treatment was most urgently required—suggesting that lack of proper care at home was largely responsible for the ill-health.

" Only one parent complained that her child caught cold as the result of treatment, and in this instance the child was being treated for persistent nasal catarrh which had failed to clear up after tonsillectomy. This low figure is surprising in view of the fact that it is very difficult to maintain a temperature of even 60°F. in the treatment room ; in order to do this, ventilation has to be sacrificed and, secondly, because part of a general waiting room screened off has to be used as a dressing room.

" When the Medical Inspector of the Welsh Board of Health visited the clinic, she suggested that pulse and temperature observations should be made before and

after treatment. As was pointed out last year, systematic records of every child could not be made with our present staff and, so far, no one has shown that any practical use in regulating treatment has been gained by such observations. About fourteen children, however, were selected, suffering from differing ailments, and about two hundred and sixty observations of temperature and pulse before and after treatment were made. In the first place, pulse rates at the ages of these children are unreliable, because frequently the child is crying and excited by the undressing and other unusual circumstances of the clinic. It was found that in any given child the temperature was sometimes higher after treatment and sometimes lower, and no relationship to the benefit gained was observed. However, one point of practical significance emerged from this investigation, viz., that the temperature was found fairly frequently to be well above normal (99·2 to 100 or even higher) when the child was regarded as fit for treatment judging from the mother's statements and general observation. In these cases medical examination often revealed bronchitis or an inflamed throat. On account of this it was decided to take all the children's temperatures before treatment, and to give time to do so the systematic records of temperature and pulse after, as well as before, treatment were abandoned. From this time no child with a temperature (in the axilla) above 99 was treated. It is at least conceivable that such a child might suffer ill-effects from being undressed for a considerable period in a not very warm room and then leaving to go out into the cold and damp, often inadequately protected. In addition, there is the possibility of the raised temperature indicating the onset of an infectious disease. If the medical officer is present the child is examined and the mother advised. In the absence of the medical officer the nurse instructs the mother to see her own practitioner if the child does not seem quite well next day. In either case the child is sent home at once.

"The largest single group of diseases treated was, as last year, rickets. The benefit derived from treatment was again striking and much more marked than by only giving a vitamin preparation. The child's general condition so obviously improves, in addition to the gradual disappearance of the diagnostic signs in the bones, when given light treatment. These cases were controlled by radiography, and there are a few films showing typical 'before' and 'after' treatment pictures. The majority of cases treated were early cases of rickets, the aim being to treat before deformities developed requiring orthopædic treatment. Massage was combined with light treatment wherever deformities were already beginning to result, in order to correct them before the bones were healed, and hence hardened, and therefore impossible to correct by massage. Three or four cases at a time were generally receiving both forms of treatment on the same day.

"A system of prophylactic treatment was begun during the year in the following way:—Where a child was being treated for rickets and there was a younger one in the family, this infant was given a short course of treatment during his or her first year of life. The object is to prevent the occurrence of rickets. It is too early to prove this from our experience yet, but so far the results have been encouraging. Thus members of the same family form controls for one another, because where one child has had rickets the next, so little younger in most cases, is likely to develop rickets too unless prophylactic treatment is given.

"A considerable number of cases of malnutrition, with or without anæmia, were treated. They all improved in general health, and, although they gained but little weight during the period of treatment, they were found to have done so subsequently. It is possible that much of this improvement was due to the weekly repetition of advice in regard to general hygiene and diet.

"The opportunity to follow up the children who have been discharged is afforded by sending for two or three such children to attend the clinic on the medical officer's day. Each child is asked to come perhaps once in three months."

Section 10.

LABORATORY WORK.

Cardiff and County Public Health Laboratory.—The following statement shows the work carried out for Cardiff during 1929.

Bacteriological Examinations :—	
Water Supplies	372
Milks for Tubercle Bacilli	162
Milks for Brucella Abortus	68
Milks for other Organisms	522
Butter for Tubercle Bacilli	1
Sputa for Tubercle Bacilli	976
Urines for Tubercle Bacilli	32
Rodents for Plague	1,023
Specimens for—	
Diphtheria	2,855
Typhoid Fever	55
Malaria	8
Gonorrhœa	808
Syphilis (Wassermann Reaction)	1,932
Syphilis (Spirochæta Pallida)	6
Ringworm	8
Fæces for Organisms	49
Cerebro-Spinal Fluids	18
Other Examinations	124
Chemical Examinations :—	
Water Supplies	153
Milk and Milk Products	428
Air of Cinemas	11
In connection with Atmospheric Pollution	12
In connection with Ultra-violet Radiation	365
Other Examinations	24
Total	10,012

The number of specimens examined for suspected disease in patients resident in Cardiff, together with results of such examinations, are shown below :—

Suspected Disease	Positive Results	Negative Results	Totals	Percentage of Positive Results
Diphtheria	433	2,422	2,855	15·2
Typhoid Fever	24	31	55	43·6
Tuberculosis	252	724	976	25·8
Gonorrhœa	77	731	808	9·5
Syphilis—				
Wassermann Reaction ...	266	1,666	1,932	13·8
Spirochæta Pallida ...	1	5	6	16·7

The above figures relate to specimens and samples actually examined during 1929.

Section 11.

HOUSING.

The following is a statement in the form required by the Ministry in relation to housing :—

Number of New Houses erected during the Year :—

(*a*) Total (including numbers given separately under (*b*))	579
(*b*) With State assistance under the Housing Acts :—	
(i) By the Local Authority	298
(ii) By other bodies or persons	154

1. *Inspection of Dwelling-houses during the Year :—*

(1) Total number of dwelling-houses inspected for housing defects (under Public Health or Housing Acts)	6,262
(2) Number of dwelling-houses (included under sub-head (1) above) which were inspected and recorded under the Housing Consolidated Regulations, 1925	1,163
(3) Number of dwelling-houses found to be in a state so dangerous or injurious to health as to be unfit for human habitation ...	16
(4) Number of dwelling-houses (exclusive of those referred to under the preceding sub-head) found not to be in all respects reasonably fit for human habitation	2,025

2. *Remedy of Defects during the Year without Service of formal Notices :—*

Number of defective dwelling-houses rendered fit in consequence of informal action by the Local Authority or their officers ...	1,790

3. *Action under Statutory Powers during the Year :—*

A.—Proceedings under section 3 of the Housing Act, 1925.

(1) Number of dwelling-houses in respect of which notices were served requiring repairs	27
(2) Number of dwelling-houses which were rendered fit after service of formal notices :—	
(*a*) By owners	12
(*b*) By Local Authority in default of owners	—
(3) Number of dwelling-houses in respect of which Closing Orders became operative in pursuance of declarations by owners of intention to close	—

B.—Proceedings under Public Health Acts :—

(1) Number of dwelling-houses in respect of which notices were served requiring defects to be remedied	61
(2) Number of dwelling-houses in which defects were remedied after service of formal notices :—	
(*a*) By owners	97
(*b*) By Local Authority in default of owners	1

C.—Proceedings under sections 11, 14 and 15 of the Housing Act, 1925.

(1) Number of representations made with a view to the making of Closing Orders	2
(2) Number of dwelling-houses in respect of which Closing Orders were made	2
(3) Number of dwelling-houses in respect of which Closing Orders were determined, the dwelling-houses having been rendered fit	2
(4) Number of dwelling-houses in respect of which Demolition Orders were made	6
(5) Number of dwelling-houses demolished in pursuance of Demolition Orders	6

House Inspection.—The results of all recorded house inspections during the year have been summarised in the following table, with the object of showing the various conditions found to exist in working-class property.

The figures relating to overcrowding, dampness, ash-bins, flushing cisterns and food storage serve to indicate the lines along which future action should be directed.

Structurally separate dwellings inspected and recorded...	1,163
Number overcrowded, as measured by :—	
Air-space standard*	57
Undesirable intermingling of sexes†	48
Registrar-General's standard‡	45
Number with :—	
One family	688
Two families	383
Three families	85
More than three families	7
Without through ventilation	13
Without satisfactory washing accommodation ...	52
Without satisfactory cooking arrangements	9
Without proper food pantries	749
Without troughs	370
Dampness from :—	
Defective roofs, shutes or downpipes	368
Defective outside plastering or joints	108
Lack of, or defective, damp-proof course ...	13
Without Corporation water	5
With earth or pail closets	9
Drained to cesspools	—
Without flushing cisterns	710
With flushing cisterns out of repair	49
Without covered galvanised iron ash-bins	1,070
Found to be not reasonably fit for human habitation ...	182
Found to be unfit for human habitation	16

Multiple Tenancy.—For comparison with the inquiries made in previous years, the following summary is given of the living conditions of families coming under the observation of the Department in relation to multiple tenancy :—

Source of Information.	Number of Houses.	Percentage occupied by more than One Family.
Birth Records	3,351	57·2
Tuberculosis Records	383	37·9
Housing Records	1,163	40·8

* At least 300 c. ft. per adult and 150 c. ft. per child under 10 years of age in bedrooms.

† Where two or more persons of the opposite sex, each over 13 years of age, excluding married couples, occupy the same room for sleeping purposes.

‡ More than two persons per room. Both living and sleeping rooms are included in the total number of rooms, and all children are counted as adults.

Corporation Housing Estates.—The sanitary supervision of these estates has developed considerably during the past year, primarily with the object of ensuring that prospective tenants are not undesirable and that they will be allotted a house which at the commencement of their tenancy is free from vermin. In addition, the investigation of all alleged cases of verminous infestation and other insanitary circumstances, such as overcrowding, is carried out immediately the facts are brought to the notice of the Department. This has meant a considerable amount of additional work, but its importance cannot be too strongly emphasised, and even now it is doubtful whether enough is being done to ensure that every Council house reaches the high standard of cleanliness that is desirable. Briefly, the control exercised by this Department has been concerned with the following matters :—

1. Reports on the home conditions of applicants.
2. The investigation of cases requiring to be rehoused for hygienic reasons.
3. The inspection of all vacant Council houses before reletting.
4. The inspection of all houses where transfers are contemplated.
5. The investigation of alleged verminous conditions, overcrowding, trading on premises, etc.
6. The supervision of the disinfestation of all verminous houses.

During the year, 350 reports have been forwarded to the City Treasurer and Controller regarding various matters in connection with Council houses and prospective tenants. One hundred and ninety-two houses were found to be in a verminous condition. The method adopted for the eradication of bugs consists of stripping if the walls are papered, the removal of skirtings and picture-rails in bad cases, followed by the application of heat over all parts likely to harbour bugs by means of a painter's blow lamp ; finally, each affected room is sprayed with a 5 per cent. solution of carbolic acid, immediately followed by sulphur fumigation. This practice has been particularly successful, and very few instances of a recurrence of the trouble have been experienced. The whole of the process of disinfestation is carried out by tenants or workmen under the supervision of sanitary inspectors, and a certificate is forwarded to the City Treasurer and Controller when the house is considered free from vermin.

A leaflet in the following terms has been issued to each Corporation tenant with the object of calling attention to the seriousness of the problem of the verminous house :—

THE PREVENTION OF VERMIN IN HOUSES.

" The attention of all tenants and prospective tenants of Council houses is called to their duty to prevent the houses which they occupy from becoming infested with vermin, and more especially bugs. This problem is assuming serious proportions on the Corporation Housing Estates, and the eradication of vermin is now costing the City Council a great deal of money.

" All vacant houses are inspected and, if necessary, cleansed before being relet, The new tenant is therefore assured of freedom from vermin on entry. It is his duty to maintain the house in this state, and to report immediately the earliest sign of infestation.

" Bugs may become established in perfectly clean houses in any of the following ways :—

1. Carelessness on the part of the tenant.
2. Carelessness on the part of the sub-tenant.
3. The purchase of second-hand furniture—particularly bedsteads and mattresses.

" The experience of this Department is that bugs are most commonly brought into houses by the sub-tenant or by second-hand furniture. Tenants are reminded that sub-letting is prohibited. Their attention is directed especially to the need for taking precautions against the introduction of bugs by means of second-hand furniture. Any tenant who has purchased a second-hand article of furniture should immediately report it to this Department in order that an inspector may examine it and advise and assist, if necessary, in getting rid of vermin.

" As wallpaper forms a common nesting place for bugs its use is not sanctioned, but paint or distemper is approved.

" Cases have been known where a clean house has become infested as a result of the verminous condition of the house adjoining. In all instances where this cause is suspected tenants should immediately report the fact to either the City Treasurer and Controller's Department or to this Department.

" I would impress upon existing tenants that the officers of this Department are always ready to advise in getting rid of vermin, and any information received is always treated in strict confidence. On the other hand, failure to report the presence of vermin, resulting in serious infestation, will be visited with the strongest penalties of the law."

Section 12.

FOOD INSPECTION.

Meat Inspection at Municipal Abattoirs.—The following tables set out in detail the work done in connection with meat inspection during the year.

Animals slaughtered and whole carcases found diseased which were surrendered and destroyed or otherwise dealt with by arrangement with the owners :—

	Roath Abattoir		Canton Abattoir		Totals	
	Slaughtered	Diseased or unsound and destroyed	Slaughtered	Diseased or unsound and destroyed	Slaughtered	Diseased or unsound and destroyed
Bulls	111	...	33	1	144	1
Cows	1,160	40	279	6	1,439	46
Heifers	2,788	3	377	2	3,165	5
Steers	2,275	2	385	...	2,660	2
Calves	10,773	22	881	2	11,654	24
Sheep and Lambs	37,005	61	10,541	22	47,546	83
Pigs	26,661	109	5,472	29	32,133	138
Totals	80,773	237	17,968	62	98,741	299

Instances in which tuberculosis was found :—

	Roath Abattoir		Canton Abattoir		Totals	
	Number	Percentage	Number	Percentage	Number	Percentage
Cattle :—						
Bulls	30	27·0	8	24·2	38	26·4
Cows	335	28·9	43	15·4	378	26·3
Heifers	62	2·2	14	3·7	76	2·4
Steers	45	2·0	11	2·9	56	2·1
Calves	17	0·2	1	0·1	18	0·1
All Cattle	489	2·8	77	3·9	566	3·0
Pigs	226	0·8	99	1·8	325	1·0

Causes of destruction of carcases :—

Cause	Beef	Mutton and Lamb	Veal	Pork	Totals
Tuberculosis	51	...	9	109	169
Dropsy	1	14	...	1	16
Emaciation	1	20	1	1	23
Dropsy and Emaciation	...	26	...	...	26
Johne's Disease	...	...	...	...	...
Moribund	...	7	3	2	12
Found dead	...	...	...	...	...
Decomposition	...	...	...	...	...
Other Causes	1	16	11	25	53
Totals	54	83	24	138	299

Approximate weight of diseased or unsound meat surrendered and destroyed or otherwise dealt with by arrangement with the owners :

	Tons	cwt.	lb.
Carcases of—			
Beef	14	19	32
Veal	0	18	57
Mutton and Lamb	1	4	12
Pork	5	5	88
Part carcases of—			
Beef	1	15	41
Veal	0	0	63
Mutton and Lamb	0	1	85
Pork	0	14	24
Offal of—			
Beasts	21	10	20
Calves	0	6	3
Sheep and Lambs	2	1	61
Pigs	3	14	10
Total	52	11	48

Meat Inspection at Private Slaughter-houses.—The numbers of animals slaughtered were as follows :—

Sheep and Lambs	221
Pigs	1,211
Total	1,432

Seven unsound carcases of pork were destroyed, the cause in each case being tuberculosis. Tuberculosis was found in carcases of pork in 30 instances, the proportion being 2·5 per cent.

The total weight of unsound meat surrendered at private slaughter-houses and destroyed by arrangement with the owners was 12 cwt. 79 lb.

Caseous Lymphadenitis.—The prevalence of caseous lymphadenitis in consignments of mutton from Australia and South America has continued to throw a considerable amount of additional work on the Department. In addition to carcases arriving at the port, all consignments received from other towns have been examined, and in some instances the presence of the disease has made it necessary for each individual carcase to be thoroughly inspected. Although recently there has been a decrease in the proportion of diseased carcases found, it is still sufficiently high to prevent any relaxation in the thoroughness of inspection.

The following is a summary of the inspection for caseous lymphadenitis of imported carcases of mutton and lamb at cold stores in the city during 1929 :—

	Number of Carcases.	Number Condemned.	Percentage Condemned.
Mutton	15,149	149	0·98
Lamb	6,917	1	0·01
Totals	22,066	150	0·61

Handling, Storage and Preparation of Food.—In accordance with modern public health policy, increasing attention has been paid to this aspect of food inspection, particularly in relation to restaurant kitchens, cafes and other places where food is

prepared. Food hawkers have also been watched, and their storage arrangements inspected. This has been a very necessary precaution, as in many instances it was found that the accommodation provided for the storage of fruit and vegetables was also used for stabling or other purposes incompatible with safety. The experience accumulated concerning food storage and handling led the Council to seek extended powers in a Private Bill promoted during 1929, which will be dealt with in next year's Report.

Unsound Food exposed or intended for Sale.—The following is a record of the work done by the sanitary inspectors in connection with inspection of food exposed or intended for sale during the year :—

Number of inspections of shops stores, etc. :—

Butchers' shops	2,785
Provision shops	397
Markets	362
Wholesale stores	1,240
Fish and fruit shops	1,146
Butter factories	103
Margarine stores (wholesale)	91
Ice cream premises and barrows ...	459
Fried fish shops	520
Food vehicles	200
Railway stations	65
Other premises	255
Total ...	7,623

Approximate weight of diseased or unsound food found in shops and stores and destroyed or disposed of by the owners otherwise than as food for human consumption:

	Tons	cwt.	lb.
Beef	0	4	57
Veal, etc.	0	0	5
Mutton, lamb, etc.	5	3	76
Pork, etc.	0	1	18
Rabbits	0	0	100
Fish	1	9	5
Poultry	0	0	59
Ham and bacon	0	1	91
Butter	0	0	40
Other provisions	9	5	12
Fruit	1	3	20
Offal	0	15	54
Vegetables	17	9	76
Nuts	0	0	110
Total	35	16	51

Milk Inspection.—The following is a statement showing the distribution of the milk business in Cardiff and the amount of milk sold per day in December, 1929 :—

Character of Business	Number of Vendors	
	Totals	Selling 6 Gallons or less per day
(1) From retail premises other than shops, with or without rounds	61	5
(2) By rounds direct from farms within the city boundary ...	12	...
(3) By rounds direct from farms or premises beyond the city boundary	56	7
(4) From shops (not entirely bottled milk) with or without rounds	121	89
(5) From shops (bottled milk only)	280	126
(6) By rounds only	120	11
(7) Under the Milk (Special Designations) Order, 1923 :—		
Grade A	5	3
Grade A (T.T.)	47	14
Certified	2	1
Totals	704	256

Approximate number of gallons sold per day by all vendors :—11,147 (including 184 gallons of Grade A, 442 gallons of Grade A (T.T.) and 11 gallons of Certified milk).

Veterinary Inspection of Cows.—The following are particulars of the inspection of cows carried out by Mr. P. J. Mullane, Veterinary Inspector :—

	Cowsheds in City.		Cowsheds beyond City Boundary.
Dairymen whose premises were visited	26	...	1
Visits to such premises	268	...	1
Cows in milk examined	303	...	53
Examinations of cows ...	3,198	...	53
Cows found diseased ...	5	...	3
Cows excluded from dairy herds at time of inspection ...	5	...	–
Cows not in milk examined ...	47	...	22
Examinations of cows ...	431	...	22
Cows found diseased ...	–	...	–

Condition of cows examined :—

	Cowsheds in City		Cowsheds beyond City Boundary	
	Cows in Milk	Cows not in Milk	Cows in Milk	Cows not in Milk
Suffering from—				
Tuberculosis of Udder	...	...	...	...
Other Forms of Tuberculosis	...	...	...	...
Acute Inflammation of Udder	3	...	...	...
Other Chronic Diseases of Udder	1	...	3	...
Other Diseases	1	...	...	...
Healthy	298	47	50	22
Totals	303	47	53	22

Tubercle Bacilli in Milk.—The number of routine samples of milk examined for tubercle bacilli was 113, five of which were found to be positive. The record of sampling from the commencement is shown in the following table :—

Year	Number of Samples	Number containing Tubercle Bacilli
1911	9 ...	—
1912	45 ...	5
1913	42 ...	1
1914	39 ...	—
1915	45 ...	—
1916	41 ...	1
1917	32 ...	—
1918	19 ...	1
1919	13 ...	—
1920	14 ...	1
1921	27 ...	2
1922	43 ...	2
1923	51 ...	2
1924	53 ...	1
1925	55 ...	2
1926	55 ...	1
1927	62 ...	6
1928	84 ...	4
1929	113 ...	5

The milk was produced outside Cardiff in four of the instances in which tubercle bacilli were found during 1929. The prescribed action under Section 4 of the Milk and Dairies (Consolidation) Act, 1915, was taken in each case.

Routine Bacteriological Examination of Milk.—The following is a record of the bacteriological examination of ordinary commercial milk carried out during 1929 :—

Month	Number of Samples examined	Number containing not more than 200,000 bacteria in 1 c.c.	Number with *B. Coli* absent in 1/100 c.c.	Number attaining Grade A standard by both tests	Percentage attaining Grade A standard
January	14	14	10	10	
February	11	11	9	9	
March	15	15	14	14	86
April	13	13	11	11	
May	12	12	12	12	
June	11	10	10	9	
July	11	5	5	3	64
August	11	10	9	9	
September	14	10	8	7	
October	14	12	9	9	
November	14	12	12	11	68
December	14	13	11	11	
Totals	154	137	120	115	75

The results are shown in such a way as to reveal the proportion which attained the standard prescribed by the Milk (Special Designations) Order, 1923, for Grade A milk. Throughout the year, 75 per cent. reached this standard, as compared with 71 per cent. in 1928 and 81 in 1927. The percentage in the warm months was 64, against 54 in 1928 and 67 in 1927.

Graded Milks.—The following is a statement of the number of licences for the various grades of milk and the number of individual dealers under the Milk (Special Designations) Order, 1923, each year since 1923 :—

Description	Number on 31st December.						
	1923	1924	1925	1926	1927	1928	1929
(1) Producers' licences to use the designation "Grade A"	...	1	1	1	1	1	1
(2) Dealers' licences to use the designation "Certified"	...	...	...	2	...	2	2
(3) Dealers' licences to use the designation "Grade A (Tuberculin Tested)"—							
(*a*) Bottling establishments	...	...	...	3	5	17	21
(*b*) Shops	...	...	...	...	...	17	25
(*c*) Supplementary	...	...	...	...	1	1	1
(4) Dealers' licences to use the designation "Grade A"—							
(*a*) Bottling establishments	3	3	6	6	9	2	2
(*b*) Shops	...	...	...	2	8	2	...
(*c*) Supplementary	...	2	2	2	1	1	3
(5) Dealers' licences to use the designation "Pasteurised"—							
(*a*) Pasteurising establishments	1	1	1	...	...	...	...
(*b*) Shops	...	...	...	...	...	...	...
(6) Individual dealers—							
(*a*) Licenced to use the designation "Certified"	...	...	...	2	...	2	2
(*b*) Licenced to use the designation "Grade A (Tuberculin Tested)"	...	...	...	3	5	34	45
(*c*) Licensed to use the designation "Grade A"	3	5	8	9	18	5	5

The following tables show the proportion of samples of Grade A and Grade A (Tuberculin Tested) milk which conformed with the standard laid down by the Order. In every instance of a sample being below standard steps were taken to ascertain the cause and remedy the defect.

(*a*) Samples from Producers' Supplies (before bottling).

Month	Number of Samples examined	Number containing not more than 200,000 bacteria in 1 c.c.	Number with *B. Coli* absent in 1/100 c.c.	Number attaining Grade A standard by both tests	Percentage attaining Grade A standard
January	3	3	3	3	
February	3	3	3	3	
March	2	2	2	2	100
April	4	4	4	4	
May	4	4	4	4	
June	2	2	1	1	
July	3	2	2	2	75
August	3	3	3	3	
September	3	3	3	3	
October	6	6	6	6	
November	4	4	4	4	100
December	5	5	5	5	
Totals	42	41	40	40	95

The results of the examination of 32 samples of Grade A (Tuberculin Tested) milk are included in the above table, 30 of which attained the required standard by both tests.

(*b*) Samples from Dealers' Supplies (after bottling).

Month	Number of Samples examined	Number containing not more than 200,000 bacteria in 1 c.c.	Number with *B. Coli* absent in 1/100 c.c.	Number attaining Grade A standard by both tests	Percentage attaining Grade A standard
January	25	25	25	25	
February	24	24	24	24	
March	26	26	26	26	100
April	28	28	28	28	
May	28	28	28	28	
June	28	27	26	25	
July	29	25	23	23	86
August	27	25	25	24	
September	27	23	20	18	
October	26	26	26	26	
November	27	26	26	26	91
December	27	27	27	27	
Totals	322	310	304	300	93

The results of the examination of 294 samples of Grade A (Tuberculin Tested) milk are included in the above table, 273 of which attained the required standard by both tests.

Food and Drugs (Adulteration) Act, 1928, etc.—Mr. Thomas Hughes, F.I.C., F.C.S., retired from the position of Public Analyst and Agricultural Analyst on 6th April, 1929. Mr. Hughes had served the Council for 43 years, first of all as a part-time officer and from October, 1920, as a whole-time analyst. His work was of the most thorough character and the Department never felt any uneasiness about going to Court on his reports. The Council were fortunate to obtain as his successor, Mr. Stanley Dixon, M.Sc., F.I.C., who took up duty on 8th April, 1929. The following is a report by Mr. Dixon on the work done under the Food and Drugs (Adulteration) Act, 1928, the various Regulations regarding food, and the Fertilisers and Feeding Stuffs Act, 1926, during 1929 :—

"The Food and Drugs (Adulteration) Act, 1928, which came into operation on January 1st, 1929, repealed and consolidated the Sale of Food and Drugs Acts, 1875 to 1927, and a number of other statutory provisions dealing with the adulteration of food and drugs. Since the new Act is a consolidating one only, the law relating to the sale and adulteration of food and drugs has not been altered in principle or amended in any way. It seems unfortunate that the opportunity was not taken to amend as well as consolidate the existing legislation and so remedy those defects and inconsistencies in the old Acts which necessarily remain, and at the same time bring the Act into conformity with the requirements of modern conditions of sale and distribution of food.

"The strength of spirits is now regulated by the Food and Drugs (Adulteration) Act, 1928, instead of the Licensing Act, 1921, but the minimum spirit strength remains unaltered.

"The Sale of Milk Regulations, 1901 and 1912, and the Sale of Butter Regulations, 1902, made under the Sale of Food and Drugs Act, 1899, are continued in force under the Food and Drugs (Adulteration) Act, 1928, and the Regulations dealing with condensed milk, dried milk and preservatives in food, made under the Public Health (Regulations as to Food) Act, 1907, also remain effective.

"The wording of the new Act is not entirely identical with that of the repealed statutes. For instance, the authorities administering the Act are now known as 'Food and Drugs Authorities' and the officers empowered to take samples as 'Sampling Officers.'

"During the year 1929, 1,006 samples of foods and drugs were submitted under the Act for analysis. Of these, 145 samples (75 of which consisted of milk) were analysed by Mr. Hughes during the first quarter of the year, and all were found to be genuine and of satisfactory quality.

"The following table shows the number and nature of the various articles submitted, and the number of samples of each variety found upon examination to be adulterated or of inferior quality :—

Description of Sample	Number Submitted	Number Adulterated	Number of Inferior Quality
Almonds, Ground	4	...	...
Apricots, Dried	9	...	...
Arrowroot	2	...	...
Brandy	1	...	...
Butter	81	1	...
Camphorated oil	5	...	...
Candied peel	6	...	...
Cheese	10	...	...
Chocolate	1	...	...
Cider	1	...	...
Cinnamon, Ground	2	...	...
Cocoa	8	...	...
Cocoanut ice	2	...	...
Coffee	17	...	...
Coffee and chicory extract	1	...	...
Cream	63	6	...
Cream cakes	4	...	...
Cream of tartar	4	...	...
Crystallised and glacé fruits	5	...	...
Currants	6	...	...
Custard powder	2	...	...
Epsom salts	4	...	...
Fish paste	2	...	...
Flour	6	...	...
Flour, Self-raising	6	...	...
Fruit juices and cordials	11	...	...
Gin	3	1	...
Ginger, Ground	3	1	...
Ginger wine	2	...	...
Jam	1	...	...
Margarine	48	...	...
Meats, Cooked	15	...	...
Milk	487	9	10
Milk, Condensed	10	...	2
Milk, Dried	2	...	...
Milk powder, Humanised	1	...	...
Milk, Skimmed	9	...	...
Non-alcoholic wines	2	...	...
Oatmeal	10	...	...
Pears, Dried	6	...	...
Peas, Tinned	1	...	...
Pepper	18	...	...
Pepper, Cayenne	8	...	1
Pickles	3	...	...
Prunes	4	...	...
Quinine, Ammoniated tincture of	3	...	...
Raisins	4	...	...
Rice	12	...	...
Rice, Ground	6	...	...
Sal Volatile, Spirit of	3	...	...
Sauce	1	...	...
Sausages	14	...	...
Sugar	11	...	...
Sultanas	15	2	...
Sweets, Boiled	3	...	...
Tea	18	...	...
Vinegar	12	...	...
Whiskey	8	...	...
Totals	1,006	20	13

"The number of samples analysed per 1,000 of the population of the city was 4·58, as compared with the average figure of 3·41 for the whole of England and Wales given in the Ministry of Health Report for 1928, which is the latest available.

"Of the samples collected, 48·4 per cent. consisted of milk, whereas 52·2 per cent. of the total samples collected throughout England and Wales during 1928 were samples of milk.

"The number of adulterated samples was 20, or 2 per cent., and particulars of these are given below :—

Article	Formal or Informal	Nature of adulteration or irregularity
Butter	Formal	22·5 per cent. of water.
Cream	Informal	7·0 grains per lb. of boric acid.
Cream	Informal	7·0 " " "
Cream	Formal	7·0 " " "
Cream	"	7·0 " " "
Cream	"	7·7 " " "
Cream	"	8·4 " " "
Gin	"	39·2 degrees under proof.
Ginger, Ground	"	350 parts per million of sulphur dioxide.
Milk	"	Deficient of 4 per cent. of milk-fat.
Milk	"	" 4 " "
Milk	"	" 4 " "
Milk	"	" 6 " "
Milk	"	" 8 " "
Milk	"	" 10 " "
Milk	"	Deficient of 3 per cent. of non-fatty solids.
Milk	"	" 4 " " "
Milk	"	" 6 " " "
Sultanas	Informal	1,000 parts per million of sulphur dioxide.
Sultanas	Formal	900 parts per million of sulphur dioxide.

"*Milk.*—Only nine of the 487 samples of milk (*i.e.*, 1·8 per cent.) were returned as adulterated, six being deficient in milk-fat and three in non-fatty solids. In addition to these, ten samples were returned as of inferior quality.

"The following table shows the average composition of all the milk samples analysed for each month and for the whole year. :—

	Number of Samples	Fat per cent.	Non-fatty Solids per cent.	Total Solids per cent.
January	43	3·81	8·93	12·74
February	26	3·74	8·95	12·69
March	6	3·68	8·96	12·64
April	37	3·44	8·71	12·15
May	42	3·51	8·87	12·38
June	38	3·52	8·98	12·50
July	66	3·82	8·72	12·54
August	41	3·75	8·85	12·60
September	41	3·56	8·90	12·46
October	54	3·78	8·96	12·74
November	46	3·92	8·94	12·86
December	47	3·78	8·82	12·60
Whole year	487	3·71	8·87	12·58
Legal standard	...	3·00	8·50	11·50

"These results show the normal seasonal variation in the composition of bulked milk, and the lowest figures are very considerably above those fixed by the Sale of Milk Regulations, 1901, below which adulteration is to be presumed.

"*Condensed and Dried Milk.*—Ten samples of condensed milk were examined during the year, five being described as 'Full Cream Unsweetened,' three as 'Full Cream Sweetened,' and two as 'Machine-skimmed Sweetened.' The Public Health (Condensed Milk) Regulations, 1923 and 1927, require that these articles shall contain not less than the following:—

Full Cream, Sweetened or Unsweetened ...	31 per cent. of milk solids, including 9 per cent. of fat.
Machine-skimmed Sweetened	26 per cent. of milk solids, including fat.

"The receptacles must also bear a label giving the description of the milk in a prescribed form and in letters of a specified size, and the label must state the number of pints of whole milk or skimmed milk to which the contents of the tin are equivalent.

"All the samples were found to comply with these regulations, and the statement of the number of equivalent pints of milk was in each instance correct.

"A sample of machine-skimmed sweetened condensed milk was found to be thick and gelatinous; green mould and red button-like masses were present, and it possessed an objectionable odour. The chemical analysis showed that inversion of some of the cane sugar had taken place, but the condition was not accompanied by gas-formation. These physical and chemical changes were doubtless brought about by the growth of certain micrococci and moulds induced by storage at too high a temperature. Another sample of this brand subsequently obtained from the same vendor was in a similar condition, whilst a third tin opened by the vendor himself showed even more marked changes, and he immediately withdrew his stock of this brand from sale.

"Dried full cream milk must contain not less than 26 per cent. of milk-fat, and the two samples examined contained 26·7 and 27·0 per cent. of milk-fat respectively. The label on each tin was in accordance with the Public Health (Dried Milk) Regulations, 1923 and 1927, and stated the correct number of pints of whole milk to which the contents of the tin were equivalent.

"The humanised milk powder was a preparation designed to be closely analogous to human milk when suitably diluted. It was found not to come under the Dried Milk Regulations, which apply only to 'dried milk to which no other substance has been added and to the dried milk contained in any powder of which not less than 70 per cent. consists of dried milk.' This article contained not more than 50 per cent. of dried milk. An analysis of the reconstituted article given on the label on the tin proved to be substantially correct for the water content given.

"*Butter.*—Only one of the 81 samples of butter was adulterated. This contained 22·5 per cent. of water, being 6·5 per cent. in excess of the standard of 16·0 per cent. laid down by the Sale of Butter Regulations, 1902, for genuine butter. When due care is taken and proper appliances used in the preparation of this article, there is no necessity for it to contain more than 16·0 per cent. of water even in the summer months. Two other samples of butter taken on the same day contained only 14·1 and 15·4 per cent. of water respectively. There was no evidence of the presence of fat foreign to butter in any of the samples.

"*Spirits.*—Twelve samples of spirits, comprising 8 of whiskey, 3 of gin and 1 of brandy, were analysed, and one of the samples of gin was found to be adulterated, being 39·2 degrees under proof. These potable spirits must be sold at an alcoholic strength of not more than 35 degrees under proof.

"*Preservatives.*—The Public Health (Preservatives, etc., in Food) Regulations prohibit the addition of preservatives to foodstuffs with the exception of certain specified articles, and in these cases a maximum for the amount of preservative is fixed. In the majority of these articles sulphur dioxide only is permitted, to others benzoic acid only may be added, whilst with certain non-alcoholic drinks either

sulphur dioxide or benzoic acid may be used. No other preservatives whatever are allowed, and in a few instances where preservative is permitted, its presence must be declared in a prescribed manner.

"The whole of the samples of milk, skimmed milk, condensed and dried milk, humanised milk powder, butter, margarine, cheese, cream cakes, cocoanut ice, coffee and chicory extract, cooked meats, crystallised and glacé fruits, currants, fish paste, jam and prunes were examined for preservatives, with negative results.

"The following table gives details of other articles which have been examined for the presence of preservatives and the results :—

Article	Number Examined	Number containing Preservative	Preservative found	Parts per million unless otherwise stated	
				Amount present	Maximum permitted
Apricots, Dried... ...	9	9	Sulphur dioxide	85 ; 620 ; 705 ; 910 ; 910 ; 925 ; 1,020 ; 1,050 ; 1,380	2,000
Candied peel	6	2	,, ...	45 ; 85	100
Cider	1	1	,, ...	40	200
Cream	63	6	Boric Acid ...	Grains per lb. : — 7·0 ; 7·0 ; 7·0 ; 7·0 ; 7·7 ; 8·4	Grains per lb.—None
Fruit juices and cordials	11	8	Sulphur dioxide	95 ; 110 ; 190	350
			Benzoic acid ...	295 ; 300 ; 345 ; 440 ; 485	600
Ginger, Ground... ...	3	1	Sulphur dioxide	350	None
Pears, Dried	6	6	,, ...	700 ; 760 ; 960 ; 970 ; 1,115 ; 1,490	2,000
Raisins	3	2	,, ...	345 ; 500	750
Sausages	8	2	,, ...	75 ; 100	450
Sugar	8	1	,, ...	40	70
Sultanas	15	7	,, ...	210 ; 255 ; 275 ; 685 ; 720 ; 900 ; 1,000	750
Sweets, Boiled	3	1	,, ...	45	70
Wines, Alcoholic ...	2	1	,, ...	40	450
Wines, Non-alcoholic ...	2	2	Benzoic acid ...	220 ; 278	600

"*Cream.*—Two informal samples of raw cream taken on the same day were found to contain boric acid contrary to the Regulations. Formal samples were immediately obtained, and the results of analysis showed these four samples to be almost identical in composition, each containing 7·0 grains per lb. of boric acid. One of the vendors stated he was supplied by a wholesale dealer who proved to be the vendor of the other sample, and the wholesale dealer stated this was Irish cream and requested that samples be taken in course of delivery to him. Two samples were therefore obtained at the railway station, and these were found to be adulterated, containing 7·7 and 8·4 grains per lb. of boric acid respectively.

"*Ground Ginger.*—The list of articles to which preservatives may be added does not include ground ginger. One of the three samples examined was found to contain 350 parts per million of sulphur dioxide and was therefore adulterated.

"*Sausages.*—The Regulations provide, in the case of sausages containing sulphur dioxide, that notice of the presence of preservative must be given to the purchaser, and the two samples that were preserved were properly labelled to this effect.

"*Sultanas.*—Two samples of sultanas contained an excessive amount of sulphur dioxide. An informal sample contained 250 parts per million in excess of the maximum of 750 parts per million permitted, and an official sample obtained from the same vendor contained an excess of 150 parts per million of sulphur dioxide.

" *Miscellaneous.*—Of the 63 samples of cream, two consisted of tinned cream, the remainder being raw cream. There is no standard for the amount of fat in cream, but all the samples of raw cream were rich in milk-fat, the quantity present varying from 37·0 to 65·0 per cent. The two brands of tinned cream contained 20·0 and 23·5 per cent. of milk-fat respectively.

" The proportion of water in the ten samples of cheese analysed was found to vary from 21·0 to 37·2 per cent., and the proportion of fat varied from 27·3 to 43·1 per cent. of the cheese, or from 43·5 to 55·5 per cent. of the dry matter in the cheese. These results indicate that all the samples had been prepared from whole milk. No foreign fat was present.

" A sample of cayenne pepper contained a small amount of extraneous mineral matter and was returned as of inferior quality.

" All the remaining articles were genuine and of entirely satisfactory quality.

" *Fertilisers and Feeding Stuffs Act*, 1926.—Twelve informal samples have been submitted for analysis by inspectors under this Act. These comprised the following articles :—

Barley Meal	2
Basic Slag	1
Bean Meal	2
Chicken Food	1
Indian Meal	1
Linseed Cake	2
Oats, Sussex Ground	2
Sulphate of Ammonia	1
Total	12

" The vendors of seven of the feeding stuffs failed to give a statutory statement until the omission was pointed out by the inspector. Irregular guarantees were given with the basic slag and sulphate of ammonia, and these were subsequently obtained in the correct form.

" Upon analysis, all the articles were found to be of satisfactory quality, and where figures of analysis were required to be given on the statutory statement, these proved to be within the ' limits of variation ' allowed by the Regulations.

" *Rag Flock Act*, 1911.—The object of this Act is to ensure that all rags used in the manufacture of flock for the purpose of making any article of upholstery, cushions or bedding shall be washed clean. The standard of cleanliness is prescribed by the Rag Flock Regulations, 1912.

" Three samples of rag flock were examined, and these were found to conform to the Regulations, the water soluble chlorine content being 15·1, 15·4 and 20·1 parts per 100,000 respectively.

" *Samples from the Port Sanitary Authority.*—The Port Sanitary Authority is empowered to submit samples of imported foodstuffs for analysis in order to ascertain whether or not they comply with the Public Health (Preservatives, etc., in Food) Regulations. Ten articles have been submitted and these were all found to comply with the Regulations and to be of satisfactory quality. The various articles are given in the following table :—

Article	Number Examined	Observations
Almonds, Ground ...	1	No preservative.
Apples, Dried	1	Contained 85 parts per million of sulphur dioxide. (Maximum 2,000 parts).
Cream, Tinned ...	1	No preservative. Composition stated on label correct.
Currants	1	No preservative.
Eggs, Liquid	1	No preservative.
Gelatine	1	Contained 470 parts per million of sulphur dioxide. (Maximum 1,000 parts).
Prunes	1	No preservative.
Raisins	2	1 sample contained 705 parts per million of sulphur dioxide. (Maximum 750 parts.)
Sugar	1	No preservative.
Total ...	10	

" In addition a bunch of grapes was examined.

" *Total number of Samples.*—The total number of samples analysed during the year was 1,037, viz. :—

Under Food and Drugs (Adulteration) Act ...	1,006
Under Fertilisers and Feeding Stuffs Act ...	12
Under Rag Flock Act	3
For Port Sanitary Authority	11
For City Coroner	5
Total	1,037 "

Legal Proceedings.—The following is a summary of the legal proceedings taken during the year in connection with food inspection :—

Acts, etc., under which Proceedings were taken	Number	Fined	Cautioned	To pay costs only	Dismissed	Withdrawn	Amount of Fines and Costs
							£ s. d.
Food and Drugs (Adulteration) Act, 1928	6	2	...	...	4	...	6 0 0
Milk and Dairies Order, 1926 ...	22	20	1	...	...	1	14 10 0
Totals	28	22	1	...	4	1	£20 10 0

Section 13.

GENERAL SANITATION.

Statements as to the nature and extent of the work done during 1929 in connection with the general sanitary inspection of the district are given below. A summary of legal proceedings and particulars with regard to disinfection, baths at the Cleansing Station and bodies removed to the Mortuary are also included.

General Sanitary Inspection.

Complaints of nuisances received ... ... 1,721.

	Inspections or Visits	Intimation Notices		Statutory Notices	
		Served	Complied	Served	Complied
House Inspections for Nuisances	2,285	1,767	1,576	61	97
,, ,, in connection with infectious diseases	3,060	61	54	...	...
,, ,, for vermin	436	169	124	...	...
,, ,, ,, other conditions ...	481	28	36	...	...
Houses inspected and "recorded"	1,163	...	...	...	...
Re-inspections of houses	10,731	...	...	...	...
Owners and contractors interviewed	1,376	...	...	...	...
Knackers' yards	84	34	33	...	...
Slaughter-houses	417	3	5	...	...
Milkshops, etc.	2,391	108	87	...	...
Cowsheds	188	15	8	...	...
Offensive trades	133	30	28	...	...
Workshops—					
Bakehouses	596	101	105	...	...
Bootmakers	121	9	5	...	...
Dressmakers and milliners...	101	7	6	...	...
Laundries	78	9	6	...	...
Tailors	183	12	12	...	...
Miscellaneous	870	80	66	...	...
Factories—					
Bakehouses	294	43	38	...	...
Bootmakers	50	4	...	...	...
Laundries	26	2	2	...	...
Tailors	25	7	7	...	...
Dressmakers and Milliners	10	...	...	...	...
Miscellaneous	872	70	74	...	...
Workplaces	401	31	34	...	...
Tailors' outworkers	17	1	1	...	...
Seamen's lodging houses (day)	959	117	92	...	...
,, ,, ,, (night)	67	...	...	...	...
Common lodging houses (day)	159	17	16	...	...
,, ,, ,, (night)	16	...	...	...	...
Houses-let-in-lodgings	197	51	35	...	...
Tents, vans, sheds and similar structures ...	130	29	25	...	...
Amusement places	182	16	19	...	...
Public houses	217	27	23	...	...
Schools	60	1	3	...	...
Swimming baths	172	2	...	...	...
Water supplies	6	1	...	...	...
Water courses	144	7	7	...	...
Refuse tips	164	12	10	...	...
Accumulations	295	45	49	...	...
Sewers	100	31	35	...	...
Drains	1,416	72	67	...	...
Public urinals	301	7	5	...	...
Cesspools	119	13	4	...	...
Back lanes	407	5	8	...	...
Rat infestation	880	34	18	...	...
Premises where swine or other animals are kept	228	41	23	...	...
Marine store hawkers	48	7	4	...	...
Smoke and grit observations	169	16	12	...	...
Visits not classified	4,693	10	10	...	...

Nuisances Abated, Repairs Executed, etc.

Houses :—	
Walls repaired	118
Outside plastering repaired	179
Inside plastering repaired	357
Damp-proof courses inserted	3
Floors renewed or repaired	279
Floors ventilated	33
Roofs renewed or repaired	625
Shutes, downpipes or gutters renewed or repaired	475
Chimneys repaired	147
Ceilings repaired	206
Doors and frames repaired	128
Lighting and ventilation of rooms improved ...	15
Window sashes or frames renewed or repaired ...	257
Window cords renewed	304
Staircases repaired	42
Grates or ovens repaired or renewed	157
Boilers provided or repaired	83
Food stores provided or improved	2
Washhouses provided or improved	25
Outbuildings repaired	4
Walls or ceilings cleansed and redecorated ...	191
Bedding cleansed or destroyed	56
Rooms treated for vermin	861
Overcrowding abated	8
Yard paving relaid or repaired...	259
Nuisances from animals abated	18
Accumulations removed	62
Ash-bins provided	21
Water supply provided	9
Water taps or pipes repaired	31
Water samples taken for analysis	25
Miscellaneous repairs and nuisances abated ...	116
Drainage :—	
Drains tested (smoke)	333
,, ,, (chemical)	1,228
New drains constructed	25
Drains reconstructed	30
Drains repaired	290
Drains under houses abolished	5
Drains cleansed	371
Inspection or intercepting chambers provided or repaired	49
Intercepting traps fixed	10
Soilpipes or ventilating shafts fixed or repaired ...	31
Rain-water pipes disconnected...	3
Gullies fixed	48
Troughs provided	14
Troughs trapped or waste pipes repaired ...	64
Bath waste pipes trapped or repaired	6
Lavatory basins trapped or waste pipes repaired	4
Additional w.c's provided	31
W.c's reconstructed	33
Lighting and ventilation improved	4
New pans and traps fixed	245
W.c. pans cleansed	68

NUISANCES ABATED, REPAIRS EXECUTED, ETC.—(contd).

Flushing apparatus provided	59
Flushing apparatus repaired	103
Miscellaneous repairs	100
Cesspools :—	
Abolished and house connected to sewer ...	18
Other repairs	2
Seamen's Lodging Houses :—	
Limewashing or cleansing carried out	98
Bedding renewed	30
Verminous rooms treated	11
Bedsteads cleansed or repaired	102
Overcrowding abated	2
Accumulations removed	3
W.c's repaired	2
Other repairs	11
Common Lodging Houses :—	
Limewashing or cleansing carried out	23
Bedding renewed	1
Verminous rooms treated	30
Bedsteads cleansed or repaired	890
W.c's repaired	1
Accumulations removed	2
Other repairs	8
Urinals :—	
Additional urinals provided	3
Urinals reconstructed...	1
Lighting and ventilation improved	1
Walls repaired or made impervious	3
Flushing apparatus fixed or repaired	9
Floors repaired	7
Other repairs	8
Earth or Pail Closets :—	
Provided	2
Abolished	13
Cleansed or repaired	4
Tents, Vans or Sheds :—	
Removed	80
Sanitary improvements effected	1
Amusement Places :—	
W.c's repaired	2
Cleanliness improved	9
Ventilation improved	2
Other repairs	4
Dairies, Cowsheds and Milkshops :—	
New dairies constructed	10
New cowsheds constructed	1
Existing dairies improved	14
Existing cowsheds improved	3
Dairymen discontinued	30
Drainage improved	7
Paving repaired	13
Lighting or ventilation improved	8

NUISANCES ABATED, REPAIRS EXECUTED, ETC.—(contd).

Limewashing or cleansing carried out	92
Water supply provided	3
Sterilisers fixed	18
Accumulations of manure removed	20
Other repairs	8
Ice Cream Premises :—	
Structural improvements	3
Limewashing or cleansing carried out	58
Accumulations removed	2
Other repairs	7
Food Shops, Kitchens, etc. :—	
Communicating sleeping places abolished ...	4
Communicating w.c's abolished	1
Accumulations removed	11
Cleanliness improved	57
Storage arrangements improved	7
Lighting or ventilation improved	2
Ash-bins provided	15
Other sources of contamination removed ...	17
Washing-up arrangements improved	1
Food Vehicles :—	
Warnings regarding general cleanliness of vehicle, person or covering	11
Fried Fish Shops :—	
New ranges fitted	4
Ashbins provided	4
Cleansing carried out	43
Storage accommodation provided or improved ...	5
Drainage improved	5
Lighting and ventilation improved	1
Accumulations removed	6
Other repairs	30
Houses-Let-in-Lodgings :—	
Limewashing or cleansing carried out	30
Other repairs	15
Offensive Trades :—	
Accumulations removed	26
Cleanliness improved	17
Floors or walls repaired	3
Drainage improved	1
Other repairs	1
Knackers' Yards :—	
Accumulations removed	23
Cleanliness improved	19
Floors or walls repaired	1
Drainage improved	30
Other repairs	2

NUISANCES ABATED, REPAIRS EXECUTED, ETC.—(contd.)

Stables :—	
Manure receptacles provided or repaired ...	6
Accumulations of manure removed	25
Paving repaired or renewed	1
Limewashing carried out	12
Back Lanes :—	
Accumulations removed	13
Surfaces repaired	3
Miscellaneous repairs or nuisances abated	8

Rat Destruction.—The following statement shows the numbers of purchases of rat poison from the Department and of baits laid and eaten in public sewers and elsewhere:—

Purchases of rat poisons from Public Health Department ...	81
Amount of poisons sold	185 tins and 11lb.
Number of baits laid in public sewers	17,028
Number of baits eaten	2,728
Number of baits laid elsewhere	8,289
Number of baits eaten	3,141
Total number of baits laid	25,317
Total number of baits eaten	5,869

At the request of Mr. C. Matheson, Keeper of Zoology, National Museum of Wales, a regular supply of live rats from premises in the city for identification and for examination of their parasitic fleas, for comparison with those submitted from ships and docks, was maintained throughout the year, 1,060 live rats being submitted.

Conservancy System Closets.—During 1929 seven privies were converted to the water-carriage system and six were demolished. The numbers remaining on the conservancy system at the end of the year were as follows :—

Earth closets	6
Privies	130
Total	136

Mosquito Control.—All likely breeding places for mosquitoes were kept under observation during the summer months, and any signs of mosquito activity were immediately dealt with. Allotment holders were requested to empty their water butts or to treat the water stored, and stagnant pools and ditches on the Splott lands were regularly treated with disinfectant or paraffin by the Public Works Department and the Great Western Railway Company at the request of this Department. The measures of control were again particularly effective at Splott.

Ventilation of Cinemas.—During the year the series of observations in connection with the ventilation of cinemas was continued. In three instances the conditions were found to be unsatisfactory. The proprietors of these cinemas have been asked to make alterations in the ventilating systems, and further observations will be taken to ascertain to what extent they have been effective.

Open-Air Swimming Baths.—The efforts of the Department in collaboration with the Parks Department to maintain the water of the swimming baths in a condition satisfactory for bathing have been continued.

Roath Park Lake : Skin Eruption on Bathers.—The attention of this Department was called to the occurrence of an urticarial eruption affecting bathers in Roath Park

Lake in the summer of 1928. During the bathing season of 1929 complaints were renewed and the rash was so troublesome that in the latter half of the summer bathing practically came to an end. The following is a description by Dr. McSweeney of the eruption as he saw it in various sufferers :—

"The eruption occurred only in the persons who had been bathing in Roath Park Lake. In all cases the rash took the form of a papular dermatitis of a blotchy character rather like the early stages of chickenpox. In many of the papules a central point resembling a puncture could be discerned. The rash, which appeared within a few hours of bathing in the lake, was attended by intense irritation, the lesions in some cases bleeding rather freely when scratched. In one very severe case seen the whole body was covered with papules—the forehead, centre of the face and chin alone escaping. This woman was a constant bather in the lake. Her condition suggested that the cause of the eruption was present in the water rather than on it, or about it, as the only portion of her skin unaffected was that which would not be in contact with the water. All cases seen agreed that the liability to attack was greater when they frequented the semi-stagnant water at the lake margin, although those who stayed in the open lake did not escape."

Throughout the years 1928 and 1929 investigations have been carried on with the object of ascertaining the cause. Numerous samples of water, weeds and animal life from the lake have been submitted to the National Museum of Wales for examination, and the following is a copy of a letter from Mr. Matheson, Keeper of Zoology, showing the position of his investigation at the present time :—

"With reference to the investigations on the outbreak of dermatitis among bathers at the Roath Park Lake, I would submit the following notes:

"In pursuance of the line of investigation agreed upon, specimens of the water snail *Lymnæa stagnalis* from the lake have been examined from time to time, and have been found to be infected with large numbers of the cercaria stages in the life-history of parasitic worms. Two types of cercariæ were found in the snails. I sent one of the microscope slides of these cercariæ to an expert on helminthology at the British Museum, and subsequently sent consignments of live snails from the lake. From his report, and from my own observations, it would appear that one of these species of cercariæ is morphologically closely related to, if not identical with, *Cercaria elvæ*, a form which has been shown to be responsible, in part at least, for outbreaks of an apparently similar form of dermatitis in the United States. I have been unable to produce the 'rashes' experimentally, and I think that a similar difficulty may have occurred with the specimens I sent to London, but in a recent note my correspondent informs me that one experimenter has succeeded in producing a 'rash' on his skin with this cercaria. Apart from the question of immunity from attack in certain individuals—a question which cropped up in the American investigations—there may be some factor as yet undetermined in the conditions at the bathing pool which facilitates the mischief.

"The physical conditions also at the Roath Park Lake seem to be similar in many respects to those of many of the localities investigated in the United States in this connection.

"On the whole, therefore, bearing in mind the above facts, and the fact that my previous examinations of the larger fauna of the lake and the chemical and bacteriological examination of the water revealed nothing which could cause the trouble, there appears to be a very strong probability that these parasites of the water-snails are at least partly responsible for the outbreak. I am of opinion that the only practicable method of dealing with this problem is that which we have recently discussed, namely, the destruction of the snails by the use of some chemical reagent. It has still to be decided what substance is the most suitable and at the same time the least expensive for this purpose."

It will be seen that the cause has been traced with practical certainty to what may be loosely described as the larval stage of a parasitic worm, the stage with which we are concerned being passed in association with a fresh-water snail, large quantities of which have been recovered from the lake. This snail, *Lymnæa stagnalis*, is under-

stood to be a comparatively recent addition to the fauna of this neighbourhood, Mr. Matheson stating that it was first discovered in the neighbourhood of Cardiff in 1915 and that it rapidly spread thereafter. It is an inhabitant of stagnant waters and the trouble at Roath Park Lake would appear to be remediable only through its eradication. A full account of the findings appeared in the Transactions of the Royal Society of Tropical Medicine and Hygiene for January, 1930.

The Council will appreciate that they are under a debt of gratitude to the National Museum of Wales, and especially to Mr. Matheson and those who have collaborated with him, for the time and effort which they have devoted to solving this very difficult problem. The character of the work will be understood when it is appreciated that no such occurrence has hitherto been recorded in this country. In the previous instance mentioned by Mr. Matheson, an outbreak of a similar nature occurring in the United States, the discovery of the cause took several years and, in the end, was partly accidental. In the light of these facts the period of one year over which this investigation has taken place must be regarded as anything but long.

The recognised method of destroying a similar snail, which carries the cercaria of the liver fluke infesting cattle, sheep and other herbivorous animals, is by the use of dilute solutions of copper sulphate. The lake was accordingly treated in March, 1930, with this chemical in a concentration of just over 1 in 500,000 parts of lake water. Early in July, 1930, there was a recurrence of the eruption after nearly three months of the bathing season, and numerous cercariæ were again found in snails recovered from pools above the lake. The treatment has therefore had to be repeated. The efficacy of the method is still undetermined.

Smoke Abatement.—The substitution of gas and electricity for raw coal is one of the means by which the smoke nuisance is being abated. This applies perhaps to dwelling-houses more than to factories, and as the former are now generally held to be responsible for a large part of atmospheric pollution, it is interesting to compare the extent to which the use of these sources of power has increased since 1910. The Secretary of the Cardiff Gas Light and Coke Company and the City Electrical Engineer have kindly supplied the tables reproduced below, which clearly show the expansion of the use of their respective products, both for domestic and industrial purposes.

GAS.

	1910	1920	1925	1929
Gas cookers installed	23,991	36,019	44,587	53,353
Gas fires, radiators, etc., installed ...	...	...	25,169	35,780
Gas " coppers " installed	...	...	5,611	8,395
Gas water heaters installed	...	...	1,103	1,483
Amount of gas sold for power and manufacturing purposes (c. ft.) ...	...	...	...	40,428,600
Total amount of gas sold (c. ft.) ...	1,141,601,000	1,840,833,000	1,857,865,000	1,880,825,000
Amount of coke sold (tons)	35,301	43,139	44,643	46,574

NOTE.—Where no entries appear in the above table the information is not available.

Electricity.

	Year ended 31st March			
	1910	1920	1925	1930
Houses wired for "lighting" and "lighting and heating"	421	1,562	5,128	21,624
Houses wired for cooking	...	...	162	920
Units sold for power and industrial purposes*	890,795	3,698,650	9,383,349	17,789,466
Total units sold for all purposes ...	8,684,914	12,897,597	25,671,031	43,638,962
Motors connected*	502	1,246	2,167	3,233
Horse-power of motors connected* ...	3,329	8,906	19,068	26,501
Electric fires, etc., connected	191	2,341	5,548	9,203

* Exclusive of traction.

Note.—About 6 million units per annum are now sold for heating and cooking.

Factories, Workshops and Workplaces.—Details of the sanitary inspection of factories, workshops and workplaces under the Factory and Workshop Act, 1901, are given in the following tables :—

1.—Inspection of Factories, Workshops and Workplaces.

Premises.	Number of		
	Inspections	Written Notices	Prosecutions
Factories (including Factory Laundries)	1,277	126	...
Workshops (including Workshop Laundries)	1,949	218	...
Workplaces (other than Outworkers' premises included in Part 3 of this Report)	401	31	...
Totals	3,627	375	...

2.—Defects Found in Factories, Workshops and Workplaces.

Particulars	Number of Defects	
	Found	Remedied
Nuisances under the Public Health Acts :—		
Want of Cleanliness	309	289
Want of Ventilation	6	5
Overcrowding	...	...
Other Nuisances	64	55
Sanitary accommodation — insufficient	13	11
Sanitary accommodation — unsuitable or defective...	82	75
Sanitary accommodation — not separate for sexes	2	2
Breach of special sanitary requirements for bakehouses (Sec. 97 to 100)	...	...
Totals	476	437

3.—Home Work.

Nature of Work	Outworkers' Lists, Section 107.							Outwork in Unwholesome Premises, Section 108		Outwork in Infected Premises, Sections 109, 110	
	Lists received from Employers.						Notices served on Occupiers as to keeping or sending lists				
	Sending twice in the year.			Sending once in the year							
		Outworkers			Outworkers						
	Lists	Contractors	Workmen	Lists	Contractors	Workmen		Instances	Notices served	Instances	Orders made (S. 110)
Wearing Apparel—											
(1) Making, etc. ...	31	...	112	...	...	...	20	1	1	...	...
(2) Cleaning & washing	...	...	...	...	...	...	...	...	...	...	...

4.—Registered Workshops.

Workshops on the Register (S. 131) at the end of the Year	Number
Bakers	173
Bootmakers	188
Dressmakers and Milliners	90
Laundries	43
Tailors	179
Miscellaneous...	379
Total Number of Workshops on Register	1,052

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)	...
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	32
Reports (of action taken) sent to H.M. Inspector	34
Other (Notices of Occupation of Workshops received from H.M. Inspector)	42
Underground Bakehouses in use at the end of the year	...

Shops.—The following is a summary of the work done under the Shops Acts and in connection with the sanitary inspection of shops during 1929 :—

Closing Orders in operation	15
Observations of shops under Closing Orders	1,384
Observations of shops as to weekly half-holiday ...	4,176
Inspections of shops	1,913
Infringements of Shops Acts	384
Notices requiring sanitary defects to be remedied :—	
Served	73
Complied with	82

Legal Proceedings.—The following is a summary of legal proceedings taken during the year in connection with general sanitary administration :—

Acts, etc., under which Proceedings were taken	Number	Fined	Cautioned	To pay costs only	Dismissed	With-drawn	Amount of Fines and Costs
							£ s. d.
Shops Act, 1912	92	64	22	3	...	3	13 19 6
Public Health Act, 1875 (Sec. 36 and Sec. 96) ...	2	...	...	...	...	2	– – –
Public Health Act, 1925 (Sec. 73)	2	2	...	...	...	...	2 0 0
Merchant Shipping Act, 1894 (Sec. 214, Sub-Sec. 5) ...	2	2	...	...	...	...	12 0 0
Totals	98	68	22	3	...	5	£27 19 6

Disinfection.—Disinfection was carried out at 1,723 houses during the year, and 6,698 articles of bedding, clothing, etc., were removed to and disinfected at the Disinfection Station ; 56 infected articles were destroyed by arrangement with or at the request of the owners.

Cleansing Station.—The total number of baths for scabies, pediculosis, etc., undertaken at the Cleansing Station was 282.

Public Mortuary.—Forty-eight bodies (39 males, 9 females) were admitted to the Public Mortuary and 16 post-mortem examinations were performed.

APPENDIX I.

STATISTICAL TABLES OF BIRTHS, DEATHS, COMMUNICABLE DISEASES, Etc.

Table I.

Births and Still-births Registered in and Belonging to Cardiff, 1929.

Municipal Wards	Legitimate				Illegitimate				Totals	
	Live		Dead		Live		Dead			
	M.	F.	M.	F.	M.	F.	M.	F.	Live	Dead
Central	128	127	4	1	8	4	1	...	267	6
South	129	126	13	3	3	14	...	1	272	17
Cathays	127	105	7	6	...	4	...	...	236	13
Adamsdown	149	144	7	5	6	12	2	1	311	15
Riverside	86	102	3	4	8	7	2	...	203	9
Canton	125	132	7	9	9	8	...	...	274	16
Grangetown	139	131	5	12	5	6	...	...	281	17
Roath	118	118	6	8	4	1	...	...	241	14
Plasnewydd	105	90	5	6	3	3	...	...	201	11
Splott	204	234	15	6	3	5	...	...	446	21
Penylan	75	66	3	3	5	3	...	1	149	7
Llandaff	300	294	14	12	7	12	1	2	613	29
Gabalfa	183	192	13	9	7	4	1	...	386	23
	1,868	1,861	102	84	68	83	7	5	3,880	198
Totals	3,729		186		151		12		...	...

Table II.

Summary of Registered Births (Live) Belonging to Cardiff.*

	Legitimate		Illegitimate		Totals
	Male	Female	Male	Female	
Registered in Cardiff	1,868	1,861	68	83	3,880
Transferred to Cardiff	21	16	9	6	52
Totals	1,889	1,877	77	89	3,932

* Compiled from detailed weekly returns supplied by the local Registrars of Births and Deaths, duly corrected for inward and outward transfers. The figures differ slightly from those supplied by the Registrar-General, viz., Males, 1,969 ; Females, 1,958 ; Total, 3,927.

Table III.

Causes of Death at Various Ages, 1929.*

Causes of Death	All Ages			Age Periods								
	M.	F.	Totals	Under 1 yr.	1–2 yrs.	2–5 yrs.	5-15 yrs.	15–25 yrs.	25–45 yrs.	45–65 yrs.	65–75 yrs.	75 yrs. and upwards
Enteric Fever	1	3	4	...	...	1	...	1	1	1	...	...
Smallpox	...	...	...	...	...	...	...	...	...	...	...	...
Measles	57	56	113	24	46	38	5	...	...	...	...	...
Scarlet Fever	...	2	2	...	...	...	1	...	1	...	...	...
Whooping Cough	10	14	24	9	9	1	4	...	...	...	1	...
Diphtheria	18	12	30	1	1	10	18	...	...	...	...	...
Influenza	40	49	89	1	...	...	3	2	14	31	20	18
Encephalitis Lethargica	1	1	2	...	...	...	...	...	1	...	1	...
Meningococcal Meningitis	...	1	1	...	...	...	...	...	...	...	...	1
Tuberculosis of Respiratory System	132	123	255	...	1	...	7	66	124	52	5	...
Other Tuberculous Diseases	22	23	45	5	4	5	10	12	5	3	...	1
Cancer, Malignant Disease	137	147	284	...	...	1	1	1	21	129	86	45
Rheumatic Fever	3	5	8	...	...	...	4	1	1	2	...	...
Diabetes	18	12	30	...	...	1	3	1	4	9	9	3
Cerebral Hæmorrhage, etc.	41	57	98	...	...	...	...	...	2	31	37	28
Heart Disease	225	237	462	...	...	...	6	9	43	141	142	121
Arterio-sclerosis	51	47	98	...	...	...	...	...	...	28	36	34
Bronchitis	99	78	177	16	4	...	1	...	3	39	54	60
Pneumonia (all forms)	116	91	207	39	33	19	10	5	26	37	23	15
Other Respiratory Diseases	24	17	41	2	...	1	2	...	10	16	4	6
Ulcer of Stomach or Duodenum	26	5	31	...	...	...	...	...	10	19	2	...
Diarrhœa, etc.	37	25	62	39	5	4	1	...	2	6	3	2
Appendicitis and Typhlitis	7	5	12	...	...	...	1	1	4	6	...	...
Cirrhosis of Liver	8	7	15	...	...	...	...	...	1	8	5	1
Acute and Chronic Nephritis	50	56	106	...	...	1	2	1	10	51	25	16
Puerperal Sepsis	...	3	3	...	...	...	...	...	3	...	...	...
Other Accidents & Diseases of Pregnancy and Parturition	...	11	11	...	...	...	...	2	9	...	...	...
Congenital Debility and Malformation, Premature Birth	67	66	133	129	...	...	1	1	2	...	...	...
Suicide	15	7	22	...	...	...	...	2	4	11	4	1
Other Deaths from Violence	72	26	98	6	4	8	15	6	23	17	8	11
Other Defined Diseases	239	197	436	59	4	9	16	10	44	111	81	102
Causes ill-defined or unknown	...	...	...	...	...	...	...	...	...	...	...	...
Totals	1,516	1,383	2,899	330	111	99	111	121	368	748	546	465
Included above :— Tuberculosis of Nervous System	6	11	17	3	1	4	6	3	...	...	...	...
Acute Poliomyelitis	1	1	2	...	1	...	...	1	...	...	...	...

* Compiled from figures supplied by the Registrar-General.

Table IV.

Deaths from Various Causes under One Year of Age, 1929.*

Causes of Death	Under 1 week	1—2 weeks	2—3 weeks	3—4 weeks	Total under 4 weeks	4 weeks —3 months	3—6 months	6—9 months	9—12 months	Totals
Measles	...	...	...	...	...	...	2	6	16	24
Whooping Cough	...	....	...	...	...	...	2	2	5	9
Diphtheria	...	...	...	...	...	....	...	1	...	1
Influenza	...	...	...	...	...	1	1	...	...	2
Tuberculosis of Nervous System	...	...	...	...	...	...	...	1	1	2
Tuberculosis of Intestines and Peritoneum	...	...	...	...	...	1	...	...	...	1
Other Tuberculous Diseases ...	...	...	...	...	...	...	...	1	...	1
Syphilis	...	...	...	...	...	2	1	...	...	3
Meningitis	...	...	...	...	...	...	...	2	1	3
Convulsions	6	3	...	1	10	1	4	...	1	16
Bronchitis	...	...	...	...	...	5	4	1	5	15
Pneumonia	2	...	1	...	3	5	7	14	9	38
Other Respiratory Diseases ...	...	...	...	...	...	...	2	1	2	5
Inflammation of the Stomach ...	...	...	...	...	...	...	...	...	...	...
Diarrhœa and Enteritis ...	...	...	1	1	2	7	24	8	4	45
Hernia, Intestinal Obstruction	...	...	1	...	1	...	3	...	...	4
Congenital Malformations ...	13	4	1	1	19	1	...	...	...	20
Congenital Debility & Sclerema	7	...	...	...	7	4	3	...	...	14
Icterus	2	1	...	...	3	...	...	...	...	3
Premature Birth	62	5	5	1	73	5	3	...	...	81
Injury at Birth	6	...	...	...	6	...	...	...	...	6
Disease of Umbilicus	2	1	...	...	3	...	...	...	...	3
Atelectasis	3	...	...	...	3	...	...	...	...	3
Suffocation in Bed, and not stated	1	1	1	...	3	3	...	...	...	6
Other Causes	7	...	3	2	12	6	2	2	3	25
Totals	111	15	13	6	145	41	58	39	47	330
Percentage of Total Deaths under one year	33·6	4·5	3·9	1·8	43·9	12·4	17·6	11·8	14·2	100

Deaths of :—

Legitimate Infants 309

Illegitimate Infants ... 21

* Compiled from weekly returns supplied by the local Registrars of Births and Deaths, duly corrected for inward and outward transfers.

Table V.

Analysis of Area, Population, Births, Deaths, Deaths under One Year and Deaths from certain Causes, together with Birth- and Death-rates per 1,000 in the whole City and in Municipal Wards, 1929.*

Municipal Wards, etc.	Area: Acres	Estimated Population	Live Births		Deaths: All Causes		Deaths under One Year		Deaths from Zymotic Diseases, Tuberculosis, Influenza and Respiratory Diseases.															
									Enteric Fever		Measles		Scarlet Fever		Whooping Cough		Diphtheria		Diarrhœa, etc. (under 2 years)		Tuberculosis: Respiratory		Tuberculosis: Other Forms		Influenza		Respiratory Diseases	
			Number	Birth-rate	Number	Death-rate	Number	Number per 1,000 births	Number	Death-rate	Number	Death-rate	Number	Death-rate	Number	Death-rate	Number	Death-rate	Number	Number per 1,000 births	Number	Death-rate	Number	Death-rate	Number	Death-rate	Number	Death-rate
Central ...			267	20·8	218		26	97	...		15		1		1		2		4	15·0	17		4		4		38	
Lodging Houses, etc. ...	535	12,810	...	...	26	19·0	...	...	...	...	...	1·17	...	0·08	...	0·08	...	0·16	...	...	2	1·48	...	0·31	1	0·39	5	3·36
South ...			272	20·3	189		22	81	...		19		...		1		...		1	3·7	19		1		3		33	
Lodging Houses, etc. ...	1,073	13,370	...	...	4	14·4	...	...	...	...	...	1·42	...	...	...	0·07	...	...	...	...	...	1·42	...	0·07	...	0·22	1	2·54
Cathays	338	17,890	236	13·2	215	12·0	19	80	...	...	...	...	...	...	...	...	5	0·28	...	...	17	0·95	2	0·11	10	0·56	32	1·79
Adamsdown			311	23·0	250		40	128	2		16		...		3		2		12	38·6	27		6		8		54	
Lodging Houses, etc. ...	1,320	13,490	...	...	30	20·7	...	...	...	0·15	...	1·19	...	...	...	0·22	...	0·15	...	...	11	2·82	2	0·59	...	0·59	2	4·15
Riverside	320	15,780	203	12·9	235	14·9	13	64	1	0·06	9	0·57	...	...	...	...	1	0·06	1	4·9	26	1·65	2	0·13	8	0·51	33	2·09
Canton	247	18,080	274	15·1	216	11·9	17	62	...	...	3	0·16	...	...	3	0·16	5	0·28	3	10·9	15	0·83	1	0·05	5	0·28	36	1·99
Grangetown ...	949	15,080	281	18·6	195	12·9	26	92	...	...	15	0·99	...	...	...	...	...	...	5	17·8	15	0·99	5	0·33	7	0·46	22	1·46
Roath	754	16,860	241	14·3	206	12·2	24	99	...	...	5	0·30	...	...	...	...	...	...	6	24·9	13	0·77	2	0·12	8	0·47	27	1·60
Plasnewydd ...	233	15,820	201	12·7	219	13·8	18	89	...	...	...	...	...	...	1	0·06	...	...	...	...	15	0·95	2	0·13	5	0·32	36	2·27
Splott	1,912	20,630	446	21·6	262	12·7	34	76	...	...	12	0·58	...	...	4	0·19	3	0·14	4	9·0	27	1·31	5	0·24	9	0·43	50	2·42
Penylan	1,765	14,930	149	10·0	167	11·2	16	107	...	...	1	0·07	...	...	...	...	1	0·07	1	6·8	8	0·53	1	0·07	9	0·60	24	1·61
Llandaff	2,719	25,030	613	24·5	247	9·8	54	88	...	...	15	0·60	...	...	7	0·28	7	0·28	11	17·9	23	0·92	4	0·16	7	0·28	34	1·35
Gabalfa	1,463	18,430	386	20·9	182	9·9	21	54	...	...	3	0·16	1	0·05	3	0·16	2	0·11	2	5·2	18	0·98	1	0·25	4	0·22	32	1·73
Institutions, etc. ...	...	6,000	52	...	42	...	...	...	1	...	...	...	...	...	...	...	...	...	...	...	3	...	3	...	1	...	6	...
Cardiff	13,628	224,200	3,932	17·5	2,903	12·9	330	84	4	0·02	113	0·50	2	0·01	23	0·10	28	0·12	50	12·7	256	1·14	41	0·18	89	0·40	465	2·07

* The statistics of births and deaths are compiled from weekly returns supplied by the local Registrars of Births and Deaths, duly corrected for inward and outward transfers.

Table VI.

Notified Cases of Acute Communicable Diseases by Age and Sex, 1929.

Diseases	Under 1 year		1—2 years		2—3 years		3—4 years		4—5 years		5—10 years		10—15 years		15—20 years		20—25 years		25—35 years		35—45 years		45—65 years		65 years and over		All Ages		
	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	Totals
Smallpox	1	...	...	...	...	...	...	...	...	...	...	1	...	2	...	1	...	...	...	2	...	...	...	1	...	...	1	7	8
Scarlet Fever	4	1	4	3	11	8	19	18	23	40	132	179	48	68	11	22	8	16	6	11	1	3	2	2	...	...	269	371	640
Diphtheria	5	...	10	9	12	13	33	22	31	24	156	165	55	63	18	23	9	27	6	28	5	13	2	4	1	1	343	392	735
Enteric Fever	...	...	...	...	...	...	...	1	...	...	2	2	...	2	1	1	1	2	1	2	...	1	1	1	...	...	6	12	18
Pneumonia	7	5	13	9	3	12	5	7	2	2	24	15	7	4	15	6	15	3	19	10	23	10	34	18	10	17	177	118	295
Puerperal Fever ...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	3	...	4	...	19	...	8	...	...	...	...	...	34	34
Puerperal Pyrexia ...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	2	...	16	...	44	...	15	...	5	...	...	...	82	82
Cerebro-Spinal Fever ...	...	...	...	...	...	...	...	...	1	...	...	...	...	...	...	...	1	...	1	...	...	...	...	...	1	...	4	...	4
Acute Poliomyelitis ...	...	1	...	1	...	...	...	...	...	...	1	...	...	...	2	...	2	...	...	...	...	...	...	...	...	...	5	2	7
Acute Polioencephalitis	...	...	...	...	1	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	1	...	1
Encephalitis Lethargica	...	...	...	...	1	...	...	...	...	1	...	...	...	...	...	1	...	...	...	...	1	...	...	1	...	1	2	4	6
Dysentery	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	1	...	...	...	...	...	...	...	1	...	1
Ophthalmia Neonatorum	35	25	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	35	25	60
Erysipelas	...	...	1	...	...	...	...	...	...	...	...	4	...	...	3	2	2	1	4	3	10	10	19	12	3	8	42	40	82
Malaria	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	1	...	2	...	2	...	...	...	...	...	5	...	5
Chickenpox	23	33	50	33	38	28	45	51	90	72	274	292	22	31	7	10	2	6	6	3	1	...	...	...	...	...	558	559	1,117

Table VII.

Notified Cases of Acute Communicable Diseases in Municipal Wards and Cases Removed to Hospital, 1929.

Municipal Wards, etc.	Smallpox	Scarlet Fever	Diphtheria	Enteric Fever	Pneumonia	Puerperal Fever	Puerperal Pyrexia	Cerebro-Spinal Fever	Acute Poliomyelitis	Acute Polioencephalitis	Encephalitis Lethargica	Dysentery	Ophthalmia Neonatorum	Erysipelas	Malaria	Chickenpox
Central	6	21	40	...	15	2	3	...	...	...	1	...	5	8	...	25
South	...	44	20	...	9	2	3	...	1	...	...	...	...	3	1	75
Cathays	1	41	77	...	31	...	4	...	...	...	...	...	7	8	...	41
Adamsdown ...	1	27	29	3	11	1	3	1	...	...	...	...	2	4	1	87
Riverside ...	...	42	40	2	16	1	4	...	1	...	...	...	6	5	...	45
Canton	...	64	58	2	17	2	4	1	...	...	...	...	5	5	1	73
Grangetown ...	...	51	27	2	9	4	10	1	...	1	...	...	1	7	...	73
Roath	...	30	32	...	16	3	...	...	...	...	2	...	3	6	...	98
Plasnewydd ...	...	39	34	...	25	3	1	...	...	...	2	...	4	3	...	37
Splott	...	32	74	5	32	3	7	...	...	...	...	...	6	9	1	122
Penylan	...	32	41	...	25	...	3	1	3	...	...	1	...	9	...	56
Llandaff	...	149	81	...	10	3	8	...	1	...	...	...	13	6	...	284
Gabalfa	...	48	152	2	27	3	6	...	...	...	1	...	1	5	...	52
Institutions ...	...	20	30	2	52	7	26	...	1	...	...	...	7	4	1	49
Totals ...	8	640	735	18	295	34	82	4	7	1	6	1	60	82	5	1,117
Cases removed to Hospital ...	7	512	708	17	16	8	5	3	2	...	3	...	...	14	...	21

APPENDIX II.

METEOROLOGICAL OBSERVATIONS TAKEN AT PENYLAN, CARDIFF, DURING 1929.

Table I.

Barometric Pressure and Relative Humidity.

Month	Attached Thermometer (Mean)	Mean Barometric Pressure*		Hygrometer*		
		Uncorrected	Reduced to Mean Sea Level and Temp. 32° F.	Dry Bulb (Mean)	Wet Bulb (Mean)	Mean Relative Humidity
	°F.	Inches	Inches	°F.	°F.	°F.
January	40	30·045	30·295	35·4	34·2	87
February	38	29·843	30·081	32·4	31·2	84
March	44	30·120	30·338	43·0	40·0	77
April	48	29·810	30·023	45·6	41·1	76
May	54	29·793	29·976	52·3	48·8	78
June	59	29·860	30·036	55·8	52·4	79
July	63	29·890	30·045	60·6	56·5	76
August	61	29·850	30·014	58·9	56·2	83
September	64	29·982	30·135	59·4	56·6	83
October	57	29·686	29·862	49·9	47·7	85
November	52	29·506	29·700	45·3	44·4	94
December	49	29·496	29·697	43·4	41·8	87
	52	29·823	30·017	48·5	45·9	82

* From observations at 9 a.m. and 9 p.m.

Table II.

Temperature.

Month	Absolute Maximum	Absolute Minimum	Mean of Maximum	Mean of Minimum	Mean Temperature	Difference from Average (40 years)
	°F.	°F.	°F.	°F.	°F.	°F.
January	49	24	39·6	32·1	35·8	— 4·4
February	49	12	38·0	28·4	33·2	— 7·3
March	70	23	53·3	35·5	44·4	+ 2·0
April	71	31	53·4	38·0	45·7	— 0·7
May	70	34	60·2	44·6	52·4	— 0·4
June	72	42	63·5	48·5	56·0	— 1·2
July	81	45	69·5	53·0	61·2	+ 0·4
August	74	47	65·2	52·9	59·3	— 0·9
September	82	45	69·5	53·0	61·2	+ 5·0
October	62	35	56·2	44·6	50·4	+ 0·1
November	56	29	51·1	40·3	45·7	+ 1·6
December	54	28	48·5	39·6	44·0	+ 3·1
	82	12	55·7	42·5	49·1	— 0·2

Table III.

Terrestrial Radiation, Underground Temperature, Solar Radiation and Sunshine.

Month.	Temperature				Bright Sunshine	
	Grass Minimum (Mean)	Underground (Mean)		Solar Maximum (Mean)	Total Duration	Difference from Average (21 years)
		1ft.	4ft.			
	°F.	°F.	°F.	°F.	Hours	Hours
January	28·5	36·2	42·5	59·2	47·2	— 4·1
February	28·0	37·4	41·4	70·6	73·7	...
March	30·8	39·9	41·1	94·4	208·7	+ 98·1
April	34·5	46·6	45·6	103·3	184·8	+ 11·2
May	41·1	53·3	49·2	114·9	236·2	+ 25·5
June	45·0	59·0	54·3	116·8	240·9	+ 21·3
July	48·5	62·2	57·3	123·4	241·9	+ 33·8
August	49·8	61·4	58·6	117·6	158·6	— 26·4
September	47·8	61·1	59·3	114·7	207·9	+ 62·2
October	40·6	52·7	55·8	95·5	109·9	+ 3·8
November	36·2	45·8	50·3	77·5	74·5	+ 7·1
December	36·1	43·9	47·7	71·1	68·8	+ 19·4
	38·9	49·9	50·2	96·6	1,853·1*	+ 251·9

* 41·3% of possible duration and a daily average of 5·08 hours

Table IV.

Rainfall.

Month.	Total	Difference from Average (40 years)	Greatest Fall in 24 hours.*		Number of Rain-days (0·01 inch or more)	Duration
			Amount	Day		
	Inches	Inches	Inches			Hours
January	1·86	— 2·14	0·71	28th	9	61·75
February	1·27	— 1·85	0·36	2nd	9	39·50
March	0·57	— 2·58	0·40	21st	4	14·00
April	0·41	— 2·21	0·20	27th	8	17·75
May	3·55	+ 1·06	1·02	4th	13	68·50
June	2·67	+ 0·03	1·13	12th	10	49·25
July	2·31	— 0·57	0·85	28th	9	32·50
August	3·77	— 0·47	2·23	3rd	14	53·50
September ...	0·59	— 2·52	0·37	30th	3	5·25
October	6·77	+ 1·88	2·32	5th	18	81·75
November ...	11·14	+ 7·54	1·76	18th	21	141·25
December ...	9·39	+ 4·81	1·12	7th	27	135·00
	44·30	+ 2·98	2·32	5th Oct.	145	700·0

* 24 hours ended 9 a.m. next day.

APPENDIX III.

ATMOSPHERIC POLLUTION.

Observations made in Cardiff during 1929.

Month	Rainfall (mm.)	Grammes per Square Dekametre (Metric Tons per Hundred Square Kilometres).								
		Insoluble Matter			Soluble Matter		Total Solids	Included in Soluble Matter		
		Tar	Carbonaceous other than Tar	Ash	Loss on Ignition	Ash		Sulphates (SO_3)	Chlorine (Cl)	Ammonia (NH_3)
January ..	42	13	204	253	114	218	802	89	23	1
February ...	36	9	214	393	66	181	863	77	17	1
March ...	14	5	130	219	86	172	612	77	14	1
April	13	5	88	176	53	106	428	41	16	2
May	87	7	107	168	107	152	541	60	26	0
June	64	4	83	109	98	148	442	61	23	1
July	55	7	108	146	77	133	471	48	38	0
August ...	92	4	80	120	82	162	448	62	45	1
September ...	12	5	102	120	49	88	364	35	13	4
October ...	152	7	102	105	130	310	654	86	90	8
November ...	242	11	174	186	152	455	978	146	114	3
December ...	195	7	154	174	176	1,071	1,582	182	470	1
Total ...	1,004	84	1,546	2,169	1,190	3,196	8,185	964	889	23
Mean ...	84	7	129	181	99	266	682	80	74	2

ULTRA-VIOLET RADIATION.

Observations made in Cardiff during 1929.

Month	Mean Daily Radiation Units*	
	Penylan	City Hall
January	0·93	0·84
February	0·91	0·86
March	2·10	2·00
April	2·35	2·32
May	4·55	4·55
June	5·05	5·08
July	4·57	4·79
August	2·51	2·45
September	2·17	2·20
October	0·90	1·00
November	0·62	0·58
December	0·48	0·45

*Acetone-methylene blue standard.

COMPARISON OF TOTAL RADIATION UNITS* RECORDED AT CARDIFF WITH THOSE OF CERTAIN OTHER PLACES DURING 1929.

Month	Cardiff		London		Hull		Torquay	Poole
	Penylan	City Hall	Kingsway	Hampstead	Central	Suburban		
January ...	29	26	10	15	4	5	30	36
February ...	25	24	14	20	4	5	33	39
March ...	65	62	49	68	22	29	117	108
April ...	70	70	53	76	28	38	187	138
May ...	141	141	96	131	158	158	351	245
June ...	151	152	69	133	175	180	418	252
July ...	142	148	118	169	144	141	391	280
August ...	79	76	60	155	76	80	223	226
September	66	65	54	111	50	50	204	209
October ..	28	31	25	40	19	19	84	81
November	18	18	12	21	9	9	57	48
December	15	15	9	15	9	6	43	40

* Acetone-methylene blue standard.

ATMOSPHERIC POLLUTION IN CARDIFF.

By Dr. W. PANES.

The problem of atmospheric pollution in Cardiff is not the serious one it is in some of the other towns and cities of Great Britain. The principal reason for this is that Cardiff is a commercial centre rather than an industrial one, and therefore not subjected to any great extent to pollution by factory smoke.

The smoke polluting the atmosphere of any town or city is derived from two main sources, namely, the domestic chimney and the factory chimney. Cardiff, being mainly a commercial town, and therefore possessing comparatively few factory chimneys, derives the major portion of its polluting smoke from domestic and office fires. By means of observations taken with an automatic recording filter it has been estimated that in some towns—London, for example—the proportion of factory smoke to domestic smoke is as 1 : 2·25. That is, something over two-thirds of the smoke is derived from the domestic chimney. This is probably the approximate position in Cardiff.

Smoke derived from the combustion of coal in a domestic grate differs markedly from that derived from the factory furnace. Domestic smoke contains a high percentage of tar (up to 30 per cent)., while factory smoke contains only about 1 per cent. The latter, however, contains a higher percentage of ash, owing to the much more complete combustion of coal in a furnace. This difference in composition accounts for the more damaging effect of domestic than factory smoke. The sticky nature of the tar causes it to adhere to the surface of buildings and along with it the carbonaceous matter and ash. These substances, together with sulphuric acid derived from the sulphur contained in raw coal, are responsible for the erosion of the stone of buildings. The damage caused annually in this way in some large industrial towns is considerable. In Pittsburg, U.S.A., in 1912, an attempt was made to estimate this damage to property, with the result that the cost per head per year amounted to 87/-. The amount of soot deposited in Pittsburg in 1912-13 was 1,031 tons per square mile. The deposit in Cardiff during the year 1929-30 was 218 tons per square mile. It may be assumed that the cost per head of the inhabitants varies directly as the amount of soot deposited. Then, in Cardiff in 1929-30, on this assumption, the cost per head amounted to 18/-. Therefore, the smoke pollution of Cardiff, with its population of approximately 230,000 people, caused damage amounting to about £207,000 during that period. This must, of course, be a very approximate figure, but it gives an idea of the seriousness of the smoke problem in large towns.

Comparison of Pollution for the Years 1926-1930 *as measured by the Deposit Gauge.*—In order to make a comparison of the amount of deposited impurity for the years 1926-1930 in Cardiff and to detect improvement or otherwise, a table has been compiled. From this table, which is appended (Table I), it will be seen that the total solids for the consecutive years were are follows :—

	Metric Tons per 100 Square Kilometres.
April, 1926—March, 1927	15,700
,, 1927— ,, 1928	13,911
,, 1928— ,, 1929	7,934
,, 1929— ,, 1930	8,542

From these records it would, at first sight, appear that the smoke problem of Cardiff has improved to a very great extent. Thus, the impurity deposited during the last two years (1928-29 and 1929-30) has fallen to approximately half that recorded for the previous two years (1926-27 and 1927-28). However, the difference between these records for total impurity is not a true indication of improvement in the smoke pollution, at least not to the extent of one half. When the 1926-27 to 1927-28 records were taken the deposit gauge was placed in Friary Gardens. This site is adjacent to Kingsway, one of the busiest motor traffic thoroughfares of the city, and the level of the gauge was below that of the road. The heavy traffic which passed within a few yards of the gauge would probably cause a large amount of road dust to be deposited in it. This actually appeared to be the case, and was borne out by the consistently high percentage of insoluble matter in the deposit. The amounts are given below :—

	Metric Tons per 100 Square Kilometres.	
	Total Solids.	Insoluble Deposit.
April, 1926—March, 1927 ...	15,700 ...	11,776
,, 1927— ,, 1928 ...	13,911 ...	9,406

Thus, in 1926-27 the insoluble deposit formed 75 per cent. of the total deposit, while in 1927-28 it was 67 per cent.

In January, 1928, owing to the fact that the position of the gauge was thought to be unsatisfactory and liable to contamination and interference, the gauge was transferred to the roof of the City Hall. Since then, there has been a marked change in the deposit, both in amount and character. The amount of total deposit and the percentage of insoluble matter have fallen. The records of total solids and insoluble matter for 1928-29 to 1929-30 will show this :—

	Metric Tons per 100 Square Kilometres.		
	Total Solids.	Insoluble Matter.	Percentage of Total Solids.
1928-29	7,934 ...	4,250 ...	53
1929-30	8,542 ...	3,538 ...	41

The City Hall roof, where the gauge is at present situated, is approximately a hundred yards from Friary Gardens, and it is improbable that the smoke pollution at these two spots would vary to the extent indicated by the above records. Therefore, the measurements taken at Friary Gardens must have exaggerated the extent of pollution, or the present site must be sheltered and the 1928-30 measurements under estimate it. Certain facts seem to indicate the former ; that is, the 1926-28 records exaggerated the true position. This statement is supported by the records of the soluble deposit for the four years :—

	Soluble Deposit (Metric Tons per 100 Square Kilometres).
1926-27	3,924
1927-28	4,505
1928-29	3,797
1929-30	5,024

From these figures there are seen to be only slight differences, at least when compared with the differences in the measurements of insoluble deposit. The soluble deposit for 1929-30 was actually greater than that of any of the previous years. It is reasonable, therefore, to assume that the records for 1928-30 are a truer indication of the extent of the pollution by smoke than the 1926-28 records.

It will be seen from Table I that the tar deposit for 1926-27 was heavy, namely, 344 metric tons per 100 square kilometres. This fell into Class " D," according to the standards adopted by the Department of Scientific and Industrial Research. Now, this is a very heavy deposit for Cardiff, which is obviously clean from the smoke pollution aspect, in spite of the fact that the major portion of the smoke is derived from the domestic chimney. Again, it will be seen that the deposit of tar has markedly decreased during 1929-30, being only 78 metric tons per 100 square kilometres. This fall, from 344 metric tons per 100 square kilometres in 1926-27 to 78 metric tons per 100 square kilometres in 1929-30, could not be accounted for by improvement in the extent of smoke pollution, but must be due to the changing of the position of the gauge. The roadway adjacent to Friary Gardens, the previous site of the gauge, is largely composed of tar, and it is possible that the dust from the roadway carried with it a certain amount of tarry material. There is no other explanation at present evident to account for this.

Classification of Deposit.—In classifying the different fractions of deposit in Table I, the standards adopted by the Department of Scientific and Industrial Research have been used. It will be observed that, according to these standards, Cardiff is, fortunately, comparatively free from the smoke nuisance. This is especially so, if it be taken that the 1928-30 records are a fair indication of the extent of smoke pollution, which is a reasonable assumption.

In 1929-30 the tar, carbonaceous matter other than tar, the loss on ignition of soluble matter and the total solids just failed to be classed as "A." The insoluble ash, sulphates and ammonia actually came into Class "A." The only fraction of the deposit which was particularly heavy was the chlorine, this falling into Class " C." During the previous three years it has been classed as " B." This increase in the chlorine fraction of the deposit is probably accounted for by the carrying of spray from the sea by the winter gales, which were particularly prevalent during November and December, 1929. This would account, to some extent, for the somewhat higher figure for soluble deposit for 1929-30 than for any of the previous three years. Also, another point having some bearing on the larger amount of soluble matter during this year was the heavy rainfall. As a matter of fact, if the monthly rainfall is compared with the monthly soluble deposit, it will be found that the latter varies directly with the former. The insoluble deposit is also influenced by rainfall, but not to the same extent as the soluble fraction.

Comparison with other Towns.—In order to compare the extent and nature of the smoke pollution of Cardiff with that of some other towns, Tables II and III have been complied. The mean monthly records are given for (1) rainfall, (2) insoluble deposit, (3) soluble deposit and (4) total solids. The percentages of soluble and insoluble deposit are also given. Table II shows the records for April, 1926—March, 1927, and Table III those for the year April, 1929—March, 1930. The places selected are those for which complete records are available for both periods. The favourable position occupied by Cardiff in smoke pollution statistics should be emphasised. A glance at Table I will suffice to show that for the periods 1928-1929 and 1929-30 in several individual items Cardiff is graded as Class "A." A closer inspection of the figures will reveal the fact that, whilst classed as " B " in other details, the various deposits are almost low enough to be scheduled "A." The rainfall is a factor which directly influences the soluble and insoluble deposits, but which nevertheless is not considered in the general classification into the Classes A, B. C and D. Even so, in spite of the comparatively heavy rainfall (see Tables II and III), Cardiff has a low total deposit, indicative of its high degree of freedom from smoke nuisance.

Observations Made in Cardiff during 1926-27 to 1929-30.

Year	Period	Rainfall (mm)	Metric Tons per Hundred Square Kilometres.								
			Insoluble Matter			Soluble Matter		Total Solids	Included in Soluble Matter		
			Tar	Carbonaceous other than Tar	Ash	Loss on Ignition	Ash		Sulphates (SO_3)	Chlorine (Cl)	Ammonia (NH_3)
1926-27	Monthly Mean	82	28 D	263 B	690 C	108 B	219 B	1,308 B	70 A	33 B	0·7 A
	Summer Total	346	156	1,579	3,771	557	947	7,010	246	121	5
	Winter Total	639	188	1,578	4,504	743	1,677	8,690	592	279	3
	Annual Total	985	344	3,157	8,275	1,300	2,624	15,700	838	400	8
1927-28	Monthly Mean	113	25 D	240 B	518 B	124 B	251 B	1,159 B	104 B	52 B	1·2 A
	Summer Total	595	169	1,575	3,832	530	1,065	7,171	390	178	2
	Winter Total	759	128	1,315	2,387	955	1,955	6,740	865	446	12
	Annual Total	1,354	297	2,890	6,219	1,485	3,020	13,911	1,255	624	14
1928-29	Monthly Mean	65	8 B	138 B	208 B	96 B	220 B	661 B	68 A	53 B	0·8 A
	Summer Total	302	38	661	1,033	482	785	2,886	265	149	4
	Winter Total	485	55	1,002	1,461	675	1,855	5,048	553	493	6
	Annual Total	787	93	1,663	2,494	1,157	2,640	7,934	818	642	10
1929-30	Monthly Mean	95	6 B	125 B	163 A	100 B	318 B	711 B	85 A	103 C	2 A
	Summer Total	324	32	568	839	466	809	2,694	307	161	8
	Winter Total	824	46	932	1,121	738	3,011	5,848	719	1,080	15
	Annual Total	1,148	78	1,500	1,960	1,204	3,820	8,542	1,026	1,241	23

Standards of Classification used in above Table.

Classification	Insoluble Matter			Soluble Matter		Total Solids	Sulphates	Chlorine	Ammonia
	Tar	Carbonaceous other than Tar	Ash	Loss on Ignition	Ash				
A.	Less than 5	Less than 100	Less than 200	Less than 75	Less than 150	Less than 500	Less than 100	Less than 30	Less than 5
B.	5–14	100–299	200–599	75–224	150–449	500–1,499	100–299	30–89	5–14
C.	15–24	300–499	600–999	225–374	450–749	1,500–2,499	300–499	90–149	15–24
D.	25 or more	500 or more	1,000 or more	375 or more	750 or more	2,500 or more	500 or more	150 or more	25 or more

Table II.

Observations during 1926-27.

Place	Mean Monthly Rainfall (mm)	Metric Tons per Hundred Square Kilometres.				
		Insoluble Matter		Soluble Matter		Total Solids
		Monthly Mean	Percentage of Total Solids	Monthly Mean	Percentage of Total Solids	Monthly Mean
CARDIFF	82	972	74	327	26	1,299
Newcastle-upon-Tyne(Town Moor)	75	319	39	489	61	808
Rotherham	49	1,007	77	294	23	1,301
Stoke-on-Trent	59	438	65	233	35	671
Wakefield	54	643	37	1,095	63	1,738

Table III.

Observations during 1929-30.

Place	Mean Monthly Rainfall (mm)	Metric Tons per Hundred Square Kilometres.				
		Insoluble Matter		Soluble Matter		Total Solids
		Monthly Mean	Percentage of Total Solids	Monthly Mean	Percentage of Total Solids	Monthly Mean
CARDIFF	96	295	41	417	59	712
Newcastle-upon-Tyne(Town Moor)	70	338	42	469	58	807
Rotherham	51	1,129	74	400	26	1,529
Stoke-on-Trent	71	441	63	262	37	703
Wakefield	55	191	48	211	52	402

APPENDIX IV.

WELFARE OF THE BLIND.

Registration as at 31st December, 1929.

Table I.

Age Period—Years.	Males.	Females.	Totals.
0— 5	2	—	2
5—16	11	3	14
16—21	5	2	7
21—30	13	24	37
30—40	21	14	35
40—50	33	27	60
50—60	43	30	73
60—70	57	30	87
70—	52	43	95
Totals	237	173	410

Table II.

Ages at which Blindness Occurred.

Age Period—Years.	Males.	Females.	Totals.
0— 1	50	31	81
1— 5	8	9	17
5—10	10	12	22
10—20	10	8	18
20—30	19	10	29
30—40	17	13	30
40—50	27	24	51
50—60	31	30	61
60—70	39	26	65
70—	26	10	36
Totals	237	173	410

Table III.

(*a*) Employment—Age Period 16 and upwards.

	Males.	Females.	Totals.
Employed	82	32	114
Trained but unemployed	1	1	2
Under training	13	2	15
No training but trainable	—	—	—
Unemployable	128	135	263
Totals	224	170	394

(*b*) Occupations of Employed.

Agents, Collectors, etc.	2
Basket and Cane Workers...	46
Boot Repairers	3
Dealers (Tea Agents, Shop-keepers, etc.)	7
Hawkers	—
Home Teachers	2
Knitters	8
Labourers	—
Musicians and Music Teachers	—
Mat Makers	11
Newsvendors	2
School Teachers	3
Tuners	8
Miscellaneous	22
Total	114

Table IV.

Physically and Mentally Defective.

	Males.	Females.	Totals.
(*a*) Mentally Defective*	12 ...	8 ...	20
(*b*) Physically Defective	7 ...	7 ...	14
(*c*) Deaf	12 ...	16 ...	28
Combinations of (*a*), (*b*) and (*c*) ...	2 ...	3 ...	5
Totals	33 ...	34 ...	67

Table V.

School Age Period (5–16) according to Mental or Physical Defects.

	Males.	Females.	Totals.
At School :—			
Normal	10 ...	2 ...	12
Physically Defective	— ...	— ...	—
Not at School :—			
Normal	1 ...	— ...	1
Mentally Defective	1 ...	— ...	1
Physically Defective	— ...	— ...	—
Totals	12 ...	2 ...	14

* Including persons suffering from epilepsy, fits and serious nervous disability.

APPENDIX V.

DIETARIES OF FAMILIES IN CARDIFF.

On 3rd April, 1928, I was authorised by the Joint Education and Health Sub-Committee to afford the facilities of the Health Department to Prof. E. P. Cathcart, of Glasgow, for carrying out an investigation into the dietaries of the families of manual workers in Cardiff. Miss Shanks, from his Department in Glasgow University, accordingly spent some time in this city during the summer of that year, and Prof. Cathcart has now forwarded a preliminary report, copy of which is attached hereto. In this investigation Prof. Cathcart had also the cordial co-operation of Prof. Graham Brown, Professor of Physiology in the Welsh National School of Medicine.

It should perhaps be explained that the use of the term "man-value," which appears at the beginning of the report, is universal in all calculations of this kind, and has been adopted in the preparation of the scales of incomes for various purposes which the Health and Education Committees use for deciding what payments are to be made for the various medical services afforded through this Department. Obviously, a family of three full-grown adult males is not comparable as regards dietetic requirements with a family consisting of a mother and two young children. By the use of factors carefully ascertained on the basis of the needs of persons of different sexes at different ages, it is possible to express every family, of whatever constitution, in terms of adult males. This calculated figure is the "man-value."

Professor Cathcart's report deserves careful study. His findings are expressed in simple language which requires no paraphrasing. The attention of the Committee may, however, be directed to his statement that the Cardiff families are on the whole better off as regards dietary than those of similar position in the North, where climatic conditions would seem to demand a state of things quite the reverse. His conclusion accords with the experience of this Department, in that we have found little evidence of under-nutrition among children, even during the present long spell of trade depression and unemployment, in the middle of which Miss Shanks' observations were made. It is satisfactory, also, to note that even the very poor seem to be making good use of the means at their disposal. The fact that the children of the families investigated were under the average in height and weight raises questions as to the adequacy of the dietaries as expressed in the terms which Prof. Cathcart uses, but the answer is one which must be sought from the physiologists, and investigations such as this ought to help them to decide the question.

RALPH M. F. PICKEN,
Medical Officer of Health.

9th December, 1929.

Report on a Study of the Dietaries of Families in Cardiff.

By Professor E. P. Cathcart, Physiology Department,
Glasgow University.

The investigation, of which the following is an abstract, was carried out in Cardiff by Miss Shanks during the months of May, June and July, 1928. The families studied all belonged to the manual working-class, dockers, casual labourers, etc. Fifty-nine families were investigated, but three of the studies had to be discarded, as they were found, on examination, to be quite inaccurate. Each study was of a week's duration.

In the following tables it will be noted that two-man values (*i.e.*, families reduced to terms of men by the use of appropriate factors) are used ; family man value = actual man value of family ; and diet man value = actual man value of those who

consumed the food purchased during the study week, *i.e.*, allowance has been made for visitors or absentees. Special treatment of the appropriate data was employed where special circumstances dictated, like keeping of boarders, use of home-grown vegetables, supply of free milk or food, etc.

The following table gives the general summary of the means for the 56 families recorded :—

Man value		Diet per man per day in gms.			Calories	Expenditure on food per man per week	Calories per 1d. spent
Family	Diet	Protein	Fat	Carbohydrate			
4·55	4·54	78·7	113·6	440·9	3,174	8/6	225·0
...	...	S.D. 16·7	32·2	78·7	579·9	29·3 pence	45·4
...	...	% T.C. 10·2	33·3	56·5	...	...	...

S.D.=Standard Deviation. % T.C.=Percentage of Total Calories.

The content of protein, fat and carbohydrate, as their absolute and percentage amounts show, differ very markedly from the so-called standard diet of Voit for medium work :—

Protein		Fat		Carbohydrate		Calories
gms.	% T.C.	gms.	% T.C.	gms.	% T.C.	
118	16	56	17	500	67	3,055

Experience has demonstrated that, even if this standard of Voit be true for conditions in Germany, it is certainly not true as regards this country. The average values for a long series of dieting studies in Great Britain give figures as follows :—

Protein		Fat		Carbohydrate		Calories
gms.	% T.C.	gms.	% T.C.	gms.	% T.C.	
104·5	12·5	94·5	25·5	517·2	62	3,445

But as the class studied in the present investigation was that of the less well paid manual workers, obviously it is better to compare those Cardiff figures with studies carried out on a similar class. Similar studies have been carried out in Glasgow (6) and Dundee (2) and the following table gives the mean results with certain Cardiff results for comparison :—

	Protein		Fat		Carbohydrate		Calories	Calories per 1d.
	gms.	% T.C.	gms.	% T.C.	gms.	% T.C.		
Glasgow (average) ...	72·7	11·6	79·2	28·6	375·4	59·8	2,574	219·2
Dundee ,, ...	59·6	11·3	57·3	24·7	337·1	64·0	2,159	244·5
Cardiff ,, ...	78·7	10·2	113·6	33·3	440·9	56·5	3,174	225·0
Cardiff I. (under 9/- per man)	56·4	9·5	67·8	25·8	389·2	64·7	2,444	309·2
Cardiff II. (under 12/- per man)	65·3	10·1	89·6	31·4	381·6	58·5	2,654	249·6

As these figures show, the average for Cardiff is well above those ruling both in Glasgow and Dundee. Admittedly the Glasgow data were collected when the costs were high, between the years 1921-1924, and Dundee in 1923, and further that the households investigated were on the whole in the receipt of much smaller wages than that of the average Cardiff household in 1928. But even if comparison be made between the two worst paid Cardiff groups (Group I consisted of only 4 and Group II of 14 out of the 56 studied), Group I is in receipt of a better diet than the Dundee families and Group II is definitely better, both in composition and total energy content, than either the Glasgow or Dundee series.

As was to be expected from all previous experience, the greater the amount of money available for expenditure on food the smaller the number of calories obtained per penny spent (see graph attached). It must not be inferred, however, that the mere acquirement of a large number of calories per penny spent is of necessity valid evidence of sound housekeeping and wise and careful expenditure. As a general rule it means, unfortunately, that second quality material and/or stale food materials are purchased, giving a good enough return in calories at the cost of quality, variety and flavour. Our experience has been that often in those households with the most slatternly mothers, who leave the purchasing largely to their children, an excellent return is obtained. In certain cases it is fortunately true that the good return is due to careful and thoughtful marketing.

The influence of the income as a governing factor in the nature of the diet is again shown in the following table, the 55 families here being grouped in relation to *total* weekly income :—

Group	No. of Families	Gms. of			Total Calories	Calories per penny
		Protein	Fat	Carbo-hydrate		
I. £1—£1 19s. 11d. (mean £1 13s. 7¼d.) ...	9	73·7	101·4	453·9	3,091	229·7
II. £2—£2 19s. 11d. (mean £2 10s. 7¼d.) ...	20	78·7	105·7	447·7	3,128	252·4
III. £3—£3 19s. 11d. (mean £3 7s. 2¾d.) ...	16	77·6	114·4	425·4	3,113	213·9
IV. £4 upwards (mean £4 17s. 10¾d.) ...	10	86·2	140·2	450·7	3,494	189·3

These figures again emphasise the fact that the most marked feature in the alteration of the composition of the diet with rising income is the increase in the fat content.

As regards the more purely social side, using the standards which have been adopted as the result of years of experience in this laboratory, 33 out of the 56 families studied could be entered up as "both parents good." Yet in spite of this fact, taking the School Medical Officer's report for Cardiff, 1928, as the criterion for the heights and weights of children of school age in Cardiff, the children of the households investigated are slightly below the mean values as given by him. Our figures, drawn as they are from but small numbers, are as follows (confining them to the comparable figures available in the report mentioned) :—

Boys.

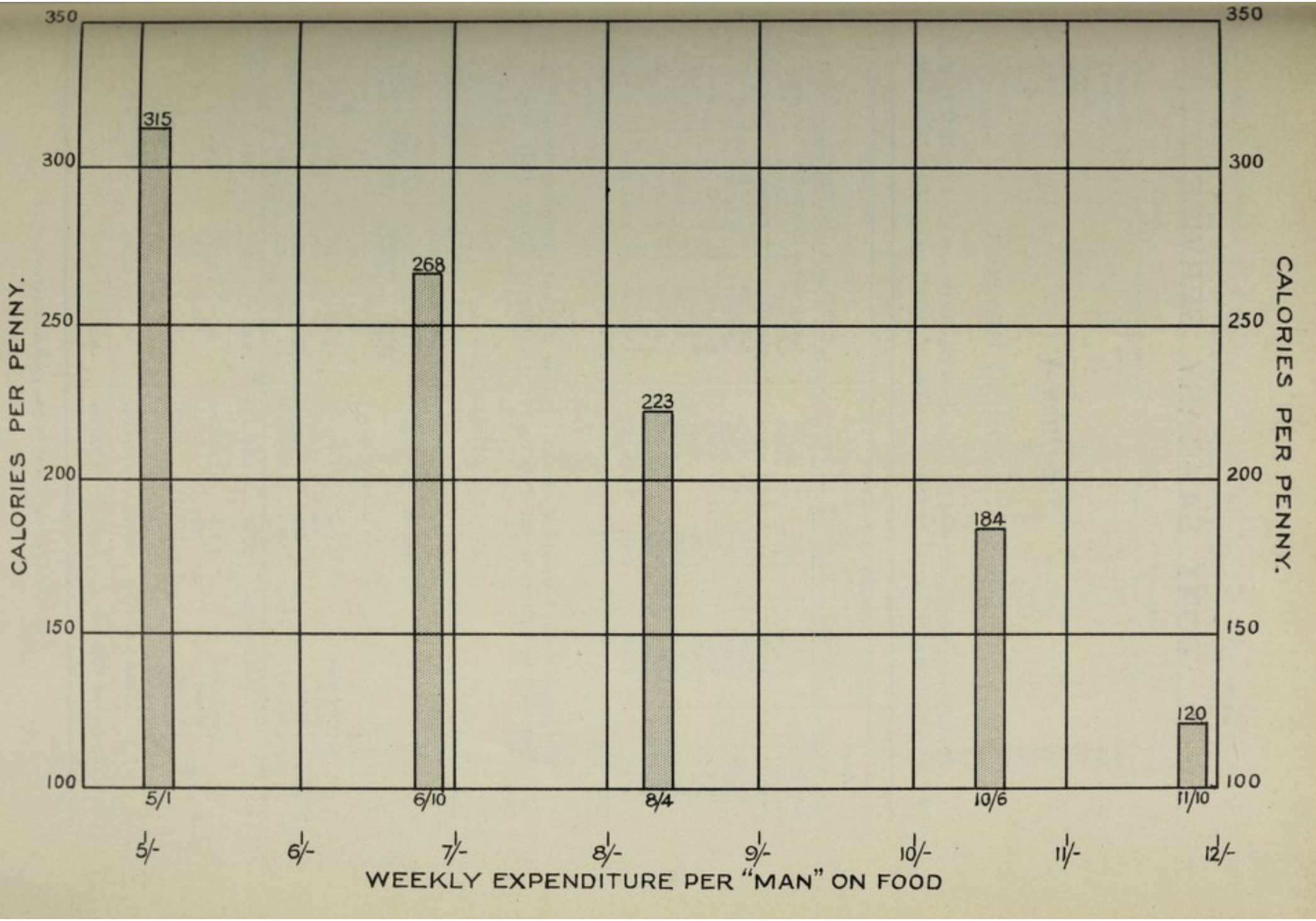
Age	No.	Our Values		S.M.O.'s Report Values		
		Wt. in lbs.	Ht. in ins.	Wt. in lbs.	Ht. in ins.	No.
3	11	34·73	37·39	34·00	37·60	141
4	13	35·87	38·85	37·30	40·10	639
5	6	39·63	40·42	40·70	42·10	921
6	15	40·62	42·92	44·10	44·30	548
7	7	45·75	46·61	47·70	46·20	258
8	8	52·59	48·50	55·10	48·60	207
9	4	56·81	49·56	58·40	50·00	954
10	...	...	...	...	...	...
11	4	68·44	55·00	...	...	...
12	2	62·63	55·13	75·90	55·30	1,025
13	6	78·50	56·08	80·30	56·50	356

Girls.

Age	No.	Our Values		S.M.O's. Report Values		
		Wt. in lbs.	Ht. in ins.	Wt. in lbs.	Ht. in ins.	No.
3	7	31·64	37·36	33·20	37·10	100
4	11	33·98	38·61	36·50	39·80	563
5	8	37·88	41·56	39·30	41·80	805
6	20	44·24	44·66	42·70	44·10	576
7	6	48·29	46·75	46·20	46·40	271
8	9	51·28	48·50	53·20	48·60	144
9	3	54·92	49·83	55·90	49·50	357
10	7	56·75	51·82	...	...	...
11	9	63·50	53·44	...	...	...
12	6	69·58	54·29	77·90	56·30	1,145
13	3	79·92	58·75	82·80	57·20	251

The foregoing gives in essence the principal facts which emerge from the analysis of the data collected. A full report will be published in due course when other similar data for another town has been collected.

22*nd October*, 1929.


350
300
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CALORIES PER PENNY.
CALORIES PER PENNY.
5/-
6/-
7/-
8/-
9/-
10/-
11/-
12/-
WEEKLY EXPENDITURE PER "MAN" ON FOOD

PORT SANITARY SERVICE.

Section 1.

SHIPPING ENTERING THE PORT.

The following table (compiled from information kindly supplied by H.M. Collector of Customs) shows the annual number of arrivals of vessels and tonnage since 1901 :—

Years	Number of Arrivals			Tonnage		
	Foreign	Coastwise*	Totals	Foreign	Coastwise	Totals
1901-10 (mean)	2,741	8,982	11,723	3,206,425	3,072,287	6,278,712
1911-20 („)	3,433	6,823	10,256	3,674,015	3,272,709	6,946,724
1921	1,656	5,042	6,698	2,066,973	1,689,474	3,756,447
1922	2,818	5,356	8,174	3,437,294	2,342,461	5,779,755
1923	3,282	5,026	8,308	3,961,631	2,343,827	6,305,458
1924	3,424	5,145	8,569	3,689,057	2,352,124	6,041,181
1925	3,405	4,686	8,091	3,399,249	1,920,546	5,319,795
1926	2,204	3,517	5,721	2,208,168	1,218,551	3,426,719
1927	3,451	5,847	9,298	3,593,633	3,013,405	6,607,038
1928	3,205	4,530	7,735	3,389,525	1,695,890	5,085,415
1929	3,531	4,601	8,132	3,652,185	1,891,215	5,543,400

The number and tonnage of vessels entering the port (including Penarth) which were inspected by officers of the Port Sanitary Authority during 1929 are set out below :—

Ministry of Health Table A.

		Number	Tonnage	Number Inspected by		Number reported defective	Number of Vessels on which defects were remedied
				Medical Officer	Sanitary Inspector		
Foreign	Steamers	2,793	3,538,851	100	2,793	380	344
	Motor	99	41,810	3	99	3	2
	Sailing	224	22,585	3	224	8	5
	Fishing	415	48,939	...	415	...	...
	Total Foreign...	3,531	3,652,185	106	3,531	391	351
Coastwise	Steamers	2,277	1,632,690	56	2,277	95	80
	Motor	305	30,650	...	305	...	...
	Sailing	136	10,981	1	136	...	...
	Fishing	...	...	...	...	...	...
	Total Coastwise	2,718	1,674,321	57	2,718	95	80
Total Foreign and Coastwise ...		6,249	5,326,506	163	6,249	486	431

* Including tugboats, sand barges, pleasure steamers, etc.

It will be seen from the following table that there was but slight variation in the number of vessels dealt with by the Department from month to month during 1929 :—

Month.	Foreign	Coastwise	Totals
January	291	266	557
February	236	218	454
March	312	250	562
April	281	248	529
May	270	252	522
June	318	199	517
July	329	240	569
August	306	219	525
September	282	221	503
October	288	246	534
November	273	234	507
December	247	223	470
Totals ...	3,433	2,816	6,249

The nationalities of the several types of vessels dealt with during 1929 are shown in the following table :—

Nationality	Steam	Motor	Sailing	Totals
American	21	...	...	21
Argentine	1	...	...	1
Belgian	39	...	...	39
British	3,931	356	152	4,439
Danish	102	7	...	109
Dutch	63	7	...	70
Esthonian	11	...	...	11
Finnish	5	...	2	7
French	391	20	206	617
German	64	1	...	65
Greek	173	...	...	173
Italian	117	3	...	120
Japanese	1	...	...	1
Latvian	2	1	...	3
Lithuanian	1	...	...	1
Norwegian	246	3	...	249
Panamanian ...	6	...	...	6
Peruvian	1	1	...	2
Portuguese	3	...	...	3
Rumanian	5	...	...	5
Russian	8	...	...	8
Spanish	200	...	...	200
Swedish	75	5	...	80
Yugo-Slavonian ...	19	...	...	19
Totals ...	5,485	404	360	6,249

Section 2.

CHARACTER OF TRADE.

Passenger Traffic.—The passenger traffic at the port is casual and small in volume, and cannot be classified in the form prescribed by the Ministry of Health (*Table B*). The number of inward passengers during 1929 was 331, all of whom (except three) came on cargo vessels. The number of outward passengers totalled 1,751.

Cargo Traffic.—The principal imports are iron ore, pitwood, fruit, potatoes, onions, grain, flour, sugar and other provisions. The principal exports are coal, coke, patent fuel and flour. Amongst the countries and places with which the port principally trades may be mentioned Spain, France, Portugal, Italy, Norway, the Baltic Ports, United States of America, Canada and North Africa.

The following figures as to imports and exports annually since 1911 have been supplied by H.M. Collector of Customs :—

Years.	Imports (tons and loads)	Exports (tons)
1911-20 (mean)	1,879,138	12,372,330
1921	1,043,000	5,912,485
1922	1,561,622	10,659,227
1923	2,183,601	12,610,305
1924	2,141,486	11,367,604
1925	1,940,836	9,798,810
1926	2,003,654	4,358,411
1927	2,073,680	10,188,499
1928	1,730,940	8,970,143
1929	1,981,165	10,144,026

Section 3.

WATER SUPPLY.

The water supply for the port and shipping is derived entirely from the Cardiff Corporation supply by means of hydrants installed at convenient points ; water boats are not used.

During the year, 250 samples of drinking water from ships were submitted to the Cardiff and County Public Health Laboratory for bacteriological examination ; the results are summarised below :—

Satisfactory	196
Moderate Purity	20
Doubtful Purity	22
Contaminated	12
Total ...	250

Thirty-four notices were served on the masters of vessels having contaminated water or water of doubtful purity on board, and in each instance the tanks were emptied, cleansed and refilled at this port.

Section 4.

INFECTIOUS DISEASE, ETC.

Detection of Infectious Disease.—Cases of infectious disease are reported to inspectors who board every vessel on arrival at the port. Warning messages are sometimes received from Lloyd's signal stations at Barry Island and Penarth, but there is no arrangement for receiving wireless intimation of approaching cases of infectious disease. The nearest receiving station for wireless messages is at Milford Haven —over one hundred miles from Cardiff.

The usual inquiries were made during the year as to the number of vessels carrying wireless installations (excluding vessels under 500 tons N.R.T.), the results of which are as follows :—

	Vessels arriving		Totals
	Foreign	Coastwise	
With Wireless ...	1,410	475	1,885
Without Wireless ...	475	215	690
Totals ...	1,885	690	2,575

Method of Dealing with Infectious Disease.—Cases of infectious disease, other than cholera, yellow fever, plague or smallpox, arriving at the port are conveyed in the port sanitary motor ambulance to the City Isolation Hospital. The Flatholm Hospital, which is situated on an island in the middle of the Bristol Channel, where accommodation is provided for sixteen patients suffering from cholera, yellow fever or plague, has not been in use during the year. It has, however, been kept in good order and readiness for use in any emergency. Cases of smallpox are removed to the Cardiff Smallpox Hospital, and contacts are at once vaccinated or revaccinated and kept under observation for the necessary period. Usually cases of malaria are treated at the Royal Hamadryad Seamen's Hospital. Routine throat swabbing of the crew is practised when a case of diphtheria is discovered on arrival, and members of the crew giving positive swabs are usually removed to the City Isolation Hospital. When members of a ship's crew suspected to have been in contact with infectious disease are paid off at Cardiff they are supervised at their lodgings ashore, and information is sent to the responsible local authorities should any of them leave Cardiff.

Disinfection.—Infected quarters on board vessels are fumigated by officers of the Port Sanitary Authority. Bedding, clothing and effects are removed to the Corporation Disinfecting Station, and are disinfected by steam. Articles of clothing to the number of 169 were disinfected during the year, and 2,545 verminous or infected beds were destroyed.

Scabies.—During the year 41 cases of scabies amongst seamen were treated at the Corporation Cleansing and Disinfecting Station.

Bugs.—Vigorous action is still being taken for the eradication of bugs, which are a constant source of irritation and discomfort in the crew's quarters. One hundred and fifty-two vessels were reported as being verminous, and upon inspection being made notices were served on the masters requiring them to take steps to eradicate the bugs. In most cases berths, etc., were sprayed with a vermicide, and in

others in which there was not time for action supplies of vermicide were taken to sea. On the return of the vessels investigation was made as to the results, and in most cases these have been satisfactory. In cases where the results have been unsatisfactory it has been found that the spray had not been used efficiently or with sufficient frequency.

Venereal Disease.—The treatment of *bona fide* seamen suffering from venereal disease is undertaken at a treatment centre at the Royal Hamadryad Seamen's Hospital. Although the centre is mentioned here, it forms part of the general scheme of the Cardiff City Council for the diagnosis and treatment of venereal diseases and is not an integral part of port sanitary administration. The following tabular statement shows the number of cases dealt with, the number of attendances, and the aggregate number of in-patient days each year since the treatment centre was opened in April, 1917 :—

Years	Number of Persons Attending for the First Time	Total Attendances	Aggregate Number of In-patient Days
16th April, 1917	572	7,191	2,692
1918	790	4,361	5,297
1919	972	17,040	6,281
1920	1,234	12,872	4,679
1921	868	12,242	3,352
1922	786	12,856	3,775
1923	821	13,704	3,722
1924	615	16,212	2,697
1925	616	16,008	3,104
1926	565	12,702	2,536
1927	640	13,995	2,426
1928	646	15,437	3,195
1929	704	15,027	2,093

Thirty-one cases of venereal disease were reported to inspectors and recommended for specialist treatment at the centre. Leaflets in various languages relating to the facilities for treatment at the port are distributed by the inspectors on arrival of vessels.

Bacteriological Examinations.—Examinations of rats for the detection of plague, of swabs for diphtheria and of other specimens (blood, sputum, etc.) for the diagnosis of disease are carried out at the Cardiff and County Public Health Laboratory.

Cases of Infectious Disease landed from Vessels.—The following table shows that 44 cases of notifiable infectious disease were landed from vessels during the year :—

Ministry of Health Table C.

Disease	Number of Cases during 1929	Average number of Cases for previous 5 years
Chickenpox	1	0·2
Dysentery	4	1·5
Malaria	16	12·5
Pneumonia	4	4·4
Scarlet Fever	1	0·4
Smallpox	1	0·2
Tuberculosis	15	9·0
Typhoid Fever	2	3·0

These 44 cases occurred on 43 vessels. The following tabular statement shows how they were dealt with :—

	Admitted to City Isolation Hospital	Admitted to Royal Hamadryad Seamen's Hospital	Admitted to City Smallpox Hospital	Allowed to return home	Treated aboard Ship	Totals
Chickenpox... ...	1	...	...	...	...	1
Dysentery	3	1	...	...	...	4
Malaria	...	15	...	...	1	16
Pneumonia ...	...	4	...	...	...	4
Scarlet Fever ...	1	...	...	...	...	1
Smallpox	...	...	1	...	...	1
Tuberculosis ...	...	12*	...	3	...	15
Typhoid Fever ...	2	...	...	...	...	2
Totals ...	7	32	1	3	1	44

In addition, three cases of measles, six cases of diarrhœa, one case of mumps and one case of acne (in regard to whom a slight suspicion of smallpox arose) were landed from vessels, all of whom were treated at the City Isolation Hospital.

Other Cases of Infectious Disease.—Thirty other cases of infectious disease were dealt with by the port sanitary staff which were ascertained to fall properly within the province of urban administration, and were referred to the districts to which they belonged, as follows :—

Disease	Cardiff	Barry
Chickenpox	1	...
Malaria	3	4
Pneumonia	3	3
Tuberculosis	12	2
Typhoid Fever	...	2
Totals	19	11

Three children suffering from ringworm were landed at the port on 6th April, 1929, from a passenger steamer which they had joined at Liverpool *en route* for Canada. They received appropriate medical treatment and left again for Canada a month later.

Cases of Infectious Disease occurring on Vessels during the Voyage but disposed of prior to Arrival.—Thirty-four cases of infectious disease were reported to have occurred on 20 vessels during the voyage and were disposed of prior to arrival, as follows :—

Ministry of Health Table D.

Disease	Number of Cases during 1929	Average number of Cases for previous 5 years
Dysentery	1	5.0
Malaria	23	16.2
Pneumonia	4	4.2
Smallpox	1	1.6
Tuberculosis	2	6.0
Typhoid Fever	3	4.0

* Three of these were subsequently transferred to the City Lodge Hospital.

Section 5.

MEASURES AGAINST RODENTS.

The effect of Article 28 of the International Sanitary Convention of Paris, 1926, has been materially to modify the procedure adopted by port sanitary authorities to reduce to a minimum the rat population of vessels. Formerly, rat-infested vessels arriving at the port were dealt with under the powers conferred by the Rats and Mice (Destruction) Act, 1919, but, with the widespread adoption of the International Convention, the demand for certificates of deratisation and exemption from deratisation under Article 28 of the Convention has rapidly grown. During 1929, 181 deratisation certificates and 110 exemption certificates were granted (the method of deratisation employed being fumigation by sulphur dioxide in 179 instances and by trapping alone in two instances) as compared with 35 deratisation certificates and four exemption certificates issued during 1928. The Minister of Health has now given formal effect to the provisions of Article 28 of the International Sanitary Convention by making the Public Health (Deratisation of Ships) Regulations, 1929, which came into force on 1st January, 1930, and, as it is now obligatory on masters of vessels coming from a foreign port to produce a certificate issued at an approved port within the previous six months, it may be anticipated that these figures will be very considerably increased during the year 1930. Generally speaking, so far as vessels are concerned, the scope of the Rats and Mice (Destruction) Act is now restricted to ships in the coasting service. During the year, 75 notices were served under the Rats and Mice (Destruction) Act.

Advice as to rat-proofing of vessels is given whenever opportunity offers (*e.g.*, during the carrying out of repairs). To prevent transit of rats between ships and the shore, the use of rat-guards on mooring ropes and the tarring of ropes and gangways are insisted upon, and gangways are raised at night-time where possible.

Systematic visits are paid by inspectors to quays, wharves and warehouses in the vicinity of the docks, and, when necessary, responsible owners and occupiers are advised as to the best practical means of eradicating rodents. The laying of baits around the docks and in premises situated adjacent thereto is supervised by port sanitary inspectors. In most instances warehouses are reasonably rat-proof, possessing concrete floors and iron doors. Rat poison (barium carbonate) is sold by the Department at cost price, the amount sold during the year being 18¼ lb. In all, 35,741 baits were laid in and around dock premises during the year, and 6,382 rats and 2,196 mice were found dead as a result of these measures.

Rats caught in ships and on quays and wharves, in warehouses, etc., and rats found dead after fumigation of vessels are submitted to the Cardiff and County Public Health Laboratory for examination for the detection of plague. During the year 1,065 rats were so submitted, *i.e.*, 446 caught in ships, 56 caught in warehouses, etc., and 563 from ships after fumigation. Three hundred and ninety-eight rats (included in the number examined for the detection of plague) were submitted to the Department of Zoology of the National Museum of Wales for identification and classification.

During 1929, 7,705 rats were destroyed; of these, 777 were caught in ships, 231 in warehouses, etc., and 6,697 were found dead on ships after fumigation.

Rats Destroyed during 1929.

Ministry of Health Table E.

(*a*) Vessels.

Number of Rats	Jan.	Feb.	Mar.	April	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Total in Year
Black	352	911	630	926	658	890	1,213	345	323	259	752	215	7,474
Brown	...	...	...	...	...	...	...	...	...	...	...	...	...
Species not recorded	...	...	...	...	...	...	...	...	...	...	...	...	...
Examined	107	212	42	83	108	84	104	48	46	32	101	42	1,009
Infected with plague	...	...	...	...	...	...	...	...	...	...	...	...	...

Ministry of Health Table F.

(*b*) Docks, Quays, Wharves and Warehouses.

Number of Rats	Jan.	Feb.	Mar.	April	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Total in Year
Black	27	24	7	31	16	10	26	15	24	13	23	9	225
Brown	...	...	...	...	...	...	...	5	1	...	...	...	6
Species not recorded	...	...	...	...	...	...	...	...	...	...	...	...	...
Examined	6	12	3	2	4	4	7	1	10	3	3	1	56
Infected with plague	...	...	...	...	...	...	...	...	...	...	...	...	...

(*c*) Baits laid around Dock Premises and Numbers of Rats and Mice found dead.

Number	Jan.	Feb.	Mar.	April	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Total in Year
Baits laid	4,142	1,622	2,316	1,994	2,742	2,965	3,071	1,045	5,086	4,371	3,974	2,431	35,741
Rats found dead	679	625	305	476	660	429	434	349	604	742	587	492	6,382
Mice found dead	223	296	137	54	179	227	177	223	155	261	223	41	2,196

Ministry of Health Table G.

PARTICULARS RELATING TO PLAGUE "INFECTED" OR "SUSPECTED" VESSELS ARRIVING IN THE PORT DURING 1929.

Name of Vessel 1.	Date of Arrival 2.	Whether "infected" or "suspected" 3.	Methods of Rat Destruction employed 4.	Number of Dead Rats recovered 5.	Whether a Certificate of Deratisation was issued 6.	Remarks 7.
—	—	—	—	—	—	—

Ministry of Health Table H.

MEASURES OF RAT DESTRUCTION ON VESSELS FROM PLAGUE INFECTED PORTS (OTHER THAN THOSE INCLUDED IN TABLE G) ARRIVING IN THE PORT DURING 1929, AND NUMBER OF CERTIFICATES ISSUED IN RESPECT OF SUCH VESSELS.

Total Number of Vessels arriving from plague infected Ports 1.	Number of such Vessels fumigated by SO_2 2.	Number of Rats killed 3.	Number of such Vessels fumigated by HCN. 4.	Number of Rats killed 5.	Number of such Vessels on which trapping, poisoning, etc., were employed 6.	Number of dead Rats recovered 7.	Number of such Vessel on which measures of rat destruction *were not carried out* 8.	Number of Fumigation Certificates issued on Form "Port 11"*		Number of other Certificates issued 11.
								Deratisation 9.	Exemption 10.	
7	4	273	—	—	2	19	1	4	1	—

Ministry of Health Table I.

MEASURES OF RAT DESTRUCTION ON VESSELS (OTHER THAN THOSE INCLUDED IN TABLES G AND H) AND NUMBER OF CERTIFICATES ISSUED IN RESPECT OF SUCH VESSELS DURING 1929.

Number of Vessels fumigated by SO_2 1.	Number of dead Rats recovered 2.	Number of Vessels fumigated by HCN. 3.	Number of dead Rats recovered 4.	Number of Vessels on which trapping, poisoning etc., were employed 5.	Number of dead Rats recovered 6.	Number of Certificates issued on Form "Port 11"*		Number of other Certificates issued 9.
						Deratisation 7.	Exemption 8.	
175	6,424	—	—	38	758	177	109	—

* Form Port 11 is issued only by the Port Medical Officers of Health of Ports approved by the Minister of Health for the issue of Deratisation and Deratisation Exemption Certificates in accordance with the provisions of Article 28 of the International Sanitary Convention of 1926.

Section 6.

HYGIENE OF CREWS' SPACES, ETC.

During the year, 6,249 vessels, with a tonnage of 5,326,506, were inspected on arrival. The number of persons in the crews carried by these vessels was 102,267. In addition, 3,641 re-inspections of ships in dock were made. Fifty-five informal notices were served and 523 verbal orders were given to masters and others in connection with nuisances and sanitary defects.

Ministry of Health Table J.

CLASSIFICATION OF NUISANCES.

Nationality of Vessel	Number inspected during 1929	Defects of original construction		Structural defects through wear and tear		Dirt, vermin and other conditions prejudicial to health	
		Found	Remedied	Found	Remedied	Found	Remedied
British	4,439	...	...	109	86	548	482
Other Nations	1,810	...	...	177	148	372	329

The lighters carrying grain, patent fuel, etc., in the docks have been periodically examined, cleansed, disinfected and repaired during the year, and the fishing boats and fish wharves have been regularly visited, cleansed and disinfected.

Section 7.

FOOD INSPECTION, ETC.

Imported Foodstuffs.—The following table shows the amount of foodstuffs imported during the year :—

Articles	Tons	cwt.	Bags	Bales	Barrels	Boxes	Skips
Almonds	...	...	...	...	...	110	...
Apples	3	...	...	...	95,512	4,739	...
Apple Juice	...	...	...	...	...	1,110	...
Bacon and Hams ...	...	...	...	18,527	10	28	...
Baking Powder ...	...	...	...	...	...	80	...
Barley, Pearl ...	...	...	931	...	...	...	...
Biscuits	...	...	...	...	...	390	142
Bread	...	...	...	...	...	41	...
Butter	...	...	...	...	...	2,082	...
Catsup	...	...	...	...	...	1,635	...
Cheese	...	...	...	...	...	30,152	...
Coffee	...	...	17	...	...	10	...
Condiment, Mixed ...	...	10	150	...	...	...	...
Confectionery ...	...	...	...	...	500	998	...
Cream	2	8	...	...	...	21,339	...
Eggs	...	...	...	...	...	6	...
Fat, Edible	...	...	...	...	297	5,159	...
Fish, Canned ...	10	19	...	...	...	467	...
Fish, Fresh	5,696	11	...	...	...	...	...
Fish, Salted ...	...	...	...	10	102	...	...
Flour	98	...	20,493	...	...	450	...
Fruit, Fresh (Various)	1	1	...	...	40,006	218,995	...
Fruit, Canned ...	2,283	5	...	...	...	1,045	...
Fruit, Dried	57	16	...	...	...	18,841	...
Fruit Pulp	...	...	...	...	...	739	...
Gelatine	...	...	...	60	...	...	...
Glucose	...	...	...	...	240	...	...
Honey	...	...	...	...	...	125	...
Hops	...	...	3	...	...	...	...
Lard	...	...	...	...	...	122,357	...
Macaroni	...	...	...	...	...	1,717	...
Malt	...	...	668	...	...	...	...
Margarine	...	...	...	...	21	8,903	...
Meat, Canned ...	...	...	...	...	...	14,661	...
Meat, Preserved ...	...	...	...	...	...	6	...
Meat, Salted	...	...	...	...	764	4	...
Milk, Condensed ...	2	3	...	...	22	170,450	...
Molasses	...	...	...	...	180	68	...
Nuts	...	...	125	...	...	...	...
Oat Products ...	...	...	...	...	...	15,157	...
Oats, Rolled ...	...	...	1,522	...	...	33,552	...
Olive Oil	...	...	...	...	...	620	...
Onions	1,537	...	59,127	...	...	46,469	...
Peas and Beans ...	4	18	4,975	...	...	150	...
Potatoes	19,128	1	33,471	...	...	6,849	...
Provisions, Mixed ...	...	16	...	...	...	238	...
Rice	...	...	7,473	...	...	...	...
Sugar	34,326	...	27,643	...	...	...	...
Sago	...	...	15	...	...	...	...
Salt	...	...	608	...	...	...	...
Semolina	...	...	40	...	...	...	...
Tomatoes, Canned ...	...	...	...	...	...	70,780	...
Tomatoes, Fresh ...	...	...	...	...	...	36,828	...
Vegetables, Canned ...	...	...	...	...	...	3,985	...
Vegetables, Dried ...	...	10	40	...	...	307	...
Vegetables, Fresh ...	22	10	19,636	...	...	157	...
Vegetables, Salted ...	...	...	...	...	356	...	...
Wheat	121,119	...	...	...	...	...	...
Wheat Products ...	...	...	640	...	...	5,575	...
Yeast Cake	...	...	...	...	...	51	...

Imported Meat.—In addition to the foodstuffs previously referred to, six cargoes of frozen meat were imported, particulars of which are as follows :—

Date	Loading Port	Quarters of Beef	Carcases of Mutton	Carcases of Lamb	Crates of Offal
11th Jan. ...	Portland ...	1,469	...	7,437	70
11th Feb. ...	Albany ...	...	883	11,497	...
7th Mar. ...	Melbourne ...	3,543	...	...	...
8th May ...	Adelaide ...	...	996	10,080	...
17th May ...	Adelaide	400	743	7,363	...
7th Nov. ...	Freemantle	1,760	365	4,982	14
	Totals ...	7,172	2,987	41,359	84

Public Health (Imported Food) Regulations, 1925.—The following table shows the kinds and quantities of food withheld from human consumption during the year :—

	Tons	cwt.	lb.
Apples	5	14	37
Apple Juice	—	—	40
Apricots, Canned	—	10	1
Beef, Canned	—	5	16
Brawn, Canned	—	—	6
Carrots and Cabbage (Red)	13	11	0
Cherries, Canned	—	2	94
Fruit (Mixed), Canned	—	10	80½
Fruit Jelly, Canned	—	—	3
Fruit Pulp, Canned	—	1	18
Gooseberries	—	—	6¼
Grape Fruit	—	9	27
Grapes	—	10	41
Lemons	15	13	0
Marmalade	—	—	4
Melons	4	15	28
Milk, Condensed	3	12	56
Mutton, Frozen	—	—	104
Oats, Rolled	—	3	41
Olives, Canned	—	—	12½
Onions	22	0	88
Oranges	17	0	30
Parsnips	4	16	0
Peaches	—	—	11
Pears	—	6	59
Peas	—	—	19
Pilchards, Canned	—	1	32
Pineapple, Canned	—	—	29½
Potatoes	10	13	0
Rice	—	13	4
Tomatoes, Canned	4	18	95¼
Tomato Paste, Canned	—	1	55
Tongue, Canned	—	—	12
Veal, Canned	—	—	12
Wheat	41	1	109
Total	147	14	51

Public Health (Imported Milk) Regulations, 1926.—No fresh milk was imported by sea during the year.

Public Health (Preservatives, etc., in Food) Regulations, 1925—1927.—Ten samples of food were submitted to the Public Analyst of Cardiff for analysis as to the presence of preservatives. The samples, all of which were reported to be free from preservatives or to contain preservatives within the prescribed limits, were as follows :—

Almonds, Ground	1
Apples, Dried	1
Cream, Canned	1
Currants	1
Eggs, Liquid	1
Gelatine	1
Prunes	1
Raisins	2
Sugar	1
Total ...	10

Arrangements have been made for a greater number and variety of samples to be analysed in future.

Public Health (Shell-fish) Regulations, 1915.—There are no shell-fish beds or layings within the area under the jurisdiction of the Port Sanitary Authority.

Examination of Other Samples of Food.—No samples of food were submitted for bacteriological examination during 1929. A sample of grapes, which were found to have a heavy coating of white powder, was sent to the Public Analyst for examination. Upon analysis the powder was found to consist of a mixture of calcium carbonate and calcium hydrate in quantities respectively equivalent to 1·75 and 0·07 grains per pound, and to be free from arsenic, copper, lead, sulphur and boric acid. The importers, who failed to give any satisfactory explanation of the presence of the chemicals, were informed that, while the consignment would not be withheld from sale, they would be required to take the necessary action to ensure that grapes would not be imported in the same condition in future.

Examination of Hide Thongs.—Three samples of hide thongs from orange boxes were submitted for bacteriological examination as to the presence of anthrax bacilli with negative results.

Section 8.

MEDICAL INSPECTION OF ALIENS.

The following information with reference to the medical inspection of aliens is given in the form required by the Ministry of Health :—

Total number of Aliens arriving at the port*		Number of temporary visitors, *i.e.*, aliens whose stay in this country will not exceed three months			Number of aliens who intend to settle permanently or remain in this country for more than three months		
Total number	Number subjected to medical inspection†	Total number	Number subjected to medical examination‡	Number of certificates issued	Total number	Number subjected to medical examination‡	Number of certificates issued
328	153	43	...	...	225	153	...

Aliens in transit			Transmigrants	
Total number	Number subjected to medical examination‡	Number of certificates issued	Total number	Number subjected to medical examination‡
22	...	...	38	...

Particulars relating to detailed Examination of Aliens.

Aliens who were subjected to detailed medical examination and were not certified by Medical Inspector 153

Number of each of the following certificates issued by the Medical Inspector of Aliens :—

(*a*) Certificate that an alien is a lunatic, idiot, or mentally deficient
(*b*) Certificate that, for medical reasons, it is undesirable that an alien should be permitted to land ... ...
(*c*) Certificate that an alien is suffering from some disease, defect or deformity, which may interfere with his capacity to support himself or his dependents ... ... } Nil
(*d*) Certificate that an alien is suffering from one of the acute infectious diseases ... ...
(*e*) Certificate that, for the purposes of an adequate medical examination, it is necessary for the alien to land in order that he may be examined ashore ... ...

Transmigrants.

Number of certificates of the cleansing of verminous transmigrants given by the Medical Inspector of Aliens to the Immigration Officer
Number of medical certificates in respect of transmigrants suffering from trachoma, favus, etc., given to the Immigration Officer ... } Nil

* Including aliens in transit and transmigrants but excluding alien seamen.

† The term *Inspection* relates to the preliminary inspection of aliens as they pass before the Medical Inspector.

‡ The term *Medical Examination* relates to detailed medical examination.

PARTICULARS RELATING TO ALIEN TRAFFIC.

Total number of passenger vessels carrying aliens which arrived during the year	1
Number dealt with by Medical Inspector of Aliens	1
Total number of cargo vessels carrying alien passengers which arrived during the year	92
Number dealt with by Medical Inspector of Aliens	Nil
Any other vessels in connection with which the Medical Inspector has had to take action in regard to aliens	Nil

Section 9.

DISEASES OF ANIMALS ACTS.

The various Orders under the Diseases of Animals Acts with reference to the importation of canine and other animals have been strictly enforced during the year. One fox, 546 dogs and 1,667 cats were imported directly or indirectly, and ten vessels arrived from scheduled countries directly or indirectly with sheep and pigs (eight of each) on board. All the vessels were visited regularly during their stay in port to ensure that the requirements of the Orders were observed, and when the vessels having sheep or pigs on board left for other British ports the port sanitary authorities concerned were notified.

Section 10.

CANAL BOATS.

Mr. S. J. Holbourn, the Chief Port Sanitary Inspector, who is also Inspector of Canal Boats, has reported that he made 65 inspections of canal boats during the year and found infringements of the Acts in 19 instances (marking one and painting 18). Verbal orders were given, and the defects were remedied in each case. The number of boats on the register was 14 (not propelled by motor), each with accommodation for two males. Generally the sanitary condition of the canal boats was satisfactory.

SCHOOL MEDICAL SERVICE.

Changes in the Staff.

By a re-arrangement of the duties of the medical staff an additional two-elevenths of medical staff-time have been devoted to the school medical service since 1st April, 1929, making the apportionment to this service three and seven-elevenths instead of three and five-elevenths. This addition became necessary owing to the pressure of special medical work, especially in connection with the Open-Air School, radiography, and more systematic medical supervision of children attending the Special School for Mental Defectives.

Dr. Mary I. Adams, Assistant Medical Officer, resigned in August, 1929, and Dr. Hilda A. Cohen was appointed in the same month to fill the vacancy.

As from 1st October, 1929, certain changes were made for the purpose of relieving the congestion of work at the Central Clinic, which involved an increase in the number of nose and throat operation clinics from two to three sessions weekly and the transfer of this work to Gabalfa Clinic; also an additional session for vision work and an additional session for special examinations, both at Canton Clinic. These re-arrangements made it possible to hold an additional nose and throat examination session weekly at the Central Clinic and to split one vision session at the Central Clinic, formerly attended by two medical officers, into two. No addition to the whole-time medical staff was made to cope with the extra work involved, but the Aural Surgeon (Mr. R. D. Owen), the Anæsthetist (Dr. H. G. Greaves), and the Ophthalmologist (Dr. J. W. Tudor Thomas) were each engaged for one additional session weekly. The number of school nurses was increased by two by the temporary transfer of two health visitors, and the increase in the clerical work necessitated the appointment of an additional junior female clerk.

In April, 1929, it was decided to introduce a system of summarising the history of each school child contained in the departmental medical records, from birth until the age of leaving school, so that it would be easily available for the medical staff whenever the child came before them for any purpose. For this work a special clerk (Miss K. F. Taylor, Ph.D.) was appointed in June, 1929.

School Hygiene.

Medical officers pay attention to the sanitary condition of school premises in the course of their duties in connection with routine medical inspections, and district sanitary inspectors also inspect school premises periodically. Defects discovered in this way are reported by the School Medical Officer to the Director of Education, who refers them to the appropriate authorities to be remedied. Constant attention is also paid to the sanitary condition and structural suitability of the schools by an officer of the City Engineer's Department.

Medical Inspection.

The numbers of children medically inspected at routine and special inspections and the numbers of re-inspections are set out in Table I of the Appendix.

Altogether, 12,437 school children were inspected at routine inspections, as compared with 12,433 in 1928. The number of children specially inspected was 5,122, compared with 4,797 in the previous year. The children dealt with at special inspections were those suspected to be suffering from diseases or defects and referred by medical officers, head teachers, school attendance officers, parents and others; 906 of them were inspected at school and 4,216 at the clinics. In addition, 3,787 individual children were re-inspected during the year, the actual number of re-inspections being 6,339, as against 3,810 and 6,666 respectively in 1928.

Findings of Medical Inspection.

The diseases and defects found at routine and special inspections to require treatment or to be kept under observation are shown in detail in Table II A. of the

Appendix. Of 11,595 elementary school children inspected at routine inspections, 1,737, or 14·98 per cent., and of 842 secondary and high school children, 154, or 18·29 per cent., were found to be suffering from one or more defects (excluding dental disease and uncleanliness) requiring treatment. Of the 5,058 elementary school children specially inspected, 2,675, or 52·89 per cent., and of 64 secondary and high school children dealt with in this way, 15, or 23·44 per cent., were found to require treatment for diseases or defects other than dental disease and uncleanliness.

The following table shows the number and proportion of cases in which diseases or defects of various kinds were discovered :—

	Defects found at Routine Inspections		Defects found at Special Inspections	
	Number	Percentage	Number	Percentage
Malnutrition	132	1·06	71	1·39
Uncleanliness	63	0·51	8	0·16
Skin Diseases	121	0·97	1,141	22·28
Defective Vision and Squint	794	6·38	413	8·06
External and Other Eye Diseases	51	0·41	114	2·22
Otitis Media	119	0·96	172	3·36
Other Ear Diseases	79	0·63	86	1·68
Enlarged Tonsils only	902	7·25	396	7·73
Adenoids only	93	0·75	42	0·82
Enlarged Tonsils and Adenoids	158	1·27	119	2·32
Other Nose and Throat Defects	40	0·32	100	1·95
Enlarged Cervical Glands	22	0·18	21	0·41
Defective Speech	24	0·19	17	0·33
Dental Diseases (found by Medical Officers) ...	1,514	12·17	266	5·19
Heart Diseases	104	0·84	34	0·66
Anæmia	36	0·29	53	1·03
Lung Diseases—Non-Tuberculous	194	1·56	73	1·42
Tuberculosis (All forms, including suspects) ...	7	0·06	4	0·08
Nervous Diseases	18	0·14	38	0·74
Deformities	258	2·07	44	0·84
Other Defects and Diseases	221	1·78	465	9·08

Entrants.—The above table and the more detailed returns in the Appendix, Table II A, refer to children in all groups. Table II B of the Appendix shows the proportion of children entering school who required treatment, and a special table (II C) is again included showing those who required treatment or to be kept under observation for defects of various kinds. The proportion of entrants found at routine inspections who suffered from such defects as required immediate treatment (exclusive of uncleanliness, pediculosis and dental diseases) amounted to 11·4 per cent., as compared with 9·5 last year, while the percentage is increased to 32·4 if all defects requiring either treatment or observation are taken into consideration. This latter figure compares with 28·5 per cent. last year. Thirty-six per cent. of the defects recorded were affections of the nose and throat, of which the majority were enlarged tonsils and adenoids.

The following table, compiled from information supplied by parents or guardians, shows the medical history of 5,488 school children (2,704 boys and 2,784 girls) prior to medical inspection as entrants :—

Diseases	Males		Females		Totals	
	Number	Percentage	Number	Percentage	Number	Percentage
Measles	1,428	52·8	1,577	56·6	3,005	54·7
Whooping Cough	946	34·9	1,047	37·6	1,993	36·3
Chickenpox	648	23·9	681	24·5	1,329	24·2
Scarlet Fever	49	1·8	52	1·9	101	1·8
Diphtheria	58	2·1	58	2·1	116	2·1
Rheumatism	30	1·1	14	0·5	44	0·8
Chorea	3	0·1	2	0·1	5	0·1
Tuberculosis...	3	0·1	2	0·1	5	0·1
Bronchitis	91	3·3	109	3·9	200	3·6
Pneumonia	134	4·9	137	4·9	271	4·9
Other Diseases	378	14·0	324	11·6	702	12·8

Enlargement of the Thyroid Gland.—Records have again been kept of children approaching puberty who were found to have enlargement of the thyroid gland (simple goitre). Among 3,365 children (1,666 boys and 1,699 girls) who had attained the age of 12 years at the beginning of 1929 and who were examined during the year, 63 (2 boys and 61 girls) were found to have enlargement of the gland. This gives a percentage incidence of 1·87 (0·12 per cent. of boys and 3·59 of girls).

Re-inspection of Children Found Defective.

A survey was again made by the medical staff of cases in certain categories referred for treatment or observation during the previous year. The total number of children overtaken in this survey was 1,547, showing 1,654 defects (see Appendix, Table VI). Such defects as malnutrition, uncleanliness and infectious skin diseases, which are continuously under supervision because of exclusion from school, and dental diseases, regarding which fairly full knowledge is obtained through the clinic organisation, were omitted from this inquiry. Many of the children previously found defective had left school or were absent at the time of re-inspection.

Of the 1,654 defects in children re-inspected, 791 had not been treated, this number including some cases of such a serious nature as heart disease, anæmia, lung diseases, and deformities. The condition of the defects on re-inspection, classified according to whether or not they had received treatment, may be shown as follows :—

	Percentage			
	Cured or improved	Not improved	Worse	Totals
Treated at School Clinics	95·0	4·9	0·1	100
Treated elsewhere	77·4	6·9	15·7	100
Not treated	26·9	70·3	2·8	100
All cases	61·4	36·3	2·3	100

Exceptional Children.

Physically Defective Children.—The numbers of children found to be physically defective are recorded in detail in the Appendix (Table III).

Greenhill Open-Air School.—Early in 1929 it was decided to utilise accommodation in the rest shed at the Open-Air School for an additional class of 30 children—making a total of 120. At the end of the year the number of physically defective children on the register was 139 (79 boys and 60 girls), the average attendance during the year being 111. Arrangements have been made for extending the accommodation still further during 1930, by the provision of three additional open-air class rooms, when accommodation will be provided for 180 children altogether. The children in attendance are kept under close medical supervision, and a report by Dr. Anderson for 1929 is given below.

Report by Dr. C. W. Anderson on the Open-Air School from the Medical Aspect.

"During 1929, 71 children (37 girls and 34 boys) were discharged from the Open-Air School. Owing to such causes as the family leaving the district, seven children were withdrawn from the school after very short periods, and therefore no opinion as to any material change in their physical condition can be given. Sixty-four children remained at the school for periods varying from 5 to 21 months. The reasons for the admission of this group were as follows :—

Condition	Number
Anæmia (alone)	7
Malnutrition (alone)	9
Anæmia and malnutrition	30
Tuberculosis (quiescent)	5
Pre-tuberculous	3
Organic disease of lungs (not tuberculous)	7
Cervical adenitis	2
Healed tuberculous peritonitis	1
Total	64

"Many of the above cases were found to be suffering from a combination of several of the diseases mentioned, but for purposes of classification only the principal defect has been considered. Sixteen of the children at some period of their lives had shown clinical signs which were sufficiently suggestive to warrant an examination by the Tuberculosis Officer. A history of tuberculosis in the parents or brothers and/or sisters was obtained in 26 cases. With the exception of three of the 64 children, all improved considerably in their general physical condition. A note on each of these three children may be of interest :—

"*Case I.*—V. C., age 11 years. Admitted to the Open-Air School in 1927 suffering from malnutrition and anæmia. During the next 16 months, while attending this school, she gained 6 pounds in weight, but apart from this her general condition did not improve to any marked extent. As the mother of the child had died from tuberculosis she was referred to the Tuberculosis Officer. As a result of his examination, it was considered advisable to exclude the child indefinitely from school.

"*Case II.*—M. S., age 10 years. A very pale, under-nourished, poorly-developed child. Had been delicate from infancy. Shortly after admission to the Open-Air School, during routine medical examination, suspicious sounds were heard at the apex of the right lung. The child was referred to the family practitioner, and later she was excluded from school indefinitely.

"*Case III.*—K. L., age 8 years. A debilitated, anæmic, nervous child. Attended Open-Air School for about a year and gained 8½ pounds. His general condition improved considerably, but he developed rheumatic symptoms, for which he was admitted to the Lord Pontypridd Hospital. After a period there, he was discharged, with no permanent rheumatic defect, and was fit to return to an ordinary elementary school.

"The following table shows the average increase in height and weight of the remaining 61 children during the period throughout which they attended the school :—

Average period in School (Months)	Number of Children in Group	Average Age (Years)	Average gain in Weight (Pounds)	Average gain in Height (Inches)
5	1	11·08	2·00	0·00
9	11	12·50	5·00	1·47
12	18	10·50	5·47	1·85
16	22	12·04	8·85	2·99
21	9	10·89	7·97	3·17

"No child lost weight during attendance at the school.

"The measurement of hæmoglobin content by Von Fleischel's method was carried out by Dr. N. K. Gibbs on admission and on discharge. As in the preceding year, the results of these examinations were found not always to correlate with the clinical findings. The average increase or decrease in the hæmoglobin content,

expressed as a percentage of the normal, in the 51 cases in which readings were obtained is given in the following table :—

Average period in School (Months)	Number of Children in Group	Average increase in Hæmoglobin (Percentage)	Average decrease in Hæmoglobin (Percentage)
9	8	Nil	17·5
12	15	Nil	1·5
16	19	3·05	Nil
21	9	5·25	Nil

" It is interesting to note that the children in the 9 months and 12 months groups showed an average decrease in the hæmoglobin content, while those children who stayed for the longer periods of 16 or 21 months showed an increase. The actual number of children (28) who showed a decrease in hæmoglobin content or whose hæmoglobin content remained stationary during the period of observation is given as follows :—

Average period in School (Months)	Number of Children in Group	Number showing decrease or no gain in Hæmoglobin content	Percentage
9	8	8	100·0
12	15	8	53·3
16	19	9	47·3
21	9	3	33·3

" Although the numbers are small, this table again suggests that an increase in the hæmoglobin content is more likely to occur after the longer periods of open-air treatment than after the shorter. It is interesting to note that not one of the eight children in the short nine-month period showed an increase in hæmoglobin content. On the other hand, these eight children all improved considerably from the clinical standpoint, the average increase in weight and height being 5·81 pounds and 1·53 inches respectively.

" An interesting piece of research work was carried out at the school by Dr. N. K. Gibbs on the effects of the administration of iron tonics on the hæmoglobin content. A full description of this work was published in *The Lancet*, 14th September, 1929.

" Fifty-six children were assessed scholastically and intellectually on admission, and again immediately prior to their return to an elementary school. The results are given in the following table :—

Average period in School (Months)	Number of Children in Group	Average Age (Years)	Average Progress (Months)			
			Reading	Spelling	Arithmetic	Intellectual tests (Binet-Simon)
5	1	11·08	+ 6·0	+ 3·0	— 6·0	± 0·0
9	10	12·37	+ 6·0	+ 6·3	+ 1·5	+ 3·6
12	17	10·40	+ 8·4	+ 2·1	+ 7·4	+ 9·5
16	20	11·90	+ 9·1	+ 2·1	+ 2·7	+ 6·1
21	8	10·99	+19·9	+ 14·6	+ 11·2	+12·3

" As in the preceding year, the average progress generally was subnormal. Reading and general intelligence (as measured by Binet-Simon tests) showed a more marked advance than spelling and arithmetic.

"In comparing the educational progress made by children in an open-air school with that made by children in an elementary school several factors must be borne in mind. In the former case illness in the past has caused in many cases much loss of schooling. Many of the children are thus backward on admission to the school, and, in addition, a number are dull.

"Eight of the 56 children were definitely dull and backward, and it is probable that another child will be certified in the near future as ineducable in an ordinary elementary school.

"Even more important, however, is the fact that all the children on admission to the school are suffering from some more or less marked physical defect. It is hardly to be expected, therefore, that the subnormal, physically defective children should show an educational advance equal to that of the normal, fit children. Only by the elimination of the physical defect would the two groups become comparable. A fairer idea, therefore, of the effect of an open-air school life on mental development would be to compare the advance made in the ordinary elementary schools over a period by a number of these children after discharge from the Open-Air School with that made by a similar number of fit, elementary school children over the same period. So far no actual figures are available for such a comparison. It is a significant fact, however, that in those cases in which inquiries have been made the discharged children have been able to keep abreast with their normal elementary school class-mates. Several of the Open-Air School 'leavers' have now reached Standard VII. in the schools to which they have returned.

"It will be noted that the eight children who remained in the school for 21 months seemed to have shown an advance, both scholastically and intellectually, out of proportion to the other groups. This may be due to two factors: firstly, these children were individually intelligent on admission, their intelligence quotient being in no case less than 90 per cent., and, secondly, the longer period at school, with its consequent improvement in the children's physical condition, may have permitted them to derive the maximum benefit from the instruction provided.

"The average attendance during the year was 81 per cent. Considering the fact that this is a school for physically defective children and situated far from the homes of many of the scholars, the attendance would seem to compare favourably with that of many elementary schools.

"Children discharged from the Open-Air School are examined periodically at a special clinic held for the purpose. In addition, on the return of a child to an elementary school, a special report is sent to the Head Teacher of the school concerned. This report indicates the progress made by the child at the Open-Air School, and also details any special recommendations which it is considered advisable should be carried out for the further benefit of the child's health.

"Of the 'leavers' for the year 1929 who have been re-examined or about whom inquiries have been made, all are apparently continuing well.

"During the year certain tests of physiological fitness have been applied to children at the Open-Air School, with a view to supplementing the findings of clinical examination. With the Flack and Woolham tests as a basis, and with the co-operation of the Physiological Department of the Welsh National School of Medicine, it is hoped that modified tests of physiological fitness will be obtained. Such tests, when considered in conjunction with medical findings, would be of great help, not only in the choice of children for admission to the school, but also in the accurate measurement of the benefits derived from a period there."

Nursery Schools.—The question of the provision of nursery schools was under consideration during the year, and in accordance with an instruction of the Education Committee a report on the matter was prepared in November, 1929. The salient points of this report are given in the following summary:—

1. The accommodation provided in ordinary infant schools is unsuitable for "toddlers."
2. The teachers and staff should be specially trained and engaged for looking after children under 5 years, and especially from 2 to 4 years.

3. The present accommodation, such as it is, will probably cease to be available in 1931, when the age of leaving school is raised.
4. The nursery school is not the only welfare organisation which exists or has been proposed for "toddlers."
5. If it is proposed to provide a nursery school or schools, the most urgent need appears to be in Central, Adamsdown, Splott and Grangetown wards.
6. The whole question of the care of children under 5 years is one which should not be dealt with piece-meal by Committees working under different Acts, but ought to be the subject of negotiation and agreement between the Education and Maternity and Child Welfare Committees.

The Committee have approved in principle the provision of nursery schools and nursery classes, and the question of a suitable site for a nursery school is now under consideration.

Mentally Defective Children.—The number of known mentally defective children of special school age (7-16 years) at 31st December, 1929, who were not transferable to the Mental Deficiency Authority, was 125, of whom 107 were in attendance at the special day school.

During the year, 88 children were specially examined or re-examined for suspected mental deficiency. Of these, 3 were regarded as normal, 3 were found to be merely dull, 30 were found to be dull and backward, 33 were certified as feebleminded and suitable for education in a special school, 2 were suffering from epilepsy, and 17 (1 feebleminded, 15 imbeciles and 1 idiot) were transferred to the care of the Mental Deficiency Authority. In addition to the 17 cases mentioned, 19 feebleminded children formerly attending the special day school were notified to the Mental Deficiency Authority.

The following is a classification, in a form prescribed by the Board of Education, of the 36 cases notified during 1929 to the Mental Deficiency Authority :—

Diagnosis	Boys	Girls	Totals
1. (i) Children incapable of receiving benefit or further benefit from instruction in a Special School :—			
(*a*) Idiots	1	...	1
(*b*) Imbeciles	9	6	15
(*c*) Others	1	...	1
(ii) Children unable to be instructed in a Special School without detriment to the interests of other children :—			
(*a*) Moral defectives	...	...	...
(*b*) Others	...	...	...
2. Feebleminded children notified on leaving a Special School on or before attaining the age of 16	11	8	19
3. Feebleminded children notified under Article 3 of the 1928 Regulations, *i.e.*, "special circumstances" cases	...	...	...
4. Children who in addition to being mentally defective were blind or deaf	...	...	...
Totals	22	14	36

The numbers of children of special school age known to be mentally defective at 31st December, 1929, whether under the Education Authority or the Mental Deficiency Authority were as follows :—

Diagnosis	Education Authority Cases				Mental Deficiency Authority Cases		Totals
	Attending Special Day School	In Special Residential Schools	Not attending Special School	Attending Elementary Schools	In Institutions or under Guardianship	Under Supervision at Home	
Feebleminded ...	107	5	13*	...	2	11	138
Imbeciles... ...	...	...	...	...	16	45	61
Idiots	...	...	...	...	2	18	20
Unclassified ...	...	...	...	...	...	3	3
Totals ...	107	5	13*	...	20	77	222

* Eight attending private schools and 5 absent from the Special School pending arrangements for their admission or because of illness or physical defect.

Blind Children.—The number of blind children of special school age in Cardiff at the end of the year was 10, all of whom were in attendance at the School for Children with Defective Sight.

Partially Blind Children.—The number of school children of special school age suitable for training in a school or class for the partially blind at the end of 1929 was 67. Forty-five of these were attending the School for Children with Defective Sight, where special provision has been made for the education of partially blind children. Of the 45 children attending the special classes, 15 suffer from myopia, the remaining 30 having other forms of defective vision. Of the 22 partially blind children not attending the special classes, 17 suffer from myopia and 5 from other defects of vision.

Deaf Children.—The number of deaf children of special school age at the end of the year was 22, 19 of them being in attendance at the Oral School for Deaf Children.

Partially Deaf Children.—Fifteen children attending ordinary elementary schools who might be suitable for training in a school or class for the partially deaf were known to the Department at the end of the year.

Stammerers.—The number of school children known to the Department as stammerers at 31st December, 1929, was 439 (347 boys and 92 girls). The special classes for the cure of stammering, which were inaugurated in September, 1927, have again been conducted successfully. The children in attendance are divided into five classes, each class meeting for one hour a day on two days a week. To the end of 1929, 143 children (130 boys and 13 girls) had attended the classes for varying periods. A report on the work of the classes by Miss Rosser, the instructress, is given below.

Report by Miss Hester Rosser, Instructress of the Special Classes for Stammerers.

"From January to December, 1929, 80 children attended the classes, 40 of whom were discharged for the following reasons :—

	Duration of Attendance in Terms					Totals
	6	4	3	2	1 or less	
Provisionally cured	...	9	7	2	...	18
Very much improved	3	2	6	...	...	11
Slightly improved	1	1	1	...	...	3
Unsuitable for further instruction	1	...	3	...	...	4
Withdrawn by parents	...	1	...	1	2	4
Totals	5	13	17	3	2	40

" Of the four children withdrawn, two were classed as *very much improved* and two as *slightly improved*. In a recent report by a head teacher on one of the latter children it is stated that he has *much improved*, so obviously he is making an effort to cure the defect himself.

" From the following summary of head teachers' reports on children who have left the classes but who were still attending school at the time the reports were made, it will be seen that the majority maintained a good standard :—

	July, 1929.	December, 1929.
Cured	—	8
Almost cured	—	3
Very much improved	16	20
Slightly improved	5	12
Not improved	1	4
Slightly relapsed	1	—
Considerably relapsed	4	—
Totals	27	47

" It should be remembered that a heading *provisionally cured* is not provided on the head teachers' report form, and, except in very few cases, it is almost impossible to say a child is *cured* after so short a period. But it is encouraging to note that in the later reports there are several cases where a *cure* is recognised. Occasionally it is possible to visit these children at school and such visits confirm the good impression made by the terminal reports.

" Two boys who attended the classes from September, 1927, to July, 1928, have been re-admitted for a short period. It is interesting to note that two boys who made very little progress while attending the classes made rapid progress after leaving ; one of these was 9 years old and the other 16 years, the latter having left school.

" Attendance has been satisfactory generally. In the summer term, however, a number of absences occurred in two of the classes for no apparent reason, and towards the end of the year, during a period of heavy rainfall, there was naturally a falling off in attendance. At the beginning of the autumn term, owing to the transference of the classes from Howard Gardens Municipal Secondary School to St. John's National Boys' School, it took longer than usual to start the classes, but the task was greatly facilitated by the assistance kindly rendered by the Head Teacher of the latter school. Now that everyone concerned is accustomed to the change, the new room, being more centrally situated, is, if anything, more convenient than the one previously used.

" Every effort is made, with moderately successful results, to persuade parents not to withdraw children from the classes without an adequate reason.

" On the whole the children have worked well. One class, however, seems to progress more slowly than the others, and it appears that the majority of boys in it are lacking the power of making independent effort and of concentration, though not in intelligence. Some method is still being sought which will best suit their needs. It may be mentioned that many of them attended the *mixed* class for two terms and were probably responsible for the slow rate of progress in that class, for the experiment of having a class entirely for girls has proved most successful. The girls have been very enthusiastic and they have the best attendance of the five classes.

" In May visits were made to the homes of 12 boys who have left school and in November three more were visited. It seems that attendance at the classes has been of great value in most of the 15 cases. Only three had relapsed to any considerable extent, and one of these had attended for a little over one term only. Ten promise to be completely cured. All except one are in employment, and with regard to this boy, it appears that he does not wish to be cured so long as he is kept by his parents ; although he speaks well at home, he stammers whenever he

is interviewed for a post. Of the 14 boys who are in employment, four are doing clerical work, three are apprenticed to a cinema operator, an optician and an upholsterer respectively, one is a wireless improver, one a chemist's assistant, one a travelling salesman, one a plumber's boy, one an errand boy and two are van boys. Such visits of inquiry as these are considered to be an essential part of the work and are made, if possible, a year after the children have left school and are to be repeated two years later."

Communicable Diseases.

The numbers of school children notified during the year as suffering from various communicable diseases were as follows :—

Smallpox	3
Scarlet Fever	426
Diphtheria	464
Enteric Fever	5
Pneumonia	44
Acute Poliomyelitis	1
Erysipelas	4
Tuberculosis—Respiratory	17
,, Other Forms	31
Chickenpox	688

The following cases of non-notifiable communicable diseases were intimated by head teachers or school attendance officers, or were otherwise ascertained :—

Measles	1,090
Whooping Cough	178
Mumps	440

Vaccinal State of the School Population.—The following table shows the vaccinal state of 12,437 children and young persons (elementary, secondary and high schools) inspected during 1929. The proportion vaccinated was 56·4 per cent., compared with 60·9 in 1928. During recent years the highest proportion of all children inspected at routine inspections found to be vaccinated was 66·5 per cent. in 1924.

Age—Years	Vaccinated	Unvaccinated	Totals	Percentage Vaccinated
3	194	143	337	57·6
4	683	788	1,471	46·4
5	1,274	1,032	2,306	55·2
6	565	545	1,110	50·9
7	118	125	243	48·5
8	124	81	205	60·5
9	1,727	1,261	2,988	57·8
10	148	94	242	61·1
11	96	64	160	60·0
12	1,192	766	1,958	60·9
13	726	421	1,147	63·3
14	24	12	36	66·6
15	55	27	82	67·1
16	54	36	90	60·0
17	20	21	41	48·8
18	16	2	18	88·9
19	1	2	3	33·3
Totals ...	7,017	5,420	12,437	56·4

"Following up" and the Work of School Nurses.

Following Up.—The number of new cases visited by the school nurses was 3,758, and the total number of visits made was 5,315, which were distributed as follows :—

	First Visits	Revisits	Totals
Defects of Vision	661	269	930
„ „ Teeth	672	197	869
„ „ Ear, Nose and Throat	788	301	1,089
Other Defects	1,637	790	2,427
Totals	3,758	1,557	5,315

Cleanliness Surveys.—The nurses paid 325 special visits to schools, making 42,199 examinations of children for uncleanliness. The number of children found to be harbouring vermin was 142, and 2,121 were found to have nits only. The number of children previously found unclean who were re-examined was 1,497; of these, 88 were found to be free from vermin and 421 to be free from vermin and nits. The proportion found to be verminous was 0·3 per cent., as compared with 1·2 per cent. in 1928. The improvement in the cleanliness of children's heads during recent years is highly satisfactory, the proportion found to be verminous in 1929 being the lowest recorded. Since 1924 the proportion found in a verminous condition has dropped from 3·8 per cent. to 0·3 per cent.

Other Work of School Nurses.—The school nurses have, as usual, rendered useful service in assisting medical officers at routine and special inspections and in carrying out their school clinic duties, which comprise the treatment of minor ailments, assisting medical officers at the special clinics for the treatment of ear, nose and throat diseases, defective vision, and in the X-ray treatment of ringworm. Nursing assistance has also been rendered to the school dentists during the treatment of children under anæsthetics. In certain instances the nurses have themselves cleansed verminous children and children suffering from scabies at the Cleansing Station, and during 1929 the number of individual children dealt with in this way was 56, the number of baths given being 97.

Medical Treatment, Etc.

Arrangements have been made for medical and other treatment of school children at school clinics as follows :—

(i) Treatment of minor ailments.
(ii) X-ray treatment of ringworm of the scalp.
(iii) Zinc ionisation for otorrhœa.
(iv) Operative treatment of nose and throat defects.
(v) Correction of errors of refraction.
(vi) Orthopædic treatment.
(vii) Dental treatment.

Minor Ailments.—Table IV, Group I, in the Appendix, gives details of the treatment of minor ailments (skin diseases, minor eye and ear defects, etc.), from which it will be seen that altogether 1,408 such defects were treated at the school clinics, as compared with 1,347 in 1928.

The nurses of the Queen's Institute of District Nursing have, as usual, rendered valuable assistance in the treatment of minor ailments. One hundred and twenty-

one cases were referred to them for treatment, and they paid 2,223 visits to the homes of children to administer treatment. Details of this work are given below :—

Disease or Defect	Cases Carried over from 1928		Cases Referred for Treatment during 1929		Totals	
	Cases	Visits	Cases	Visits	Cases	Visits
Skin :—						
Ringworm	...	...	2	80	2	80
Impetigo	1	10	43	575	44	585
Other Skin Diseases	...	...	12	155	12	155
Minor Eye Defects	2	120	8	601	10	721
Minor Ear Defects	...	...	1	19	1	19
Miscellaneous	...	...	55	663	55	663
Totals	3	130	121	2,093	124	2,223

First-Aid Outfits.—To enable teachers to render first aid in the many minor accidents which occur at schools, first-aid outfits in metal boxes are provided, and new supplies of dressings, etc., required to replenish the outfits are supplied by the Department on the application of head teachers.

Ringworm.—One hundred and forty-five cases of ringworm were treated by or under the supervision of the medical staff of the Department. Of this number 71 were cases of ringworm of the scalp, 44 of whom were treated by X-rays. The treatment of ringworm of the scalp by X-rays is undertaken by Dr. Anderson, by whom the following notes have been made :—

Notes by Dr. C. W. Anderson on X-ray Treatment of Ringworm of the Scalp.

" During 1929, 44 cases of ringworm of the scalp received treatment by X-rays. A complete cure, with no untoward symptoms and followed by a good growth of healthy hair, was obtained in 39 cases. No recurrence of the disease has been noted in these cases. In the remaining five cases the results were less satisfactory. A note on each of these cases may be of interest.

" *Case I.*—F. R., aged 6 years. Extensive ringworm of the whole scalp. Although this child was given an X-ray dose equal to that given to another case treated satisfactorily on the same morning, epilation was incomplete and infection persisted.

" *Case II.*—J. W., age 8 years. Large ringworm of anterior fontanelle region, with several smaller infected areas throughout scalp. Twenty-six days after irradiation of the whole scalp, epilation of vertex was incomplete, and the head was very irritable. As a result of the subsequent scratching, numerous pustules developed on the scalp. This condition was cured by boracic acid fomentations, and the child was free from infection 47 days after irradiation. Complete new growth of hair followed, and there has been no recurrence of the disease.

" *Case III.*—B. B., age 7 years. Large ringworm of right parietal region, with several small areas in other regions of scalp. Child showed healed scars of lupus on face and suppurative cervical adenitis. Twenty-six days after irradiation epilation of scalp was satisfactory, but a slight discharge issued from the old scar in neck. This healed up in seven days, and there has been no recurrence.

" *Case IV.*—A. H., age 5 years. A coloured child. Diffuse ringworm of whole scalp. Thirty-one days after irradiation scalp became very irritable. Numerous excoriations and pustules then appeared. Three days later the scalp became very inflamed, and auto-inoculation of neck and back occurred. Eight days later the condition of the head had improved, but the trunk and limbs showed a dry, rough, macular dermatitis. Double otorrhœa followed in two days, but the rash on the

trunk had improved and desquamation had commenced. Two weeks later all abnormal signs had disappeared, and the child returned to school. Complete new growth of hair, with no evidence of ringworm infection, followed. Another child treated on the same day with the same dose of X-rays showed no untoward results.

"*Case V.*—E. R., age 8 years. Very extensive ringworm of whole of scalp. Numerous infected areas on trunk also present. Whole head irradiated. In 26 days epilation was almost complete, but the head was dry and scaly. Two weeks later epilation was complete and no ringworm infection was present, although the scalp was still very dry. The child returned to school, but at the end of a month he again attended the clinic suffering from very extensive impetigo of scalp and fingers. The condition was cured with hot fomentations, and complete new growth of healthy hair followed. Another child, who received a similar dose of X-rays on the same morning, was cured, with no untoward results.

"From this series of cases it would appear that the same dose of X-rays applied to different persons under apparently the same conditions may give different results. In the majority of cases complete epilation, followed by the growth of healthy hair, may be expected. On the other hand, a few cases may show either incomplete epilation or excessive inflammatory reaction, with subsequent secondary infection.

"The average period of exclusion from school after X-ray treatment of the 43 cases in which a cure was obtained was found to be 27 days. Details of the exclusion period in the series of cases are given in the following table :—

Number of days of exclusion from school after X-ray treatment	Number of Cases	Percentage
15 — 20	4	9·30
21 — 25	...	...
26 — 30	31	72·10
31 — 35	3	6·98
36 — 40	1	2·32
Above 40	4	9·30
Total ...	43	100

"Partial treatment was carried out in 14 of the cases. All were cured and no re-infection was observed. The ages of the patients treated have varied from 4 to 14 years."

Radiography.—In addition to the treatment of ringworm of the scalp, the X-ray apparatus is used for radiography, which is of great assistance to the several medical officers and dentists in connection with the work of the clinics with which they are concerned. The X-ray apparatus is used both for school children and for cases referred from the maternity and child welfare centres, the cost being apportioned between the two services. A note on the radiographical work done during the year is given below :—

Note by Dr. C. W. Anderson on General and Dental Radiography.

"Cases for radiography are referred from all branches of the school medical and maternity and child welfare services. Since the opening of the artificial light clinic, a marked increase in the number of cases from the maternity and child welfare centres has been noted. Eighty cases have been referred from this source during the year, as compared with 39 for the year 1928. The number of cases referred from the school medical service was 63, thus making a total of 143 individual cases.

"The number of actual radiograms taken was considerably in excess of this number, owing to the fact that cases may be referred for X-ray examination of more than one defect. In addition, cases were frequently referred for a second examination after treatment of the defect had been carried out, *e.g.*, cases of rickets

after a course of artificial light treatment. Altogether, 208 radiograms were taken during the year.

"The following table gives in detail the sources from which the cases were referred, and also the parts requiring an X-ray examination :—

	School Medical Service Cases	Maternity and Child Welfare Cases	Totals
Teeth	5	...	5
Chest	3	2	5
Spine	12	3	15
Shoulder	3	5	8
Arm	2	1	3
Elbow	3	...	3
Wrist	2	51	53
Hand	2	5	7
Hip	15	6	21
Thigh	2	...	2
Knee	2	2	4
Leg	9	2	11
Foot	12	9	21
Totals	72	86	158

"One session a week is devoted to radiography, and an average of five patients attend per session."

Visual Defects.—The record of treatment of visual defects is shown in Table IV, Group II (*a*) and (*b*), in the Appendix. Altogether, 1,658 children were dealt with at the clinics, of whom 1,378 required examination for errors of refraction. The examination of 1,230 was completed during the year, spectacles being prescribed in 1,126 instances, and by the end of the year 1,060 children were known to have obtained them. The number of children examined for defects other than errors of refraction was 178, and appropriate treatment was given in each case. In addition, 41 children examined for errors of refraction were also treated for other eye defects.

The following table, prepared by Dr. Sheasby, showing the visual diseases and defects found in children treated at the special clinic, amplifies the information given in the tables contained in the Appendix :—

Diseases or Defects	Boys	Girls	Totals
Squint	79	127	206
Errors of refraction—			
Hypermetropia	176	219	395
Myopia	54	68	122
Astigmatism—			
Hypermetropic	175	249	424
Myopic	61	90	151
Mixed	44	64	108
Conjunctivitis	28	47	75
Phlyctenular conjunctivitis	10	7	17
Blepharitis	41	41	82
Cataract—			
Congenital	3	3	6
Traumatic	...	1	1
Optic neuritis and choroditis	...	1	1
Keratitis	8	6	14
Nebulæ	13	13	26
Leucoma adhærens	1	2	3
Corneal ulcer	1	7	8
Nystagmus	5	4	9

Diseases or Defects	Boys	Girls	Totals
Gonorrhœal ophthalmia	...	1	1
Injury to eye	...	2	2
Meibomian cyst	...	5	5
Cellulitis of eyelid	3	5	8
Iritis	...	1	1
Colomboma	1	...	1
Ptosis	...	1	1
Congenital absence of rectus muscle	1	...	1
Totals	704	964	1,668

Ear, Nose and Throat Defects.—Particulars of operative and other forms of treatment of ear, nose and throat defects carried out at the clinics are given in the Appendix, Table IV, Group III (*a*) and (*b*), from which it will be seen that 1,368 nose and throat cases were examined, and that 686 received operative treatment, 41 operative and other forms of treatment, and 423 other forms of treatment only. The number of cases of serious ear defects dealt with was 282, of whom 248 received appropriate treatment.

The following tables show the results of the treatment of otorrhœa by zinc ionisation and with hydrogen peroxide, the latter form of treatment being used in early cases only :—

(*a*) Otorrhœa of Both Ears :—

	Ionisation			Hydrogen Peroxide		
	Boys	Girls	Totals	Boys	Girls	Totals
Cured	6	3	9	...	1	1
One ear cured ; other ear no change	1	...	1	...	...	...
No change	1	2	3	1	...	1
Totals	8	5	13	1	1	2

(*b*) Otorrhœa of One Ear :—

	Ionisation			Hydrogen Peroxide		
	Boys	Girls	Totals	Boys	Girls	Totals
Cured	27	19	46	4	8	12
Much improved	4	1	5	1	...	1
No change	8	5	13	1	...	1
Still under treatment	1	2	3	...	...	...
Totals	40	27	67	6	8	14

Crippling Defects and Orthopædics.—The number of non-tuberculous crippled children of school age known to the Department at the end of the year was 268. Of these, 252 were attending elementary schools, 2 were at residential schools, while 14 were at no school or institution.

The following is a summary of the work carried out at the orthopædic clinic during 1929 :—

	Children of School Age.
Consultation Clinic :—	
Examined for the first time	319
Recommended for treatment for first time	261
Previously treated, recommended for additional treatment	114
Recommendations for :—	
Treatment in Hospital	50
Treatment at Clinic (Special and Routine)	178
Appliances	29
Alterations to appliances	7
Special boots	3
Alterations to boots	69
Other forms of treatment	47
Treated at Clinic for first time	4
Attendances at Clinic	890
Routine treatment (massage, electricity, exercises, etc.) :—	
Treated at Clinic for first time	85
Attendances for routine treatment ...	2,937

The following statement relates to treatment at and provision of appliances, etc., through the Prince of Wales' Hospital, Cardiff, during 1929 :—

	Children of School Age.
Hospital treatment :—	
Admitted to Prince of Wales' Hospital—	
(*a*) Day cases	—
(*b*) Other cases	25
Under treatment at Prince of Wales' Hospital at end of 1929	1
On Prince of Wales' Hospital waiting list at end of 1929—	
(*a*) Day cases	1
(*b*) Other cases	30
Other treatment or provision (including appliances, etc., provided following hospital treatment)—	
Appliances provided	46
Appliances altered	13
Special boots provided	15
Alterations to boots	63
Other forms of treatment provided	1

The following report by Dr. Betenson deals with the work of the orthopædic scheme during 1929, as regards children both under and of school age. The clinic exists both for school children and for those under school age, the local education authority, of course, being responsible only for the cost of the former.

Report by Dr. W. F. W. Betenson on the Orthopædic Scheme.

" Notwithstanding the constant discharge of cases, the number of children on the orthopædic clinic records continues to increase, the number remaining at the end of 1929 being 1,015 (including children under and of school age), compared with 929 at the end of 1928 and 764 at the end of 1927.

"*New Cases.*—The new cases (excluding children referred to the clinic but found on examination to have no abnormality) attending for the first time during the year are classified in the following table :—

	Children under School Age				Children of School Age				Grand Totals
	Slight	Moderate	Severe	Totals	Slight	Moderate	Severe	Totals	
Poliomyelitis	1	...	...	1	9	5	...	14	15
Spastic Paralysis	1	1	1	3	...	...	1	1	4
Birth Palsy	...	...	1	1	2	1	...	3	4
Congenital Malformations ...	6	2	4	12	6	3	1	10	22
Trauma	2	...	...	2	5	4	...	9	11
Rickets	7	3	...	10	2	1	...	3	13
Tuberculosis—Non-active ...	1	...	...	1	2	...	1	3	4
Scoliosis	...	...	...	...	2	...	2	4	4
Tibial Curves	7	...	...	7	...	...	...	...	7
Defective Posture	...	...	...	...	107	14	5	126	126
Flat Feet	3	1	...	4	21	1	3	25	29
Others	12	3	1	16	31	5	...	36	52
Totals	40	10	7	57	187	34	13	234	291

"Of the 57 children under school age, 51 will probably be fit to attend ordinary schools, three will probably require to be educated in a special day school, and three, although difficult to classify as to future educability, will probably never be fit to attend even a special day or residential school. Of the 234 children of school age, all except two, who are quite unfit for any school, are fit to attend ordinary schools.

"The cases of infantile paralysis seen were all old cases who had not previously attended the clinic, and it is interesting to note that at the end of four years of the orthopædic scheme 14 new cases should be found who had not been reported to the clinic before. The other new cases correspond very much to those for 1928, except that separate classification of mouth-breathing and round-shoulder cases has been omitted. The former attended very badly when referred for treatment, and the latter are so bound up with postural defects that there is no need for them to be differentiated.

"The number of new cases of children under school age shows a decided drop —from 107 in 1928 to 57 in 1929. The decline has occurred principally in cases of rickets, congenital malformation and 'others.' Cases of rickets have no doubt been referred direct to the artificial light clinic, only those considered suitable for treatment by massage having been sent to the orthopædic clinic. Congenital malformations in children under school age have dropped from 20 in 1928 to 12 in 1929, but reference to previous reports shows that the numbers of new cases vary from year to year.

"*Cases Discharged.*—The following table shows the number of children discharged during 1929 and the reasons for their discharge :—

	Children under School Age	Children of School Age	Totals
Cured	23	34	57
Improved	7	20	27
Unlikely to benefit further	3	4	7
Left the district	2	5	7
Died	1	2	3
Over age	...	17	17
Other reasons	14	71	85
Totals	50	153	203

"It has been found necessary to discharge many cases, principally those of defective posture as improved and other cases for various reasons, since clinic time is limited and the lesser types of deformities can always be inspected on any future occasion when time permits. In a complete afternoon session not more than 18 to 20 cases, including the application of one or more plasters, can be seen. There are about 84 clinic sessions (exclusive of specialist clinics) in a year, so that for each of the existing cases to be seen only once in a year about 11 of them must be seen during each session. This permits only half the available time or less to be devoted to new cases and to those requiring repeated attention.

"*Attendances.*—The attendances at the specialist clinics during the year were as follows :—

Month	Children under School Age	Children of School Age	Totals
January	8	15	23
February	7	21	28
March	4	16	20
April	6	19	25
May	6	13	19
June	6	15	21
July	5	28	33
October	8	17	25
November	5	16	21
December	6	17	23
Totals	61	177	238

"No specialist clinics were held during August and September. The attendances at these clinics have been good, never more than three children failing to attend.

"With regard to attendances at the orthopædic clinic generally, it is worth while recording that since the commencement in November, 1925, only 173 cases have failed to attend when requested to do so. This is a very small number, averaging less than one per week, considering that many of these cases have been notified as defective posture—a defect which some parents refuse to recognise as existing. A most gratifying feature has been the excellent attendance of children under school age brought by their mothers for treatment.

"*Routine Treatment.*—The number of attendances for routine clinic treatment has risen during the year, the totals for children under school age being 982 and for children of school age 2,937, as compared with 811 and 2,548 respectively during 1928.

"During the year we were approached by the authorities of the Cardiff Royal Infirmary with a view to their massage students (studying for the diploma) gaining more experience in the physical deformities of young children at the orthopædic clinic, and arrangements were accordingly made for one student at a time to attend the clinic on five half-days a week for a fortnight. The results have been mutually successful ; the students have gained by seeing cases which they would have otherwise been denied and have been able to assist in the treatment of cases of scoliosis and talipes in their early stages ; and the clinic has been enabled to deal with an increased number of cases. The students have been of real value in the remedial exercise work. The plan has been for them to take the class under the supervision of the orthopædic nurse. It may be emphasised that a class of about ten young children certainly requires two teachers in the room to supervise and correct them in their work, and, in addition, the presence of the medical officer in charge is generally necessary to ensure the best work being done, especially during the boys' class.

"The provision of a radiant heat bath helped materially to increase the amount of treatment given. It has been of real service in improving the limb circulation in cases of poliomyelitis and thus lessening the tendency to chilblains. Radiant heat also appears to loosen the stiffness in spastic cases.

"The results of clinic treatment are set out in the following tables :—

Children under School Age.

	Cured	Much Improved	Some Improvement	No Improvement	Totals
Poliomyelitis	1	1	2	2	6
Spastic Cases	...	1	1	...	2
Talipes	5	1	...	1	7
Rickets	5	...	...	2	7
Tibial Curves	4	...	1	2	7
Others	3	5	5	6	19
Totals	18	8	9	13	48

Children of School Age.

	Cured	Much Improved	Some Improvement	No. Improvement	Totals
Poliomyelitis	...	3	7	6	16
Spastic Cases	...	1	3	1	5
Kypho-Lordosis, etc, ...	27	10	16	25	78
Scoliosis	2	5	...	2	9
Others	9	5	16	12	42
Totals	38	24	42	46	150

"*General.*—The X-ray films of cases made by the Department for submission to the visiting specialist surgeon have been very satisfactory. The value of this work cannot be over emphasised, since the only alternative is to send cases to the Prince of Wales' Hospital for X-ray at a charge of 10/6 a case.

"Coincident treatment with the artificial light clinic has worked well, though it has meant a great rush of cases on Friday afternoons which has taxed the present inadequate accommodation to an uncomfortably high degree. It happens that in order to get in three attendances for treatment per week at suitable intervals for children under school age, this particular afternoon is necessary for orthopædic treatment whether the patients are receiving light treatment or not.

"The value of having a trained orthopædic nurse has clearly demonstrated itself during the year as well as previously. The ability of the nurse to detect a case which is not progressing as it should do under treatment instead of continuing the treatment (massage, etc.) in an automatic and routine way is necessary, and much help in this way has been given to the medical officer, who is unable always to see the cases under treatment.

"*Special Investigation.*—In the report for 1928 a brief note was made on the value of an orthopædic clinic as a means of gauging the real extent of an epidemic of poliomyelitis, such as occurred in Cardiff in 1923. With that end in view, all cases of poliomyelitis seen at the clinic have been closely questioned on the following points :—

(1) Actual date of attack or age of child at onset.
(2) Address at onset of attack.

Many parents could not give the actual date of onset, though they knew the year when the child was attacked. The address at onset presented but little difficulty.

" The total number of cases known to the clinic is 170, of whom 94 are males and 76 females. Of these, 115 are known to have been attacked in Cardiff, and in the following table the number actually attacked is compared with the number of notifications received in respect of the cases under consideration :—

Period	Cases attacked in Cardiff	Cases (included in previous column) which were notified
Prior to 1921	22	...
1921	16	1
1922	6	...
1923	41	28
1924	15	13
1925	4	1
1926	4	...
1927	6	6
1928	1	1
Totals ...	115	50

" During the 1923 epidemic many of the cases were notified as the result of a searching investigation by a former member of the staff (Dr. H. L. Coulthard), but even then a third of the cases were missed, and if the Cardiff experience is general, one might say that in an epidemic almost two out of three cases are missed at the critical period of onset.

" In 109 of the 115 cases attacked in Cardiff the actual places of residence were ascertained, and these are classified according to municipal wards in the following table :—

Municipal Wards	Prior to 1921	1921	1922	1923	1924	1925	1926	1927	1928	Totals
Central	...	2	...	3	2	...	...	...	...	7
South	2	...	...	4	...	...	...	1	...	7
Cathays	1	2	...	4	1	...	1	...	...	9
Adamsdown	1	2	...	3	3	...	1	...	...	10
Riverside	3	1	...	2	1	...	...	1	...	8
Canton	4	1	1	...	...	1	...	...	...	7
Grangetown	5	1	...	10	2	...	...	...	...	18
Roath	1	1	...	3	2	...	...	...	...	7
Plasnewydd	2	1	...	1	1	...	...	...	...	5
Splott	2	1	2	5	2	2	2	...	...	16
Penylan	1	...	...	2	1	...	...	...	1	5
Llandaff	...	...	...	...	...	...	...	2	...	2
Gabalfa	...	1	1	3	...	1	...	2	...	8
Totals	22	13	4	40	15	4	4	6	1	109

" Of the total number of cases (170) known to the clinic, 163 have been most affected in the parts of the body mentioned in the table below, in which a comparison is made with certain figures given by Jones and Lovett of the effects of two epidemics of poliomyelitis in America during 1916, viz., in Massachusetts and in New York :—

Parts of Body principally affected	Cases—Cardiff	Percentage		
		Cardiff	Massachusetts	New York
Left Leg	60	36·8	21·0	25·9
Right leg	55	33·7		
Both legs	22	13·5	40·0	29·0
Left arm	8	4·9	5·7	7·1
Right arm	10	6·1		
Back also affected	6	3·7	...	...
Right arm and right leg	2	1·2	1·3	3·2

" The following is a classification of the severity of physical incapacity in relation to wage-earning capacity which was made in 158 of the cases :—

Classification.	Cases.
Very slight and recovered	32
Slight	62
Moderately severe	44
Severe	12
Very severe	8
Total	158 "

Dental Inspection and Treatment.—Details of dental inspection and treatment are given in the Appendix (Table IV, Group IV). The total number of children inspected by the dentists was 17,848, of whom 15,395 were found to require treatment. The number of new cases treated was 5,284, and 3,160 were re-treated as the result of periodical examination.

Provision of Meals.

The following statement of the meals given during each of the years 1921-9 has been kindly supplied by the Superintendent School Attendance Officer :—

	Number of Canteens	Number of Meals Supplied	Average Weekly Number of Meals	Average Weekly Number of Children fed
1921	13	594,411	11,655	1,148
1922	12	182,094	3,501	434
1923	8	35,700	686	144
1924	7	27,378	526	110
1925	7	52,960	1,018	169
1926	8	119,572	2,299	292
1927	8	143,633	2,762	316
1928	11	225,415	4,335	479
1929	12	362,392	6,969	755

Physical Education.

Miss Maud M. Brown, Chief Organiser of Physical Education, has submitted the following report on physical education in elementary schools during 1929 :—

" I beg to submit the following report on the work of physical education in the City of Cardiff primary schools.

" During 1929, 261 visits have been paid to girls', mixed, infants' and special schools, to swimming baths, playing fields and parks. Twenty-two teachers' classes have been held. Five special classes for teachers in connection with the preparation for the Cardiff Schools Musical Festival were also held, and 177 sessions have been given to the work of organisation.

" *Teachers' Classes.*—An infant teachers' course was held at Canton Municipal Secondary School during the spring term. Fifty-one teachers availed themselves of this opportunity and showed much enthusiasm during the course. A class in physical education for Junior Evening Institutes was held at Howard Gardens Municipal Secondary School during the summer term ; thirty-four names were on the register, and these included club leaders as well as teachers in Junior Evening Institutes.

" *Cardiff Schools Musical Festival.*—The first Cardiff Schools Musical Festival was held at the Drill Hall, Dumfries Place, on Saturday afternoon and evening, 11th May. This was a most successful event, and all those who trained the children and helped with the organisation are to be heartily congratulated. The girls'

schools who took part in the folk dance items were :—Adamsdown C., Allensbank C., Gladstone C., Viriamu Jones C., St. Alban's R.C., St. David's R.C., and St. Patrick's R.C. The infants' schools who played nursery rhymes and danced baby dances were drawn from the following schools :—Ely C., Marlborough Road C., South Church Street C., Llandaff C. of E., Llanishen C. of E., St. Mary's Mission N., St. David's R.C. and St. Joseph's R.C. These items were received with much enthusiasm and appreciation by the large and representative audiences.

" *Net Ball Competition.*—The second net ball competition matches were held between Easter and Whitsun in Sophia Gardens Field. Nine teams entered the competition, and the standard of play was much higher than that of the first year's competition. The result was as follows :—

Adamsdown C. (A.)	9	points.
Adamsdown C. (B.)	12	,,
Crwys Road C.	–	,,
Gladstone C.	2	,,
Herbert Thompson C.	14	,,
Llandaff C.	6	,,
Viriamu Jones C.	5	,,
St. Patrick's R.C.	8	,,
Maindy C.	16	,,

" The final match was played on 11th June, when Herbert Thompson C. Girls' School won, gaining 24 goals. The runners-up (Maindy C. Girls' School) scored 18 goals. It was an excellent match and closely contested. It took the form of an exhibition game and was watched by a number of teachers and by girls' teams.

" *Rounders Competition.*—Eleven teams entered the competition and the result was as follows :—

Adamsdown C.	12	points.
Allensbank C.	19	,,
Canton N. (A.)	8	,,
Canton N. (B.)	–	,,
Ely C.	10	,,
Herbert Thompson C.	10	,,
Llandaff C.	12	,,
Maindy C.	19	,,
St. Alban's R.C.	5	,,
St. Francis' R.C.	2	,,
St. John's N.	13	,,

The result of the final match was :—

1st innings	Allensbank C.	7	runs.
	Maindy C.	69	,,
2nd innings	Allensbank C.	27	runs.
	Maindy C.	27	,,

Maindy C. Girls' School are the holders for one year of the Frederick Evans challenge bowl. Allensbank C. Girls' School hold the picture of Peter Pan for one year.

" *Swimming.*—The third annual swimming gala was held at Splotlands Open-Air Bath on Monday and Tuesday, 22nd and 23rd July. Fifteen schools sent entries, the total entries being 840 ; 365 of these were girls who learned to swim during the year. The points gained by each school were :—

Adamsdown C.	71	points.
Allensbank C.	53	,,
Eleanor Street C.	21	,,
Grangetown C.	9	,,
Hawthorn C.	20	,,

Herbert Thompson C. (Beginners only)	...	39 points
Severn Road C.	12	,,
Splotlands C.	30	,,
St. David's R.C.	224	,,
St. John's N.	30	,,
St. Mary's N., Bute Terrace	21	,,
St. Peter's R.C.	14	,,
Tredegarville N.	42	,,

" Miss Rogers, Organiser of Physical Education to the Glamorgan Education Authority, acted as chief judge, and was impressed with the improvement in style of the girls' swimming. Misses Britton, Edgely, Mossford and Patterson assisted Miss Rogers in the judging.

" Arrangements for swimming lessons to be continued during the winter season at the Cardiff Corporation Baths were made, and a winter time-table was drawn up. Seventeen schools are taking advantage of these facilities.

" *Publication.*—Typed copies of fourteen girls' team events with diagrams and explanations have been supplied to each girls' and mixed school for the use of the upper classes. The team events are to be practised in the weekly organised games period during the year to form material for a field day in July, 1930.

" *Games Apparatus.*—One hundred and six footballs, ninety football bladders, and one hundred and ninety-six tennis balls, also nine sets of net ball posts, have been supplied to girls' and mixed schools. This apparatus for organised games is highly appreciated by the teachers and scholars."

Employment of Children and Young Persons.

During the year, 10 children (4 boys and 6 girls) who had left school were examined by medical officers of the Department at the request of the Juvenile Employment (Education) Officer and reports were sent for his guidance.

The following report relating to the employment of children of school age and young persons has kindly been supplied by the Juvenile Employment (Education) Officer, Mr. Ben Williams :—

" A child under the age of 12 years cannot now be legally employed. The approximate number of child employees under the old conditions was 2,000. They were from 10 years of age and upwards, and worked anything up to 36 hours a week, before, between and after school hours.

" The hawking of newspapers is illegal except for boys over the age of 15 years. Boys between 15 and 16 years need a licence for this work.

" Fifteen hours per week is the maximum number of hours which a child may be employed under the provisions of the Bye-Laws made under the Employment of Children Act, 1903, as amended by the Education Act, 1918, excepting in the delivery of milk and newspapers, where two hours employment is allowed on Sunday mornings, which makes a maximum of 17 hours per week for these two employments.

Ages of School Children Employed out of School Hours.

	12 years	13 years	14 years	Totals
Boys	50	282	34	366
Girls	...	...	...	...
Totals	50	282	34	366

Nature of Employment of School Children Employed out of School Hours.

Nature of Employment	Boys	Girls	Totals
Delivery of Bread	17	...	17
Delivery of Milk	10	...	10
Errands	218	...	218
Miscellaneous	121	...	121
Totals	366	...	366

Number of Hours of Employment per Week (including Saturday and Sunday) of School Children Employed out of School Hours.

Number of Hours per Week	Boys	Girls	Totals
1	...	...	...
2	4	...	4
3	1	...	1
4	4	...	4
5	15	...	15
6	...	...	...
7	6	...	6
8	...	...	...
9	...	...	...
10	2	...	2
11	...	...	...
12	41	...	41
13	43	...	43
14	56	...	56
15	165	...	165
16	16	...	16
17	13	...	13
Totals	366	...	366

"*Entertainment Section.*—The number of children licensed by the Education Committee and examined by medical officers of the School Medical Officer's Department during 1929, was 42, and 71 children visited Cardiff on licence from other areas."

Medical Examination of Teachers.

All teachers newly appointed under the Education Committee and other teachers sent for special reasons are examined by the medical staff, and appropriate reports are forwarded to the Director of Education. During the year, 32 teachers (17 males and 15 females) were examined.

APPENDIX.

YEAR ENDED 31ST DECEMBER, 1929.

TABLE I.

RETURN OF MEDICAL INSPECTIONS.

A.—ROUTINE MEDICAL INSPECTIONS.

	Elementary Schools			Secondary and High Schools		
	Boys	Girls	Totals	Boys	Girls	Totals
Entrants	2,704	2,784	5,488	...	...	...
Intermediates	1,465	1,880	3,345	...	...	...
Leavers	1,352	1,410	2,762	...	...	...
Other Routine Inspections ...	...	...	...	457	385	842
Totals	5,521	6,074	11,595	457	385	842

B.—SPECIAL INSPECTIONS.

		Elementary Schools			Secondary and High Schools		
		Boys	Girls	Totals	Boys	Girls	Totals
Special Inspections	At School ...	477	377	854	5	47	52
	At School Clinic	1,963	2,241	4,204	5	7	12
Totals		2,440	2,618	5,058	10	54	64
Re-inspections	At School ...	701	666	1,367	116	64	180
	At School Clinic	2,195	2,571	4,766	11	15	26
Totals		2,896	3,237	6,133	127	79	206

TABLE II.

A.—RETURN OF DEFECTS FOUND BY MEDICAL INSPECTION.

Disease or Defect	Routine Inspections				Special Inspections			
	Elementary Schools		Secondary and High Schools		Elementary Schools		Secondary and High Schools	
	Requiring Treatment	To be kept under Observation	Requiring Treatment	To be kept under Observation	Requiring Treatment	To be kept under Observation	Requiring Treatment	To be kept under Observation
Malnutrition	37	90	1	4	54	17	...	...
Uncleanliness	63	...	...	...	7	1	...	...
Skin :—								
Ringworm :—								
Scalp	8	...	...	...	71	...	...	...
Body	8	...	...	...	72	2	...	...
Scabies	15	...	2	...	95	...	...	...
Impetigo	41	...	...	...	628	...	...	...
Other Diseases (Non-Tuberculous) ...	43	3	1	...	259	11	1	2

TABLE II. A—continued.

Disease or Defect	Routine Inspections				Special Inspections			
	Elementary Schools		Secondary and High Schools		Elementary Schools		Secondary and High Schools	
	Requiring Treatment	To be kept under Observation	Requiring Treatment	To be kept under Observation	Requiring Treatment	To be kept under Observation	Requiring Treatment	To be kept under Observation
Eye :—								
Blepharitis	29	...	...	...	68	...	...	...
Conjunctivitis	4	...	...	...	25	1	1	...
Keratitis	2	...	...	...	...	...	...	...
Corneal Opacities ...	...	1	1	1	2	...	...	...
Defective Vision (excluding Squint) ...	514	124	74	6	336	17	8	2
Squint	70	5	1	...	50	...	...	...
Other Conditions ...	11	2	...	...	17	...	...	...
Ear :—								
Defective Hearing ...	42	8	3	...	47	3	...	...
Otitis Media	108	7	4	...	168	3	...	...
Other Ear Diseases ...	22	1	3	...	34	2	...	...
Nose and Throat :—								
Enlarged Tonsils only	436	419	21	26	352	44	...	...
Adenoids only	42	46	4	1	41	1	...	...
Enlarged Tonsils and Adenoids	130	24	4	...	117	1	1	...
Other Conditions ...	25	10	3	2	75	24	1	...
Enlarged Cervical Glands (Non-Tuberculous) ...	11	9	1	1	16	5	...	...
Defective Speech	11	12	1	...	14	3	...	...
Teeth :—								
Dental Diseases ...	1,375	...	139	...	266	...	...	...
Heart and Circulation :—								
Heart Disease :—								
Organic	6	20	...	...	2	13	...	...
Functional	...	73	...	5	...	15	...	4
Anæmia	15	20	1	...	43	10	...	...
Lungs :—								
Bronchitis	14	36	...	...	18	6	...	...
Other Non-Tuberculous Diseases	4	134	...	6	10	39	...	...
Tuberculosis :—								
Pulmonary :—								
Definite	...	...	...	...	...	...	...	...
Suspected	2	...	...	...	1	...	...	...
Non-Pulmonary :—								
Glands	1	...	...	...	2	...	...	...
Spine	...	...	...	...	...	...	...	...
Hip	...	...	...	...	...	1	...	...
Other Bones and Joints	1	...	...	...	...	...	...	...
Skin	...	...	...	...	...	...	...	...
Other Forms ...	...	2	...	1	...	...	...	...
Nervous System :—								
Epilepsy	...	4	...	...	4	4	...	...
Chorea	4	7	...	...	20	7	...	...
Other Conditions ...	...	3	...	...	...	3	...	...
Deformities :—								
Rickets	3	1	...	...	1	...	...	...
Spinal Curvature ...	9	...	2	...	2	...	...	...
Other Forms ...	152	70	15	6	41	...	...	...
Other Defects and Diseases	87	99	25	10	242	218	2	3

TABLE II.

B.—NUMBER OF INDIVIDUAL CHILDREN FOUND AT ROUTINE AND SPECIAL INSPECTION TO REQUIRE TREATMENT (EXCLUDING UNCLEANLINESS AND DENTAL DISEASES).

	Elementary Schools			Secondary and High Schools		
	Number of Children		Percentage of Children found to require treatment	Number of Children		Percentage of Children found to require treatment
	Inspected	Found to require treatment		Inspected	Found to require treatment	
Entrants	5,488	628	11·44	...	...	...
Intermediates ...	3,345	646	19·31	...	...	...
Leavers	2,762	463	16·76	...	...	...
Others	...	...	...	842	154	18·29
Totals	11,595	1,737	14·98	842	154	18·29
Specials... ...	5,058	2,675	52·89	64	15	23·44
Grand totals ...	16,603	4,412	26·57	906	169	18·65

TABLE II.

C.—ENTRANTS: DISEASES AND DEFECTS FOUND TO REQUIRE TREATMENT OR TO BE KEPT UNDER OBSERVATION.

Diseases or Defects referred for Treatment or Observation.	Diseases or Defects referred for Treatment or Observation.											
	Tuberculosis—Pulmonary	Tuberculosis—Non-Pulmonary	Heart Disease	Anæmia	Respiratory Diseases—Not Tuberculosis	Defective Vision	Ear Defects	Nose and Throat Defects	External Eye Diseases	Skin Diseases	Defective Teeth	Other Diseases and Defects
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)
(1) Tuberculosis—Pulmonary	...	...	...	...	...	...	...	...	...	...	...	...
(2) Tuberculosis—Non-Pulmonary	...	2	...	...	...	...	...	...	...	...	...	...
(3) Heart Disease	...	...	42	...	...	1	...	6	...	...	3	2
(4) Anæmia	...	...	...	21	1	...	...	6	...	...	2	4
(5) Respiratory Diseases (Not Tuberculosis) ...	...	...	...	...	124	...	1	12	...	...	20	6
(6) Defective Vision	...	...	...	...	...	33	...	4	...	...	4	3
(7) Ear Defects	...	...	...	...	...	...	69	11	1	2	6	4
(8) Nose and Throat Defects	...	...	...	...	...	...	...	605	5	6	108	37
(9) External Eye Diseases	...	...	...	...	...	...	...	...	65	3	7	4
(10) Skin Diseases	...	...	...	...	...	...	...	...	...	62	9	1
(11) Defective Teeth	...	...	...	...	...	...	...	...	...	...	571	33
(12) Other Diseases and Defects	...	...	...	...	...	...	...	...	...	...	...	187
Totals	...	2	42	21	125	34	70	644	71	73	730	281

Number examined: 5,488. Number found normal: 3,707. Number found defective: 1,781 (the sum of the first figures in the lines of the above table). Number of diseases or defects: 2,093 (the sum of the figures at the foot of the columns in the above table).

The following statement is given in explanation of the above table:—Forty-two children (shown in line 3, column 4) suffered from heart disease, and of that number 1 also suffered from defective vision, 6 from nose and throat defects, 3 from defective teeth and 2 from other diseases or defects. Each line should be read in the same way.

TABLE III.

RETURN OF ALL EXCEPTIONAL CHILDREN IN THE AREA.

			Boys	Girls	Totals
Blind (including partially blind).	(*i*) Suitable for training in a school or class for the totally blind.	Attending Certified Schools or Classes for the Blind	8	2	10*
		Attending Public Elementary Schools ...	–	–	–
		At other Institutions	–	–	–
		At no School or Institution	–	–	–
	(*ii*) Suitable for training in a school or class for the partially blind.	Attending Certified Schools or Classes for the Blind	22	23	45
		Attending Public Elementary Schools ...	7	11	18
		At other Institutions	–	–	–
		At no School or Institution	2	2	4
Deaf (including deaf and dumb and partially deaf).	(*i*) Suitable for training in a school or class for the totally deaf or deaf and dumb.	Attending Certified Schools or Classes for the Deaf	8	11	19†
		Attending Public Elementary Schools ...	–	–	–
		At other Institutions	–	1	1
		At no School or Institution	1	1	2
	(*ii*) Suitable for training in a school or class for the partially deaf.	Attending Certified Schools or Classes for the Deaf	–	–	–
		Attending Public Elementary Schools ...	11	4	15
		At other Institutions	–	–	–
		At no School or Institution	–	–	–
Mentally Defective.	Feebleminded (cases not notifiable to the Local Control Authority).	Attending Certified Schools for Mentally Defective Children	64	43	107
		Attending Public Elementary Schools ...	–	–	–
		At other Institutions	5	–	5
		At no School or Institution	7	6	13‡
	Notified to the Local Control Authority during the year.	Feebleminded	12	8	20
		Imbeciles	9	6	15
		Idiots	1	–	1
Epileptics.	Suffering from severe epilepsy.	Attending Certified Special Schools for Epileptics	2	2	4
		In Institutions other than Certified Special Schools	–	–	–
		Attending Public Elementary Schools ...	–	–	–
		At no School or Institution	1	6	7
	Suffering from epilepsy which is not severe.	Attending Public Elementary Schools ...	7	5	12
		At no School or Institution	–	–	–

* In addition 1 boy not residing in the area in attendance.

† In addition 4 boys and 2 girls not residing in the area in attendance.

‡ Including 3 boys and 5 girls attending private schools.

TABLE III.—continued.

			Boys	Girls	Totals
Physically Defective.	Infectious pulmonary and glandular tuberculosis.	At Sanatoria or Sanatorium Schools approved by the Ministry of Health or the Board	4	4	8
		At other Institutions	–	–	–
		At no School or Institution	2	3	5
	Non-infectious but active pulmonary and glandular tuberculosis.	At Sanatoria or Sanatorium Schools approved by the Ministry of Health or the Board	–	–	–
		At Certified Residential Open-Air Schools	–	–	–
		At Certified Day Open-Air Schools ...	–	–	–
		At Public Elementary Schools	24	15	39
		At other Institutions	–	–	–
		At no School or Institution	3	1	4
	Delicate children (*e.g.*, pre- or latent tuberculosis, malnutrition, debility anæmia, etc.).	At Certified Residential Open-Air Schools	–	–	–
		At Certified Day Open-Air Schools ...	79	60	139
		At Public Elementary Schools	84	70	154
		At other Institutions	–	1	1
		At no School or Institution	17	7	24
	Active non-pulmonary tuberculosis.	At Sanatoria or Hospital Schools approved by the Ministry of Health or the Board	6	3	9
		At Public Elementary Schools	19	14	33
		At other Institutions	–	–	–
		At no School or Institution	11	4	15
	Crippled children (other than those with active tuberculous disease) *e.g.*, children suffering from paralysis, etc., and including those with severe heart disease.	At Certified Hospital Schools	–	–	–
		At Certified Residential Cripple Schools ...	–	2	2
		At Certified Day Cripple Schools ...	–	–	–
		At Public Elementary Schools	173	190	363*
		At other Institutions	8	11	19
		At no School or Institution	33	30	63†

* Comprising :—	Boys	Girls	Totals
Cripples	135	117	252
Severe Heart Disease	38	73	111

† Comprising :—			
Cripples	8	6	14
Severe Heart Disease	17	13	30
Chorea	8	11	19

TABLE IV.

RETURN OF DEFECTS TREATED.

TREATMENT TABLE.

GROUP I.—Minor Ailments (excluding Uncleanliness, for which see Group V.)

Disease or Defect	Number of Defects Treated or under Treatment during the Year					
	Elementary Schools			Secondary and High Schools		
	Under the Authority's Scheme	Otherwise	Totals	Under the Authority's Scheme	Otherwise	Totals
SKIN :—						
Ringworm—Scalp ...	71	2	73	...	...	...
,, Body ...	74	1	75	...	...	...
Scabies	113	...	113	...	...	...
Impetigo	658	4	662	...	...	...
Other Skin Diseases ...	257	10	267	1	...	1
MINOR EYE DEFECTS (External and other but excluding cases falling in Group II.)	58	3	61	...	...	...
MINOR EAR DEFECTS ...	21	1	22	...	...	...
MISCELLANEOUS (*e.g.*, minor injuries, bruises, sores, chilblains, etc.)	154	14	168	1	1	2
Totals	1,406	35	1,441	2	1	3

GROUP II. (a)—Defective Vision and Squint (excluding Minor Eye Defects treated as Minor Ailments—Group I.).

	Number of Defects dealt with							
	Elementary Schools				Secondary and High Schools.			
	Under the Authority's Scheme	Submitted to Refraction by Private Practitioners or at Hospital	Otherwise	Totals	Under the Authority's Scheme	Submitted to Refraction by Private Practitioners or at Hospital	Otherwise	Totals
Errors of Refraction ...	1,129	2	4	1,135	101	4	6	111
Other Defect or Disease of the Eyes (excluding those recorded in Group I.)...	218	...	...	218	1	...	...	1
Totals ...	1,347	2	4	1,353	102	4	6	112

GROUP II. (a)—continued.

	Elementary Schools	Secondary and High Schools
Number of Children for whom Spectacles were prescribed :—		
(*a*) Under the Authority's Scheme	1,034	92
(*b*) Otherwise	6	10
Number of Children who obtained or received Spectacles :—		
(*a*) Under the Authority's Scheme	935*	75
(*b*) Otherwise	48	24

GROUP II. (b)—Additional Particulars with reference to the Treatment of Visual Defects.

	Elementary Schools	Secondary and High Schools
Examined at the Special School Clinic	1,537	121
(*a*) Examined for Errors of Refraction	1,268	110
(1) Examination completed	1,129	101
(2) For whom glasses were prescribed	1,034	92
(3) For whom glasses were provided :—		
(*a*) By parents	691	89
(*b*) With assistance of Local Authority	2	...
(*c*) Free of charge	278	...
(4) For whom glasses were not prescribed	95	9
(5) Examination not completed	12	4
(6) Failed to attend for completion of examination ...	127	5
(7) Other treatment required :—		
(*a*) Glasses also prescribed—included in (2) ...	26	...
(*b*) Not requiring glasses—included in (4) ...	15	...
(8) Received other treatment	41	...
(9) Old cases (1928) for whom glasses were provided in 1929 :—		
(*a*) By parents	4	...
(*b*) With assistance of Local Authority	...	...
(*c*) Free of charge	2	...
(*b*) Examined for Defects other than Errors of Refraction ...	177	1
(1) For whom treatment was recommended	177	1
(2) Received treatment	177	1
(3) For whom no treatment was considered necessary ...	...	...
(*c*) Found to be normal	92	10
(*d*) Number of attendances of Vision Cases at the School Clinic ...	3,633	291

* Including 2 at half cost and 280 free of charge.

GROUP III. (a)—Treatment of Defects of Nose and Throat.

	Elementary Schools	Secondary and High Schools
At Special School Clinic :—		
Examined	1,321	47
Received operative treatment...	672	14
Received operative and other forms of treatment ...	41	...
Received other forms of treatment only	408	15
Attendances	3,370	83
By Private Practitioners or at Hospital : —		
Received operative treatment...	1	1
Received operative and other forms of treatment ...	...	...
Received other forms of treatment only	4	...

GROUP III. (b)—Treatment of Serious Ear Defects.

	Elementary Schools	Secondary and High Schools
At Special School Clinic :—		
Examined	268	14
Received operative treatment...	...	...
Received operative and other forms of treatment ...	...	...
Received other forms of treatment only	235	13
Attendances	550	34
By Private Practitioners or at Hospital :—		
Received operative treatment...	...	...
Received operative and other forms of treatment ...	1	...
Received other forms of treatment only	1	1

GROUP IV.—Dental Defects.

	Elementary Schools	Secondary and High Schools
(1) Number of Children who were :—		
(*a*) Inspected by the Dentists :		
Routine Age Groups ... Aged : 4	225	...
5	1,735	..
6	1,990	..
7	2,189	...
8	2,231	...
9	2,101	...
10	1,533	...
11	1,273	...
12	1,188	...
13	1,095	...
14	548	...
Totals	16,108	...
Specials	1,060	680
Grand Totals	17,168	680
(*b*) Found to require treatment	14,731	664
(*c*) Actually treated	5,070	214
(*d*) Re-treated during the year	2,840	320
(2) Half-days devoted to :—		
Inspection	87	...
Treatment	1,280	...
Totals	1,367	...*
(3) Attendances made by children for :—		
Inspection	4,401	129
Treatment	12,901	974
Totals	17,302	1,103
(4) Fillings :—		
Permanent teeth	3,847	623
Temporary teeth	640	23
Totals	4,487	646
(5) Extractions :—		
Permanent teeth	2,938	335
Temporary teeth	15,580	95
Totals	18,518	430
(6) Administrations of general anæsthetics for extractions by :—		
Dentists	3,844	186
Medical Officers	2,343	36
Totals	6,187	222
(7) Other Operations :—		
Permanent teeth	1,335	330
Temporary teeth	184	4
Totals	1,519	334

Known treatment of dental defects by private dentists :—

	Elementary Schools	Secondary and High Schools
Children treated	36	65

* Not differentiated from half-days devoted to inspection and treatment of elementary school children.

GROUP V.—Uncleanliness and Verminous Conditions.

Elementary Schools.

(i)	Average number of visits per school made during the year by the school nurses		2·6
(ii)	Total number of examinations of children in the schools by school nurses		42,199
(iii)	Number of individual children found unclean :—		
	With vermin	142	
	With nits only	2,121	
		——	2 263
(iv)	Number of children cleansed under arrangements made by the Local Education Authority :—		
	Previously verminous	74	
	Previously with nits only	347	
	Previously verminous found to be free from vermin but not free from nits...	88	
		——	509*

GROUP VI.—Known Treatment of other Defects.

Disease or Defect	Defects treated.		
	by Private Practitioners, at Hospital, or Tuberculosis Dispensary	Otherwise	Totals
Anæmia	1	...	1
Diseases of Lungs (non-tuberculous)	3	...	3
Diseases of Nervous System	2	...	2
Other Diseases and Defects	4	2	6

TABLE V.

A.—AVERAGE HEIGHTS AND WEIGHTS OF CHILDREN INSPECTED

(Elementary Schools).

Age-Years	Boys			Girls		
	Number	Average Height	Average Weight	Number	Average Height	Average Weight
		in.	lb.		in.	lb.
3 ...	166	37·3	33·7	203	36·9	33·1
4 ...	694	39·3	36·6	690	38·9	35·7
5 ...	1,122	42·7	39·7	1,028	41·3	38·5
6 ...	495	43·6	43·5	541	43·4	42·3
7 ...	119	45·3	46·7	146	44·8	45·8
8 ...	85	48·5	55·2	66	48·2	51·6
9 ...	1,132	49·9	58·4	1,553	49·3	57·0
10 ...	52	50·9	61·9	127	50·7	59·4
12 ...	882	55·6	76·3	802	56·5	79·2
13 ...	501	56·3	78·7	521	57·5	83·7

* Including cases actually cleansed by the school nurses and cases cleansed by parents on advice given by the nurses.

TABLE VI.

RESULTS OF MEDICAL RE-INSPECTION DURING 1929 OF 1,547 CHILDREN FOUND DURING 1928 TO REQUIRE TREATMENT OR TO BE KEPT UNDER OBSERVATION.

	Treated at School Clinic			Treated Elsewhere			Not Treated			Totals			Total Number of Defects
	Cured or Improved	No Improvement	Worse	Cured or Improved	No Improvement	Worse	Cured or Improved	No Improvement	Worse	Cured or Improved	No Improvement	Worse	
Eye Diseases	321	13	1	7	3	2	72	174	12	400	190	15	605
Ear Diseases	64	7	...	1	...	...	6	22	1	71	29	1	101
Diseases of Nose and Throat	173	2	...	8	...	...	70	204	8	251	206	8	465
Enlarged Cervical Glands	4	...	...	2	...	...	2	4	...	8	4	...	12
Defective Speech	1	...	...	1	...	...	6	5	...	8	5	...	13
Heart Diseases	4	3	...	1	1	...	10	49	...	15	53	...	68
Anæmia	4	2	...	2	...	...	...	4	...	6	6	...	12
Lung Diseases (Non-Tuberculous)	43	2	...	20	...	...	22	9	...	85	11	...	96
Tuberculosis — Pulmonary	...	...	...	...	...	...	...	...	...	...	...	...	...
Tuberculosis — Non-Pulmonary	...	...	...	...	...	...	...	...	...	...	...	...	...
Nervous Diseases	2	...	...	...	...	...	...	3	...	2	3	...	5
Deformities	55	7	...	1	1	...	1	22	...	57	30	...	87
Other Defects and Diseases	52	1	...	36	2	14	24	60	1	112	63	15	190
Totals	723	37	1	79	7	16	213	556	22	1,015	600	39	1,654

MENTAL DEFICIENCY SERVICE.

The usual statistical tables giving detailed information as to the age, sex, classification and condition of mental defectives under the care of the Mental Deficiency Committee are submitted. On reference to Table III it will be noted that the total number of ascertained defectives, for the care of whom the Committee were responsible, at the end of 1929 was 391, as compared with 354 at the end of 1928. Of the 391 cases, 142 were in institutions or under statutory guardianship, the various institutions in which they are accommodated being shown in Table VII. The ascertained cases remaining at home numbered 249, of whom 158 were under statutory supervision and 87 under voluntary supervision, 4 remaining to be dealt with appropriately.

Mental deficiency, as a social problem, is assuming greater importance with the increase of our knowledge of its extent, of its effects in relation to crime and the present difficulties of unemployment, and of its bearing upon the reforms in education which are imminent. There has been a gradual change in our conception of the problem. Mental defect was very imperfectly distinguished from mental disease in law and administration until the end of the 19th century. Before this, in its grosser forms, it was subject to the same treatment and restriction of liberty as was provided for insanity, so that asylums or mental hospitals and poor-law institutions came to be, and to a considerable extent still are, the institutions to which mental defectives have tended to gravitate. It was not until the Report of a Departmental Committee of the Board of Education set up in 1897 led to the passage of the Elementary Education (Defective and Epileptic Children) Act, 1899, that recognition was definitely given to the very great problem of the higher grade defectives for whom some quite different provision was required from that primarily intended for the insane. This recognition was expressed in much more explicit form in the Report of the Royal Commission on Mental Deficiency issued in 1908, and the Mental Deficiency Act of 1913, which was its direct outcome.

During the last twenty years attention has been more and more diverted to the lesser degrees of mental subnormality, *i.e.*, to feebleminded persons as distinct from imbeciles and idiots, and it has come to be realised that they form an unexpectedly high proportion of the community. The defective delinquents belong mainly to this group. The females gravitate to prostitution and the males to the less intellectual forms of crime. They swell the lists of the unemployable and of those receiving public assistance. They act as drones on the educational progress of their fellow scholars at school, but they are not ineducable if the curriculum is modified to meet their special needs. Indeed, education and training, whether at schools, day centres or residential institutions, are the administrative measures on which a successful solution of this problem must depend. When it is pointed out that the proportion of the population mentally subnormal has been estimated at 10 per cent. by such a competent body as the Mental Deficiency Committee of the Board of Education and the Board of Control which reported last year, and that nearly 80 per cent. of these are feebleminded only, it will be obvious that medical or psychiatric supervision and treatment can only be applicable to a limited number and that the great mass offer a special field of activity for teachers specialising in this branch of pedagogics; and that such training requires to be carried in many cases well beyond the stage of life at which the average scholar leaves school. It is with this object in view that the Committee have opened a new training centre during the past year, and it is in this connection that collaboration with the work of the Education Committee ought to become progressively closer. The ascertainment of defectives is practically impossible except through the educational organisation, and the increasing ascertainment of the less profound forms of mental retardation is opening up questions of training affecting the Mental Deficiency and Education Committees, which cannot be answered successfully by either without the closest knowledge of what the other is doing.

The establishment of the Occupation Centre in June, 1925, and of the Training Centre in September, 1929, has provided training and occupation for children and young persons who would otherwise be idle and whose mental condition would probably deteriorate. A report on the work of these centres by the Supervisor, Mrs. A. Dascombe, is appended hereto. The report clearly indicates that the centres are serving the purpose for which they were provided and that they are even more successful than was at first anticipated. It ought to be realised, however, that the present centres, while they have served to demonstrate the practicability of this means of helping those who are mentally subnormal, are quite inadequate in accommodation and arrangements for the purpose. Their development is one of the problems which the Committee will have to face, and it is desirable that all the members should make themselves familiar with this branch of their work by personally visiting the centres.

MENTAL DEFICIENCY—STATISTICAL TABLES.

Table I.

Summary of the Year's Work.

	Males.	Females.	Totals.
(1) Cases examined for the first time :—			
Idiots	4	—	4
Imbeciles	10	9	19
Moral defectives	1	—	1
Feebleminded	21	17	38
Post-encephalitic deterioration	—	1	1
Unclassified	2	1	3
Not mentally defective ...	3	7	10
Totals	41	35	76
(2) Cases re-examined	33	43	76
(3) Failed to keep appointment for examination	—	5	5
(4) Visits paid by Visiting Officer ...	...	...	2,004
(5) Removed from list of ascertained cases under supervision at home :—			
(i) Placed in Institutions at instance of Local Authority—			
(*a*) Obligatory	3	1	4
(*b*) Permissive	—	—	—
(ii) Deceased	3	—	3
(iii) Left Cardiff	1	2	3
(iv) Removed to Institutions at instance of Guardians of Cardiff Union	5	1	6
Totals	12	4	16

Summary of the Year's Work (continued).

	Males.		Females.		Totals.
(6) Removed to Institutions (not previously under supervision at home)	5	...	5	...	10
(7) Total number removed to Institutions or placed under Guardianship during the year at the instance of the Local Authority	8	...	6	...	14
(8) Cases in Institutions that ceased to be chargeable during 1929 :—					
(i) Deceased	2	...	—	...	2
(ii) Dealt with under Lunacy Order	—	...	1	...	1
(iii) Escaped and still at liberty	1	...	—	...	1
(iv) On licence	—	...	1	...	1
(v) Transferred to State Institutions	2	...	1	...	3
Totals	5	...	3	...	8
(9) Transferred from one Institution to another	9	...	1	...	10
(10) Transferred from Guardianship to Institution	1	...	—	...	1
(11) Transferred from Institution to Guardianship	—	...	1	...	1
(12) Transferred from Institution to Mental Hospital	—	...	1	...	1
(13) Died in Mental Hospital	—	...	1	...	1

Table II.

Sources of Ascertainment of New Cases.

Source of Ascertainment	Idiots	Imbeciles	Moral Defectives	Feeble-minded	Post-encephalitic Deterioration	Unclassified	Not Mentally Defective	Totals
Local Education Authority	...	10	...	20	...	1	...	31
Cardiff Board of Guardians	2	7	1	10	...	...	9	29
Public Health Department	1	2	...	2	...	1	...	6
Mental After-care Committee	...	...	...	1	...	...	...	1
Parents, Guardians or Relatives	1	...	...	...	1	...	...	2
Police	...	...	...	3	...	...	1	4
Mental Hospital ...	...	...	...	...	...	1	...	1
Institute for the Blind	...	...	...	2	...	...	...	2
Totals	4	19	1	38	1	3	10	76

Table III.

Position at 31st December, 1929.

	Males.	Females.	Totals.
(1) Obligatory cases :—			
(a) In Institutions	73	56	129*
(b) Under Guardianship	—	2	2
(c) On Licence from Institution ...	—	1	1
(d) Absconded from Institution (not yet found)	1	—	1
(2) In " places of safety "	—	—	—
(3) Cases in regard to whom the Local Authority contributes under permissive powers :—			
(a) In Institutions	4	3	7
(b) Under Guardianship	—	—	—
(4) Cases removed by parents or guardians in regard to whom the Local Authority does not contribute :—			
(a) In Institutions	2	—	2
(b) Under Guardianship	—	—	—
Totals ...	80	62	142
(5) Cases at home—ascertained to be defective :—			
(a) Under Statutory Supervision ...	83	75	158
(b) Under Voluntary Supervision ...	34	53	87
Totals ...	117	128	245
(6) Cases in Mental Hospitals—ascertained to be defective	—	5	5
(7) Attending Occupation Centre—included in (5) :—			
(a) Under Statutory Supervision ...	16	7	23
(b) Under Voluntary Supervision ...	2	—	2
Totals ...	18	7	25
(8) Attending Training Centre :—			
(a) Under Statutory Supervision included in (5)	6	8	14
(b) Under Voluntary Supervision included in (5)	1	1	2
(c) On Licence from Institution included in (1)	—	1	1
Totals ...	7	10	17
(9) Action not yet taken under any one of the above headings :—			
(a) Notified by Education Authority	1	1	2
(b) Otherwise ascertained	—	2	2
Totals ...	1	3	4
(10) Under consideration but not ascertained to be defective	7	2	9

* Including 13 cases (7 males and 6 females) maintained by the Board of Control.

Table IV.

Classification of Known Cases.

	In Institutions or under Guardianship			Under Supervision at Home		
	Males	Females	Totals	Males	Females	Totals
Idiots	4	6	10	13	12	25
Imbeciles	30	17	47	50	53	103
Moral Defectives	1	1	2	...	1	1
Feebleminded	44	34	78	51	58	109
Post-encephalitic Deterioration ...	...	1	1	1	4	5
Unclassified or not examined ...	1	3	4	10	5	15
Totals	80	62	142	125	133	258

Table V.

Ages of Cases in Institutions or under Guardianship.

Ages—Years	Idiots		Imbeciles		Moral Defectives		Feebleminded		Post-encephalitic Deterioration		Unclassified		Totals
	M	F	M	F	M	F	M	F	M	F	M	F	
7	...	...	...	2	...	...	...	...	...	...	...	...	2
10	...	...	2	...	...	...	...	...	...	...	...	...	2
11	...	...	2	...	...	...	...	...	...	...	...	...	2
12	...	...	...	1	...	...	1	...	...	...	...	...	2
13	1	1	1	1	...	...	...	...	...	...	...	...	4
14	...	...	2	...	...	...	1	...	...	...	...	...	3
15	...	...	4	1	...	...	...	...	...	...	...	...	5
16	...	...	3	...	...	...	3	...	...	...	...	...	6
17	...	1	...	2	...	...	2	...	...	...	...	...	5
18	...	1	...	...	...	...	4	1	...	...	...	...	6
19	...	1	1	1	...	...	1	1	...	...	...	...	5
20—25	3	1	7	6	1	1	18	7	...	1	1	...	46
25—30	...	...	2	1	...	...	11	17	...	...	...	2	33
30—40	...	1	5	...	...	...	3	6	...	...	...	1	16
Over 40	...	...	1	2	...	...	...	2	...	...	...	...	5
Totals	4	6	30	17	1	1	44	34	...	1	1	3	142

Table VI.

Ages of Cases under Supervision at Home.

Ages—Years	Idiots		Imbeciles		Moral Defectives		Feeble-minded		Post-encephalitic Deterioration		Unclassified		Totals
	M	F	M	F	M	F	M	F	M	F	M	F	
4	...	...	...	...	...	...	...	...	...	1	...	...	1
5	1	...	1	1	...	...	...	...	...	...	1	...	4
6	...	...	...	3	...	...	...	...	...	...	1	...	4
7	1	1	1	1	...	...	...	1	...	...	1	2	8
8	...	...	1	3	...	...	...	...	...	...	...	...	4
9	2	1	3	2	...	...	...	...	...	...	...	...	8
10	1	1	4	2	...	...	1	...	...	...	...	...	9
11	...	3	2	3	...	...	...	...	...	...	...	...	8
12	1	3	5	...	...	...	...	...	...	...	...	...	9
13	...	1	3	2	...	...	...	...	...	...	...	...	6
14	3	...	2	2	...	...	1	1	...	...	...	...	9
15	...	...	5	4	...	...	5	2	...	...	...	...	16
16	...	...	7	2	...	...	8	7	...	...	...	...	24
17	1	1	3	9	...	...	6	8	...	...	1	1	30
18	1	...	1	1	...	...	5	3	...	...	...	...	11
19	...	...	3	1	...	...	1	2	...	1	1	...	9
20—25	1	...	4	6	...	1	12	14	1	1	4	...	44
25—30	...	1	4	4	...	...	6	11	...	...	1	...	27
30—40	...	...	1	6	...	...	6	5	...	1	...	2	21
Over 40	1	...	...	1	...	...	...	4	...	...	...	...	6
Totals	13	12	50	53	...	1	51	58	1	4	10	5	258

Table VII.

Cases in Institutions or Under Guardianship at 31st December, 1929.

(*a*) Obligatory Cases.

NAME OF INSTITUTION, Etc.	Idiots	Imbeciles	Moral Defectives	Feeble-minded	Post-encephalitic Deterioration	Unclassified	Totals
Allerton Priory R.C. Special School, Nr. Liverpool	...	...	...	...	...	1	1
Besford Court Catholic Mental Welfare Home, Worcester	...	...	...	2	...	...	2
Calderstones Institution, Whalley, Lancashire	...	1	...	...	...	...	1
Cardiff Poor Law Institution, Ely, Cardiff	4	6	1	24	...	1	36
Carnarvon Poor Law Institution, Bodvan	...	2	...	...	...	...	2
Caterham Mental Hospital, Caterham, Surrey	3	1	...	2	...	...	6
Central Association for Mental Welfare, London	...	1	...	1	...	...	2
Darenth Training Colony, Dartford, Kent	...	1	...	...	...	...	1
Drymma Hall, Skewen, Nr. Neath	...	...	...	1	...	...	1
Etloe House, Leyton, Essex	...	...	...	1	...	...	1
Falmouth Poor Law Institution, Falmouth	...	2	...	...	...	...	2
Ford House, Devonport	...	1	...	1	...	...	2
Girls' Village Homes, Barkingside, Essex	...	...	...	1	...	...	1
Hillside Institution, Buntingford	...	2	...	3	...	...	5
House of Help, Bath	...	...	...	2	...	...	2
Leavesden Mental Hospital, Abbots Langley, Herts	...	1	...	...	...	...	1
Monkton Hall Home, Jarrow-on-Tyne	...	...	...	2	...	...	2
Newton and Llanidloes Poor Law Institution, Caersws	1	2	...	...	...	...	3
Pield Heath House, Hillingdon, Uxbridge	...	2	...	...	...	...	2
Princess Christian's Farm Colony, Hildenborough	...	...	...	1	...	...	1
Rampton State Institution, Retford	...	3	1	7	1	1	13
Rock Hall House, Combe Down, Bath	...	1	...	...	...	...	1
Ross Poor Law Institution, Ross	...	3	...	3	...	...	6
Royal Earlswood Institution, Redhill	...	...	...	1	...	...	1
Ruthin Poor Law Institution, Denbigh	...	2	...	3	...	...	5
St. Elizabeth's Home for Epileptics, Much Hadham, Herts	...	...	...	1	...	...	1
St. Joseph's Home, The Croft, Sudbury	...	...	...	1	...	...	1
St. Teresa's Home, Lewisham	...	...	...	1	...	...	1
Seafield House, Seaforth, Nr. Liverpool	...	1	...	3	...	...	4
Shotley Bridge Colony, Durham	...	...	...	11	...	...	11
Stoke Park Colony, Stapleton, Bristol	...	11	...	2	...	1	14
West Hylands Institution, Cuckfield, Nr. Lewes	...	...	...	1	...	...	1
Totals	8	43	2	75	1	4	133

(*b*) Permissive Cases.

NAME OF INSTITUTION, ETC.	Idiots	Imbeciles	Feeble-minded	Totals
Brentry Certified Institution, Westbury-on-Trym... ...	...	1	...	1
Cardiff Poor Law Institution, Ely, Cardiff	...	1	...	1
Caterham Mental Hospital, Caterham, Surrey	1	...	...	1
Falmouth Poor Law Institution, Falmouth	...	1	...	1
Newtown and Llanidloes Poor Law Institution, Caersws	1	...	...	1
Ross Poor Law Institution, Ross	...	...	1	1
Royal Earlswood Institution, Redhill	...	2	...	2
Shotley Bridge Colony, Durham	...	...	1	1
Totals	2	5	2	9

REPORT FOR 1929 ON THE OCCUPATION AND TRAINING CENTRES BY MRS. A. DASCOMBE, SUPERVISOR.

OCCUPATION CENTRE.

At the close of 1929 the Occupation Centre had been in existence for four and a half years. In that time the number of children on the register has grown from ten to twenty-five. The difficulty experienced at the inauguration of this work in getting children to attend the centre has vanished, and all children now on the register attend with regularity and punctuality.

When the centre was re-opened in January, 1930, after the Christmas vacation, only one child, who was ill, was absent, and it was cheering and encouraging to see the children's happy faces and note their joy at being back.

The general tone of the centre has greatly improved during the past year, and the mothers co-operate in encouraging good behaviour in going to and from the centre. There is also an improvement in the personal appearance of the children, and they appear to be healthier generally. Frequently cases of impetigo occurred at the beginning, but there is now no trouble of this kind. The mid-day meal is a great help in keeping children fit, and mothers, even from the better class homes, frequently state that the children miss the additional nourishment during the holidays.

Since September, 1929, I have had the help of Miss Price, the Instructress at the Training Centre, during the morning sessions. Miss Price is an industrious and willing teacher, and her ready co-operation has added to the interest of the work. With her help more individual methods have been introduced, which have resulted in greater efficiency, particularly in handwork.

Physical exercises and folk dancing still occupy an important place in the curriculum, and have been invaluable in facilitating control and in promoting courtesy, which are so much needed amongst these afflicted children. The folk dancing is an ideal exercise, involving as it does the practical use of all the muscles and harmonising the action of the grosser and finer muscles, as well as co-ordinating the activities of body and mind. Much time has also been spent in teaching singing games, which bring into play mental and physical attributes, stimulate the imagination and teach discipline and restraint. Distinct utterance of words is insisted upon and clear enunciation is encouraged under the guise of amusement.

Handwork also plays an important part in the scheme of work, the aim of which is to give training to eye and hand, to develop accuracy, patience and control of

muscles and to give scope for any constructive ability. Rugs are now being made in patterns, and these find a ready sale ; in fact, more are ordered than can be made. Stools, trays, baskets are also made, and a start has even been made with leather work. This work is difficult, however, and much patience is required, but under supervision the children have succeeded in making hand-bags, purses and leather novelties. The younger children make serviette rings and dinner mats in raffia, and they are very proud when they can sell these articles.

The girls are improving in edu-craft stitchery and have made night-dress cases, linen bags and toilet sets. Miss Redfern, of the Board of Control, suggested that the boys should also learn to do this work, and they have successfully made hessian bags for holding dancing shoes.

Individual attention is given to the children who show any aptitude for writing and numbering, and some have succeeded in learning to write simple sentences and to do very simple sums in addition.

I should like to express my appreciation of the help given by Miss Powell, the Visiting Officer, in maintaining regularity and punctuality amongst the children. Her quiet, but very persistent, visiting in the homes of the children and her ready and willing co-operation in any effort for the children's welfare have been of great value. Her advice, also, has been extremely helpful in carrying on the work of the centre generally.

Training Centre.

The Training Centre was opened on 9th September, 1929, to provide training in useful occupations for mentally defective girls and boys over sixteen years of age who are not in regular employment. There are now thirteen girls and eight boys attending the centre. The boys attend from 9.30 a.m. to 12.30 p.m. and the girls from 2 p.m. to 4 p.m. So eager are the girls and boys to attend that there has been no difficulty in maintaining regularity and punctuality. In fact, one boy presents himself at 8.30 a.m.

Boys' Section.—The boys receive individual instruction in woodwork, boot-repairing and gardening from the Instructor, Mr. J. P. Doran.

(1) *Woodwork.*—Great interest has been taken in this subject. The boys were provided with one joiner's bench and the necessary tools. They then set to work to make two other joiner's benches (each fitted with two vices), a saw bench fitted with drawer, a cobbling bench, two nail boxes, two bench hooks, a saw saddle and two stands for bits. The boys quickly adapted themselves to the task of sawing and planing and, by carefully following instructions, very few mistakes were made. When this equipment was completed they were shown how to make useful household articles, which have found a ready sale amongst the parents. The following articles have been made and sold :—15 pastry boards and rolling pins, 8 footstools, 1 small desk, 2 soap boxes, 1 drawing board, 1 towel rail and roller and 1 knife box. There are a dozen similar articles in course of construction. In future the making of larger articles will be attempted, and orders have already been received for kitchen tables, chairs, pedestals, etc.

(2) *Boot-repairing.*—Individual instruction has been given in this subject and the boys' parents are delighted to avail themselves of the opportunity of having boots repaired for the actual cost of materials used. This subject required much patience on the part of the Instructor, which has been repaid by a steady improvement in the work. Over a dozen pairs of ladies', gentlemen's and children's boots and shoes have been repaired and, although some of them were practically beyond repair, excellent results have been obtained.

(3) *Gardening.*—The patch of ground adjoining the centre, which is available for the teaching of gardening, was in a very rough state, large stones and rubbish

having been deposited there. A large quantity of debris had to be dug out before the actual work of gardening commenced. The boys worked well at this laborious work, quickly clearing the patch and whistling happily as they worked. They have since dug the ground up several times and it has now been manured. It is hoped to sow potatoes in March or April, and lettuce, beans, carrots, peas, etc., at appropriate times.

General Remarks.—The establishing of the centre has given the boys for which it is intended an opportunity of benefiting by practical training in useful work, and I think the results are very satisfactory when one considers the short period that the centre has been in existence. A happy choice has been made in the Instructor, whose diligence and enthusiasm have inspired the boys with a similar spirit. He has encouraged the boys, and they set about their work in an orderly and quiet way which makes for efficiency.

Girls' Section.—The girls in this section receive individual training in needlework, knitting, housewifery, laundry-work and cookery from the Instructress, Miss M. E. Price.

(1) *Needlework.*—We have been fortunate in having a sewing machine for this work, which has not only made the work far more interesting but has been the means of obtaining better results. Most of the girls have adapted themselves to the use of the machine, and the more nervous girls are rapidly gaining confidence. Two of the girls are able to use the machine without close supervision. The articles made, which have been mainly simple articles of clothing, have found a ready sale amongst the girls' parents. Those actually made and sold have been children's pinafores and overalls, girls' overalls, pillow slips, children's petticoats, etc. More difficult work will be attempted later, such as the making of plain frocks. Several old frocks have been unpicked and renovated, and these the girls were allowed to keep when completed. They also patch and darn other articles of clothing which people give for the poorer children attending the Occupation Centre. The girls also make their cooking aprons, coarse aprons, kneeling pads, oven cloths, etc., for their own use during domestic work at the centre. At the end of the year a decided improvement was noticeable. The girls are gaining confidence and are now working much more quickly and efficiently.

(2) *Knitting.*—This subject has required a great deal of patience on the part of the Instructress. Only one girl can knit without constant supervision, but a decided improvement has been noticed, and the work has not to be unpicked so often. Much remains to be done, however, to ensure the concentration necessary for good work. One girl has succeeded in knitting a pair of gentlemen's socks and other girls are knitting vests and scarves. These articles also find a ready sale amongst the girls and their parents.

(3) *Cookery.*—This subject is greatly enjoyed by all the girls, who have greatly improved in clean preparation of food for cooking. Before doing the practical work themselves, a demonstration is given by the Instructress, and the girls are given recipes for their own use at home. They have been taught to make short pastry and simple, wholesome cakes, and can now be trusted to make pastry and cakes without continual supervision. Just before the Christmas vacation several girls brought ingredients for making their own cakes; they were also taught to ice the cakes, with very good results. The preparation of dinners—roasting, boiling, etc.—is to be attempted, and special attention will be given to cooking for sick persons.

(4) *Laundry-work.*—The washing of articles used at the centre, such as towels, tea cloths, dusters, etc., has only been attempted so far, but now that the girls are able to wash these thoroughly an attempt is being made to wash the usual articles

in a weekly wash. These will also be starched and ironed, as the girls can now be trusted to use the hot irons carefully. The girls enjoy this section of the work and they work well.

(5) *Housewifery.*—All articles used at the centre—spoons, knives, forks, saucepan covers, flour dredgers, etc.—are thoroughly cleaned after use and polished once a week. The windows are cleaned and the furniture polished. The girls have been encouraged to work in a quiet, orderly manner, and, without exception, they work well and cheerfully.

General Remarks.—The centre for girls is providing very practical training in ordinary household duties. Consistent training is gradually eliminating slow, lazy methods, and is arousing a keen interest which makes for efficiency. Several mothers have stated that their daughters are more useful at home since they commenced training at the centre. The girls, with continued training, should make capable and efficient housekeepers.