

**Report of the Medical Officer of Health on the public health and sanitary circumstances of Johannesburg.**

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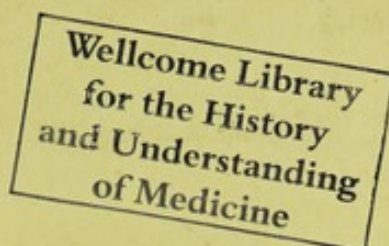
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# City of Johannesburg.



## REPORT of the MEDICAL OFFICER OF HEALTH on the PUBLIC HEALTH and SANITARY CIRCUMSTANCES of JOHANNESBURG during the Year 1st JULY, 1928—30th JUNE, 1929.

ARTHUR J. MILNE, M.B., Ch.B., D.P.H., D.T.M.

*Medical Officer of Health; Hon. Cons. Medical Officer of the Rand Water Board; Medical Officer under Native Labour Regulations, Johannesburg Mining District; Member Board of Examiners, Royal Sanitary Institute; Lieut.-Colonel (Specialist Hygiene Officer), Union Defence Force.*

JOHANNESBURG,  
MARCH, 1930.



Johannesburg:

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## Report of the Medical Officer of Health, 1928—1929.

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Public Health Department,  
City Hall,  
Johannesburg,  
March, 1930.

TO HIS WORSHIP THE MAYOR (Mr. Councillor DAVID ANDERSON) and  
CITY COUNCILLORS OF THE CITY OF JOHANNESBURG.

GENTLEMEN,

I have the honour to present herewith my report of the health conditions of Johannesburg for the year 1928-29.

It is a pleasure to be able to record that the work of all members, professional, clerical and technical, of your Public Health Department has been consistently good and has maintained the high level befitting the largest city in the Union of South Africa. Personally and officially I desire to acknowledge gratefully their valued assistance, often in difficult situations, and their loyalty both to the Council which they serve and myself.

A detailed record for the year of inspections, etc., undertaken by the inspectorate staff is submitted on page 27.

I also desire to express my thanks in particular to the occupant of the Mayoral Chair during 1928-29, Mr. Councillor Wilfrid Fearnhead, and to the Chairman (Mr. Councillor H. E. Jackson) and members of the Public Health Committee who extended to me much kindly assistance and courtesy and to all other heads of Departments for their friendly co-operation.

I have the honour to be, Gentlemen,

Your obedient servant,

A. J. MILNE,

*Medical Officer of Health.*

# CITY OF JOHANNESBURG.

## PUBLIC HEALTH COMMITTEE, 1928-1929.

Councillor H. E. Jackson (Chairman).  
 Councillor J. Blaker (Vice-Chairman).  
 Councillor H. A. Butler.  
 Councillor C. J. Hookham.  
 Councillor A. L. Palmer.  
 Councillor W. H. Port.  
 Councillor B. C. Vickers.  
 His Worship the Mayor (ex officio).

## PUBLIC HEALTH DEPARTMENT

### STAFF.

#### *Administrative and Office—*

- 1 Medical Officer of Health: Arthur J. Milne, M.B., B.Ch., D.P.H., D.T.M.
- 1 Assistant Medical Officer of Health: John Joseph Middleton, M.B., M.C.P.S. (Ontario), D.P.H.
- 1 Chief Clerk: F. Thompson, Cert. R.S.I. (S.A.).
- 1 Typist Correspondent: Miss E. Oliver.
- 1 Licensing Clerk and Typist: Miss O. V. Joel.
- 1 Junior Clerk: E. Cotzee, Cert. R.S.I. (S.A.).
- 1 Messenger: W. van Derau.

#### *Inspectorial Staff—*

- 1 Chief Sanitary Inspector: W. McCann, Cert. R.S.I. (Eng.).
- 1 Plans Inspector: C. J. Crothall, Cert. R.S.I. (Eng.).
- 17 District Sanitary Inspectors:
 

A. McIver.	A. Patterson.	I. J. Distiller.
A. Beale.	J. S. Pitman.	E. A. Smorenburg.
A. C. Fraser.	M. J. Doyle.	J. H. Haskins.
A. C. Lumsden.	J. W. Forrett.	J. W. Price (died March, 1929).
J. R. Sabiston.	E. Hewitson.	J. S. Russell.
P. Squires.	F. I. Hamilton.	

All Certified Royal Sanitary Institute (S.A.).

- 2 Relieving District Sanitary Inspectors:
  - C. E. Riley, Cert. R.S.I. (S.A.).
  - E. C. Heather, Cert. R.S.I. (S.A.).
  - W. J. Wilson, Cert. R.S.I. (S.A.), from 1st June, 1929.
- 2 Mines Sanitation Inspectors:
  - J. Smith, Cert. R.S.I. (S.A.).
  - S. G. Russell, Cert. R.S.I. (S.A.).
- 2 Food and Drug Inspectors:
  - F. A. Wrighton, Cert. R.S.I. (S.A.).
  - E. W. Clarkson, Cert. R.S.I. (Eng.).
- 3 Dairy Inspectors:
  - G. Bidwell, Cert. R.S.I. (Eng.).
  - W. C. Watson, Cert. R.S.I. (S.A.).
  - G. Christie, Cert. R.S.I. (S.A.).

#### *Infectious Diseases and Disinfecting Station—*

- 1 Infectious Diseases Inspector: C. Wallace, Cert. R.S.I. (Eng.).
- 1 Disinfecting Inspector: W. Murphy.
- 2 Assistant Disinfecting Inspectors: J. A. M. Bain and H. J. Hancock.
- 1 Disinfecting Engineer: J. P. Jonas, six native assistants.

*Maternity and Child Welfare—*

## 1 Pediatric Officer:

B. G. v. B. Melle, M.B., B.Ch. (Oxford), F.R.C.S.E.

## 2 Obstetric and Ante-Natal Officers:

W. H. Maxwell, M.A., M.B., L.R.C.P., F.R.C.S.

F. K. Te Water, M.B., B.Ch., L.R.C.P., F.R.C.S.E.

## 6 Health Visitors:

- |                      |   |
|----------------------|---|
| (1) C. Morisse.      | } All Trained General Nurses and Midwives<br>and all certificated Health Visitors and<br>School Nurses, Royal Sanitary Institute. |
| (2) M. G. Ferris.    |   |
| (3) E. Ide.          |   |
| (4) M. Craig.        |   |
| (5) G. K. Jordan.    |   |
| (6) H. M. Townshend. |   |

No. (1), Cert. R.S.I. (S.A.).

No. (3), Cert. R.S.I. (S.A.), Sanitary  
Inspector and Meat and Food Inspection.

## 4 Ante-Natal Nurses:

- |                       |  |
|-----------------------|--|
| (1) E. Orn.           | } All Trained General Nurses and Midwives. |
| (2) A. E. R. Blacker. |  |
| (3) A. McCorkindale.  |  |
| (4) C. D. Littlejohn. |  |

No. (1), Cert. R.S.I. (S.A.), Health Visitor  
and School Nurse.*Fever Hospital—*

1 Physician: H. A. Loeser, M.D.

1 Resident Medical Officer.

## Nursing Staff:

Permanent: 1 Matron, 3 Sisters.

Temporary: 1 Staff Nurse, 8 Probationers.

Administrative: 1 Clerk.

General: 9 and 18 Natives.

*Veneral Diseases Clinic—*

1 Director: H. Gluckman, M.R.C.S. (Eng.), L.R.C.P. (Lond.)

1 Clinic Orderly (Male).

2 Nursing Sisters.

*Plague Rat-catching Staff—*

1 Chief Rat-catcher: R. J. Fox.

9 Rat-catchers.

7 Rat-catching Youths.

## Deaths of Members of Staff:—

It is recorded with much regret that one of the younger and promising members of the Inspectorate Staff, Mr. J. W. Price, was killed in an aeroplane accident in March, 1929.

## Report, 1st July, 1928—30th June, 1929.

### CLIMATE AND RATEABLE VALUE.

*Latitude.*—26 degrees 11 minutes 44 seconds South.

*Longitude.*—1 hour 52 minutes 10 seconds East.

*Mean Altitude.*—5,850 feet.

*Climate.*—The days are bright and warm, the nights cool, and in winter often very cold. The following averages of Johannesburg records for sixteen years are kindly supplied by R. T. A. Innes, Esq., Union Astronomer: Temperature, maximum 69·6 degrees F., minimum 49·5 degrees F. Rainfall, 30·74 inches on 96 days. Relative humidity, 65·5 at 8.30 a.m. Bright sunshine, 8·9 hours daily.

*Area.*—The area of the city of Johannesburg is 52,330 acres (*vide Government Gazette*, October, 1903), the extreme length  $11\frac{1}{2}$  miles, extreme breadth  $9\frac{1}{2}$  miles, extent of perimeter  $41\frac{1}{2}$  miles.

*Annual Rateable Value.*—As assessed in accordance with Ordinance 6 of 1912, and representing "the full and fair price or sum which the same would realise if brought at the time of valuation to voluntary sale," was in 1928-29 £60,054,739.

The rate for 1928-29 was 6½d. in the £ on land. Rate produced £628,838 13s.

In 1928-29 the valuation was: Land, £20,291,611; improvements, £39,763,128.

### POPULATION.

	Census, 3rd May, 1926.	Estimated, 30th June, 1929.
Whites	168,320	180,000
Natives	...	146,500
Eurafricans	...	17,000
Asiatics	...	7,000
Totals	...	350,500

### BIRTHS.

From 1st July, 1928, to 30th June, 1929, the number of white births registered was 4,672, as compared with 4,058 and 4,197 in 1926-27 and 1927-28 respectively.

The *white birth-rate* was 25·95 per 1,000 for 1928-29, the two previous years being 23·58 and 23·74.

For "The 107 Great Towns" of England and Wales in 1928 the birth-rate was 16·9, in Pretoria 22·25, in Capetown 21·40, and in Durban 16·51.

*White Illegitimate Births.*—These numbered 146, and constituted 3·12 per cent. of all births, as against 4·17 in England and Wales in 1927, 6·01 in Capetown, 3·5 in Durban, and 3·72 in Pretoria.

It is worthy of comment that the white birth-rate of Johannesburg is considerably higher than the rates of other large towns in the Union and not very far short of double the rate for the great towns of England and Wales. On the other hand, it is gratifying to be able to record that the illegitimate birth-rate is lower than in other large towns in the Union and England and Wales.

The *native and coloured births* registered during 1928-29 numbered 1,920, as against 1,504 and 1,734 in 1926-27 and 1927-28 respectively. But as the ratio of females to males in the native and coloured population is only about 1 to 7, it would merely mislead to strike a birth-rate.

The numbers however, indicate very clearly what continues to happen in Johannesburg as elsewhere in urban areas in South Africa, and, that unless suitable amendments of the Urban Areas Act are promulgated and enforced, urban areas will be swamped with detribalised natives who are not required in these areas for domestic and industrial requirements.

## DEATHS AND DEATH-RATES.

The deaths herein referred to are those of persons who died within the extended Municipal Area as defined by proclamations 13 of 1902 and 46 of 1903:—

## DEATHS.

Year	Whites	Natives	Eurafricans	Asiatics	All Persons
1909-10	1,269	2,215	192	91	3,767
1910-11	1,493	3,108	229	99	4,929
1911-12	1,505	2,683	270	80	4,538
1912-13	1,411	2,907	229	103	4,650
1913-14	1,204	1,706	208	89	3,207
1914-15	1,453	1,890	296	107	3,746
1915-16	1,338	2,095	227	85	3,745
1916-17	1,852	2,061	324	132	4,369
1917-18	1,661	1,737	273	118	3,789
1918-19	2,261	2,843	447	263	5,814
1919-20	1,632	2,110	303	126	4,171
1920-21	1,710	2,194	373	114	4,391
1921-22	1,758	1,891	330	145	4,124
1922-23	1,610	1,994	319	111	4,034
1923-24	1,562	2,314	321	143	4,340
1924-25	1,568	2,213	345	142	4,268
1925-26	1,600	2,238	309	114	4,261
1926-27	1,801	2,621	354	139	4,915
1927-28	1,858	2,696	440	137	5,131
1928-29	1,989	2,795	304	143	5,231

## DEATH-RATES.

DEATH-RATES (excluding non-residents)	White		Natives	Eur- africans	Asiatics	All Persons
	Gross	*Corrected for Age and Sex distrib.				
1909-10	11.3	12.9972	24.5	25.2	18.5	18.3
1910-11	13.3	15.2976	33.6	31.1	19.7	23.4
1911-12	11.6	13.3423	25.5	24.4		18.9
1912-13	10.52	12.10	27.63	23.21		18.68
1913-14	8.98	10.32	16.34	21.19		12.66
1914-15	10.84	†	18.00	28.11		14.39
1915-16	9.55	—	19.95	21.81		14.32
1916-17	12.04	—	16.73	23.21		14.69
1917-18	10.55	—	14.14	20.25		12.69
1918-19	16.06	—	26.94	38.15		21.94
1919-20	10.88	—	17.58	27.54	25.20	14.58
1920-21	11.07	—	17.90	33.86	21.07	14.96
1921-22	10.98	—	17.19	29.96	26.80	14.39
1922-23	10.06	—	16.43	29.25	20.72	13.55
1923-24	9.76	—	19.06	29.43	26.70	14.61
1924-25	9.31	—	17.75	28.53	23.90	13.72
1925-26	9.50	—	17.95	25.56	19.19	13.70
1926-27	10.46	—	18.77	27.57	22.78	14.85
1927-28	10.50	—	18.52	31.16	21.39	14.96
1928-29	11.05	—	19.07	17.88	20.42	14.92

\* Factor for correction 1.502.

† No factor available.

## DEATH-RATE IN BRITISH, COLONIAL AND FOREIGN CITIES.

Appended, for purposes of comparison, are particulars as to the "Death-rate per 1,000 from All Causes" in large cities in other parts of the world:—

Greater London (i.e., Metro- politan and City Police Districts) ... ..		JOHANNESBURG—	
11.6 (1928)		Whites ... ..	11.05 (1928-29)
"Great Towns" of England and Wales ... ..		Natives ... ..	19.07 "
11.6 "		Eurafricans ... ..	17.88 "
9.2 (1928-29)		Asiatics ... ..	20.42 "
Durban ... ..		All Persons ... ..	14.92 "
8.42 "			
Kimberley ... ..			
13.8 "			
Bloemfontein ... ..			
8.9 "			
Capetown ... ..			
10.65 "			
Pretoria ... ..			
7.51 "			
Pietermaritzburg ... ..			
8.27 "			

Except in regard to South African Towns these figures are taken from the 4th Quarterly Returns of the Registrar-General for England and Wales, 1928.

## CAUSES OF DEATH.

The causes of and ages at death and the local distribution are analysed in the usual Tables A to D for "Whites," "Natives," "Eurafricans" and "Asiatics" respectively. For reasons of economy, these voluminous tables have not, however, been printed, but are available for inspection.

## FACTORS OF MORTALITY, 1926-27, 1927-28 AND 1928-29.

DISEASE		1926-27		1927-28		1928-29		DISEASE		1926-27		1927-28		1928-29	
		Deaths	Rates	Deaths	Rates	Deaths	Rates			Deaths	Rates	Deaths	Rates	Deaths	Rates
Enteric Fever ...	W.	29	0.16	19	0.10	26	0.14	Diseases of the Heart ...	W.	228	1.32	191	1.08	273	1.51
	N.	70	0.50	103	0.70	99	0.60		N.	100	0.71	68	0.46	132	0.90
	E.	1	0.07	—	—	5	0.29		E.	15	1.16	19	1.31	17	1.00
	A.	—	—	1	0.15	2	0.28		A.	8	1.31	7	1.09	17	2.42
Measles ...	W.	4	0.02	15	0.08	5	0.02	Acute Bronchitis ...	W.	32	0.18	37	0.20	24	0.13
	N.	6	0.04	20	0.13	7	0.04		N.	131	0.93	143	0.98	82	0.55
	E.	2	0.15	3	0.21	—	—		E.	28	2.18	31	2.19	12	0.70
	A.	1	0.16	1	0.15	1	0.14		A.	21	3.44	19	2.96	8	1.14
Scarlet Fever ...	W.	1	0.005	14	0.07	15	0.08	Chronic Bronchitis ...	W.	33	0.19	41	2.31	56	0.31
	N.	—	—	—	—	—	—		N.	13	0.09	17	0.11	17	0.11
	E.	—	—	—	—	—	—		E.	10	0.77	6	0.42	5	0.29
	A.	—	—	—	—	—	—		A.	5	0.81	—	—	3	0.42
Whooping Cough ...	W.	11	0.06	19	0.10	11	0.06	Pneumonia ...	W.	195	1.13	260	1.47	271	1.50
	N.	27	0.19	13	0.08	13	0.08		N.	655	4.68	742	5.09	804	5.48
	E.	4	0.31	3	0.21	1	0.05		E.	78	6.07	63	4.46	56	3.29
	A.	3	0.49	—	—	2	0.28		A.	35	5.73	34	5.30	49	7.00
Diphtheria and Croup ...	W.	12	0.06	21	0.11	15	0.08	Silicosis ...	W.	75	0.43	64	0.36	40	0.22
	N.	1	0.007	—	—	4	0.02		N.	24	0.17	24	0.16	11	0.07
	E.	1	0.07	—	—	1	0.05		E.	4	0.31	3	0.21	1	0.05
	A.	1	0.16	—	—	—	—		A.	1	0.16	—	—	—	—
Influenza ...	W.	17	0.09	21	0.11	26	0.14	Other Respiratory Diseases ...	W.	37	0.19	32	0.17	32	0.17
	N.	16	0.11	16	0.10	13	0.08		N.	44	0.31	33	0.22	23	0.15
	E.	1	0.07	2	0.14	1	0.05		E.	4	0.31	2	0.14	3	0.17
	A.	1	0.16	1	0.15	1	0.14		A.	—	—	1	0.15	3	0.42
Tuberculosis of Lungs ...	W.	64	0.37	53	0.29	51	0.28	Diarrhoea and Enteritis ...	W.	171	0.99	106	0.59	116	0.63
	N.	195	1.30	172	1.16	190	1.29		N.	424	3.02	338	2.32	370	2.52
	E.	28	2.18	21	1.20	24	1.41		E.	61	4.74	66	4.67	51	3.00
	A.	5	0.81	5	0.78	7	1.00		A.	19	3.11	19	2.96	10	1.42
Other Forms of Tuberculosis...	W.	11	0.06	13	0.07	5	0.02	Acute Nephritis and Bright's Disease ...	W.	90	0.52	90	0.50	88	0.55
	N.	103	0.73	112	0.76	92	0.62		N.	55	0.39	69	0.47	59	0.40
	E.	6	0.43	9	0.63	5	0.29		E.	4	0.31	5	0.35	4	0.23
	A.	1	0.16	1	0.15	4	0.57		A.	3	0.49	8	1.09	3	0.42
Cancer ...	W.	151	0.87	138	0.78	170	0.94	Congenital Malformation Premature & Early Infancy	W.	110	0.63	93	0.52	138	0.76
	N.	20	0.14	21	0.14	28	0.19		N.	122	0.87	90	0.61	149	1.01
	E.	11	0.85	8	0.33	10	0.58		E.	32	2.48	12	0.84	38	2.11
	A.	2	0.32	1	0.15	3	0.42		A.	7	1.14	1	0.15	6	0.85
Meningitis ...	W.	30	0.11	36	0.20	55	0.30	Violent Deaths	W.	97	0.56	134	0.75	158	0.87
	N.	85	0.60	87	0.59	73	0.49		N.	269	1.94	269	1.84	301	2.05
	E.	2	0.15	9	0.56	4	0.23		E.	16	1.24	12	0.84	19	1.11
	A.	1	0.16	2	0.31	3	0.42		A.	6	0.98	4	0.62	5	0.71
Cerebral Haemorrhage and Softening	W.	80	0.46	75	0.42	62	0.34								
	N.	27	0.19	18	0.12	23	0.15								
	E.	7	0.54	6	0.42	5	0.29								
	A.	2	0.32	2	0.31	1	0.14								

The following observations are suggested by inspection of this table:—

(1) That during 1928-29 the chief factors of mortality were:—

(a) For Whites.—Heart diseases (273), pneumonia (271), cancer (170), violent deaths (158), congenital debility (138), diarrhoea and enteritis (116), acute nephritis and Bright's disease (88), cerebral haemorrhage (62), chronic bronchitis (56), meningitis (55), tuberculosis of lungs (51), silicosis (40), other respiratory diseases (32), influenza (26), enteric fever (26), diphtheria (15), and scarlet fever (15).

(b) *For Natives*.—Pneumonia (804), diarrhoea and enteritis (370), violent deaths (301), tuberculosis of lungs (190), congenital debility (149), heart diseases (132), enteric fever (99), other forms of tuberculosis (92), acute bronchitis (82), meningitis (73), acute nephritis and Bright's disease (59), other respiratory diseases (23), cerebral hæmorrhage (23), chronic bronchitis (17), whooping cough (13), influenza (13), and measles (7).

(c) *For Eurafrians*.—Pneumonia (56), diarrhoea and enteritis (51), congenital debility (38), tuberculosis of lungs (24), violent deaths (19), heart diseases (17), acute bronchitis (12), cancer (10), and chronic bronchitis (5).

(d) *For Asiatics*.—Pneumonia (49), heart diseases (17), diarrhoea and enteritis (10), acute bronchitis (8), tuberculosis of lungs (7), and violent deaths (5).

(2) That the comparison with the two previous years is as follows:—

(a) *As regards Whites*, the principal increases are in respect of heart disease, 273 as compared with 191 in 1927-28 and 228 in 1926-27; pneumonia, 271 as compared with 260 in 1927-28 and 195 in 1926-27; violent deaths, 158 as compared with 134 in 1927-28 and 97 in 1926-27; chronic and acute bronchitis, 80 as compared with 78 in 1927-28 and 64 in 1926-27; meningitis, 55 as compared with 36 in 1927-28 and 30 in 1926-27; and cancer, 170 as compared with 138 in 1927-28 and 151 in 1926-27. The mortality from the exanthematous diseases is small, 15 deaths from scarlet fever being recorded. The rate from enteric fever is higher than in 1927-28, and lower than 1926-27, being 0.14 as compared with 0.10 and 0.16.

(b) *As regards Natives*, the principal increases are in respect of pneumonia, 804 as compared with 742 in 1927-28 and 665 in 1926-27; diarrhoea and enteritis, 370 as compared with 338 in 1927-28 and 424 in 1926-27; and violent deaths, 301 as compared with 269 in 1927-28 and 269 in 1926-27. There has also been an increase in diarrhoeal disease, tuberculosis of lung, congenital debility and heart disease.

(c) *As regards Eurafrians*, the principal increases are in respect of congenital debility, 38 as compared with 12 in 1927-28 and 32 in 1926-27; and tuberculosis of lung, 24 as compared with 21 in 1927-28 and 28 in 1926-27. Decreases are recorded in respect of pneumonia, chronic bronchitis, diarrhoea and enteritis and pneumonia.

(d) *As regards Asiatics*, increase has occurred in respect of pneumonia, 49 as compared with 34 in 1927-28 and 39 in 1926-27. Decreases are recorded in respect of acute bronchitis, diarrhoea and enteritis.

Adverting to the Table of Deaths and Death-Rates (page —), it will be noted that in all classes, though the total deaths in 1928-29 exceeded those in 1927-28 by 100, and those in 1926-27 by 316, the death-rate (14.92) is slightly lower than in 1927-28, when it was 14.96, and slightly higher than in 1926-27, when it was 14.85.

A glance at the same figures for pneumonia (page —), reveals that both the incidence and death-rates are increasing. In 1926-27, 963 deaths from pneumonia and acute bronchitis occurred, in 1927-28, 1,099, and in 1928-29, 1,180. The latter figure represents 22.5 per cent. of the total deaths, and exposes indubitably that pneumonia is much the most formidable disease in Johannesburg. The deaths from diseases of the heart also show a remarkable increase, numbering 351 in 1926-27, 285 in 1927-28, and no less than 439 in 1928-29. The incidence of violent deaths also shows a substantial increase on previous years, no doubt due, at least in some degree, to an increase in traffic accidents.

#### INFANTILE MORTALITY, MATERNAL MORTALITY AND MATERNITY AND CHILD WELFARE MEASURES.

*Infantile Mortality*, i.e., deaths of infants under one year per each 1,000 births registered, was: Whites 72.77, Eurafrians 175.12, and Asiatics 116.90.

The following table shows the white infantile mortality rate in recent years:—

1921-22	1922-23	1923-24	1924-25	1925-26	1926-27	1927-28	1928-29
86.60	88.26	81.2	78.55	74.01	83.29	83.39	72.77

This year's infantile mortality rate is the lowest on record for the city. Whilst admitting that this rate is capable of still further diminution, it can only be regarded as very satisfactory, more particularly in view of the exceptionally high birth-rate (25.95) for the year. In addition, as a factor in the increase in

population, it will bear favourable comparison with most towns with an even lower infantile mortality rate. It is generally conceded that a high birth-rate results in a higher infantile mortality rate than when the birth-rate is low. That such a result is not inevitable is very clearly indicated by the position in Johannesburg, where the birth-rate is high and the infantile mortality rate at least comparatively low.

#### MATERNAL MORTALITY.

	Puerperal Sepsis per 1,000 Births		Other Causes per 1,000 Births		All Causes per 1,000 Births	
	Joh'burg	E. & W.	Joh'burg	E. & W.	Joh'burg	E. & W.
1914-15	1.46	1.63 (1914)	1.94	2.32	3.40	3.95
1915-16	1.44	1.56 (1915)	2.16	2.38	3.60	3.94
1916-17	1.45	1.47 (1916)	2.18	2.40	3.63	3.87
1917-18	1.43	1.39 (1917)	2.85	2.27	4.28	3.66
1918-19	0.71	1.35 (1918)	2.63	2.20	3.35	3.55
1919-20	1.38	1.76 (1919)	4.38	2.36	5.76	4.12
1920-21	1.42	1.87 (1920)	3.31	2.25	4.73	4.12
1921-22	1.34	1.46 (1921)	2.90	2.25	4.25	3.71
1922-23	1.47	1.46 (1922)	3.23	2.12	4.72	3.58
1923-24	1.49	1.30 (1923)	4.96	2.30	6.45	3.60
1924-25	1.26	1.39 (1924)	4.79	2.50	6.06	3.89
1925-26	1.50	1.56 (1925)	4.00	2.51	5.50	4.07
1926-27	1.72	1.59 (1926)	1.97	2.52	3.69	4.11
1927-28	3.33	1.56 (1927)	1.90	2.55	5.23	4.11
1928-29	1.49	—	2.35	—	3.85	—

The rate for 1928-29 is, with the exception of that of 1926-27, very much lower than the rates in the last ten years. It is satisfactory to note that the fall is due principally to the diminution of maternal deaths from puerperal sepsis.

Without in any way wishing to minimise the influence of improvements in general sanitation, housing, sewerage extension, etc., etc., which undoubtedly do affect both the infantile and maternal mortality rates, it is considered that these substantial reductions in both cases are a reflex of the policy of the Council in extending its Maternal and Infant Welfare activities and in providing adequate ante-natal facilities both in the form of ante-natal nurses and ante-natal clinics.

DISTRIBUTION OF INFANTILE MORTALITY IN DISTRICTS OF JOHANNESBURG.

	1926-27				1927-28			1928-29		
	Births	Deaths under 1 year	Rate per 1,000 Births	Births	Deaths under 1 year	Rate per 1,000 Births	Births	Deaths under 1 year	Rate per 1,000 Births	
1.—Johannesburg Proper ... ..	67	10	149.25	54	8	148.14	112	11	125.00	
2.—Braamfontein, Hospital Hill and Hillbrow	835	37	44.31	992	39	39.31	1,044	38	36.39	
3.—Ferreiras, Marshalls and City and Suburban ... ..	52	8	153.85	57	7	122.80	36	11	305.55	
4.—Newtown, Fordsburg and Mayfair ...	331	51	154.07	362	41	113.25	385	41	106.49	
5.—Vrededorp and Malay Location ... ..	220	41	186.36	199	18	90.45	257	31	120.62	
6.—Jeppes, Jeppes Exten., Belgravia, etc. ...	613	38	61.99	645	46	71.31	707	40	56.57	
7.—Doornfontein, Troyeville, Kensington and Bezuidenhout Valley Districts ...	537	37	68.90	525	54	102.87	533	38	71.29	
8.—Berea, Yeoville, Bellevue and North-Eastern Districts ... ..	217	12	55.09	205	16	78.04	235	16	68.08	
9.—Richmond, Auckland Park, Parktown and North-Western Districts ... ..	483	48	99.37	483	52	107.66	552	42	76.08	
10.—Paarlshoop and Western Mines ... ..	73	5	68.49	49	6	123.27	60	5	83.33	
11.—Central Mines (Ferreira to City and Suburban) ... ..	34	6	176.47	32	—	—	28	3	107.14	
12.—Prospect Township and Eastern Mines ...	34	5	147.05	41	7	170.73	79	5	63.29	
13.—Ophirton, Booyens and Southern Dist.	562	40	71.17	553	56	101.26	644	56	86.95	
TOTALS ... ..	4,058	338	83.29	4,197	350	83.39	4,672	340	72.77	

## MATERNITY AND CHILD WELFARE MEASURES.

The following table summarises the attendances at the Post-Natal and Ante-Natal Clinics and the work of the Health Visitors in their districts:—

## 1.—GENERAL SUMMARY.

First Visits	Number of		Mothers referred to		Infants sent to Children's Hospital and O.P.D.	Infants Reported to Children's Aid Society	Mothers Attending		Cases Referred to Pediatric Officer	Ante-Natal Clinic	Assisted at Clinics
	Re-visits		Maternity Hospital	District Midwife			Welfare Clinics	Health Visitors' Office			
1,962	6,815		188	150	236	9	22,573	222	706	429	5,571

## 2.—BIRTHS INVESTIGATED.

Legitimate; 1,912.				Illegitimate; 52				Full Time; 1,937.				Premature; 27				Stillborn; 25.			
Doctor	Attended by			Condition of Mother				Condition of Infant				Condition of Home							
	Midwife		Friends	Good	Fair	Poor	Sick	Good	Fair	Poor	Sick	Dead	Good	Fair	Bad	Clean	Dirty		
	Trained	Untrained																	
200	1,170	779	13	1,876	46	13	27	1,892	11	10	12	39	1,626	311	27	1,938	4		

Legitimate: 1,912.

Illegitimate: 52

Full Time: 1,937.

Premature: 27

Stillborn: 25.

## 3.—METHODS OF FEEDING.

Breast Milk	Cow's Milk	Tinned Milk	Breast and Complemental	Other Foods	Feeding Bottles				Comforter Used
					Pattern		Condition		
					Good	Bad	Good	Bad	
1,789	27	10	40	8	68	—	67	1	420

*Breast Feeding.*—The percentage of wholly or partially breast-fed children is well maintained, being 93·2 per cent. of the total.

#### STAFF AND CLINICS.

*Health Visitors.*—The Council employs six Health Visitors, who are engaged largely in post-natal measures. All are qualified general nurses and midwives and hold the certificate of the Royal Sanitary Institute for Health Visitors and School Nurses. Infant Clinics are conducted at the New Market Buildings, Milner Park School, Jeppes Central School, the Dutch Medium School, Turffontein, and Newlands English Medium School. At the New Market Clinic, which is the most central and largest clinic, the Department's official work is assisted by members of the Women's National Service Fund, who provide teas and undertake the issue of the foodstuffs and medical comforts provided by the Council and the making of layettes from material supplied by the Council. At this clinic one or other of the Health Visitors gives regular health talks to the mothers attending. Nursery classes, both for toddlers and older children, are very popular and are conducted by the voluntary social workers.

*Ante-Natal Nurses.*—There are two District Midwifery Centres—Western and Central—and four Ante-Natal Nurses (two at each centre) are employed in ante-natal and midwifery work. These Ante-Natal Nurses are qualified general nurses and midwives. They extend ante-natal care to expectant mothers in the homes, shepherd these mothers to the Ante-Natal Clinics, arrange for their confinement in the Queen Victoria Maternity Hospital when desired, or themselves conduct the confinements in the homes.

Two Ante-Natal Clinics are conducted on Tuesday and Friday afternoons at the New Market Buildings. The attendance, shown in the General Summary above, is increasing rapidly, and little difficulty is experienced in obtaining the attendance of expectant mothers at these Clinics. A Pediatric Officer attends all Post-Natal Clinics, and two Obstetric Officers attend the Ante-Natal Clinics and render assistance, when necessary, at the confinements which the Ante-Natal Nurse conduct. During the year the Ante-Natal Nurses attended 108 confinements, and paid 1,154 visits to expectant mothers in their homes.

#### HEALTH PROPAGANDA.

The Department's activities on propaganda lines were continued during the year. The principal means of propaganda were:—

- (a) Compilation and distribution of leaflets on health subjects.
- (b) Exhibition of posters.
- (c) Publication and distribution of booklets on diverse health subjects.
- (d) Exhibition of posters and slogans by means of illuminated and mechanical machines.

The usual Health Exhibit at the Witwatersrand Agricultural Society's Show was not staged this year for the reason that the preparation of such an Exhibit and attendance thereat involves absence from other duties of the majority of the staff for the best part of a fortnight. For that reason, it is not possible to stage such an Exhibit every year, but a certain amount of time was expended by most members of the staff in the preparation of models, etc., etc., which will be utilised in an even more elaborate Exhibit in the Society's Show in 1930.

No Fly Competition was held this year, but by authority of the Public Health Committee this competition will be resumed in 1929-30.

#### PNEUMONIA.

The death-rates per 1,000 from this disease are as follows:—

	Whites	Natives	Eurafricans	Asiatics	England and Wales
1920-21 ... ..	0·76	2·69	3·17	2·58	0·99 (1920)
1921-22 ... ..	0·77	2·70	1·81	2·58	0·91 (1921)
1922-23 ... ..	0·45	2·26	2·49	2·58	1·07 (1922)
1923-24 ... ..	0·68	2·73	2·38	2·42	0·87 (1923)
1924-25 ... ..	0·71	2·82	2·31	2·86	1·00 (1924)
1925-26 ... ..	1·06	4·42	4·71	3·03	0·95 (1925)
1926-27 ... ..	1·13	4·68	6·07	5·73	0·82 (1926)
1927-28 ... ..	1·47	5·09	4·46	5·30	0·94 (1927)
1928-29 ... ..	1·50	5·48	3·29	7·00	—

As in previous years, pneumonia and acute lung conditions are responsible for nearly one quarter of the total deaths, viz., 22.5 per cent. Deaths from these causes would appear to be progressively increasing every year and the rate for the current year is the highest recorded for the past ten years for all sections of the population except Eurafricans.

It is difficult to suggest measures of prevention for these acute conditions, but it is thought that the community would suffer less in this respect if less "wrapping" up in unnecessary clothing were practiced, and more care were taken by individuals when suffering from the milder forms of influenza and the "common cold," which are too frequently neglected and are often the precursors of more acute conditions.

#### MINERS' PHTHISIS, ROCK-DRILL PNEUMONIA OR SILICOSIS.

52 deaths (40 Whites, 11 Natives and 1 Eurafrican) were registered during 1928-29 as compared with 104 (75 Whites, 24 Natives, 4 Eurafricans and 1 Asiatic) and 91 (64 Whites, 24 Natives and 3 Eurafricans) in 1926-27 and 1927-28 respectively.

This rate is much lower than for the two preceding years. The decrease in White deaths is gratifying and gives indubitable proof that underground conditions are much improved.

#### ORGANIC DISEASES OF THE HEART.

These heart affections include pericarditis, endocarditis, angina pectoris, valvular diseases and other diseases of the circulatory system. The deaths recorded during the year 1st July, 1928, to 30th June, 1929, were 273 for Whites, as compared with 228 and 191 for the two previous years. This figure represents a rate of 1.51 per 1,000 as against 2.49 for England and Wales in 1927. For Natives the rate was 0.90; for Eurafricans 1.00; and for Asiatics 2.42.

#### DIARRHOEAL DISEASES.

The following are the mortality rates per 1,000 of population for the period under notice:—

	Whites	Natives	Eurafricans	Asiatics	Great Towns in England and Wales
1920-21 ... ..	1.05	1.37	4.08	4.62	0.27 (1920)
1921-22 ... ..	0.81	1.52	5.90	4.25	0.45 (1921)
1922-23 ... ..	0.93	1.48	3.44	4.43	0.19 (1922)
1923-24 ... ..	0.68	2.09	6.09	3.92	0.21 (1923)
1924-25 ... ..	0.64	2.03	5.93	4.20	0.19 (1924)
1925-26 ... ..	0.59	2.30	5.54	2.69	0.21 (1925)
1926-27 ... ..	0.99	3.02	4.74	3.11	0.21 (1926)
1927-28 ... ..	0.59	2.32	4.67	2.96	0.15 (1927)
1928-29 ... ..	0.63	2.52	3.00	1.42	—

#### MALIGNANT DISEASE OR CANCER.

During 1928-29 the deaths from cancer numbered 212 Whites (including 42 non-residents), 43 Natives (including 15 non-residents), 10 Eurafricans, and 3 Asiatics, as compared with 170 Whites (including 32 non-residents), 27 Natives (including 6 non-residents), 9 Eurafrican (including 1 non-resident) and 1 Asiatic in 1927-28 and 191 Whites (including 40 non-residents), 28 Natives (including 8 non-residents), 13 Eurafricans and 2 Asiatics in 1926-27.

Of the 212 Whites, 116 were males and 96 females, and 202 were over the age of 35 years, the rates being 0.76, 0.78 and 0.94 for the three years respectively, as compared with 1.81 per 1,000 for England and Wales in 1927.

In the following table is set forth the part of the body affected:—

	Whites			Natives			Eurafricans			Asiatics		
	1926-27	1927-28	1928-29	1926-27	1927-28	1928-29	1926-27	1927-28	1928-29	1926-27	1927-28	1928-29
Stomach ... ..	102	97	90	5	5	11	5	5	4	1	—	2
Womb ... ..	23	20	34	3	1	7	3	3	1	—	—	—
Breast ... ..	11	16	18	1	1	2	1	—	2	—	—	—
Liver ... ..	12	8	17	14	17	22	—	1	1	—	1	1
Neck and Throat ...	20	7	4	1	—	—	—	—	—	1	—	—
Mouth ... ..	1	2	4	—	1	—	—	—	—	—	—	—
Tongue ... ..	3	11	2	—	—	—	2	—	—	—	—	—
Lung ... ..	2	1	7	—	—	—	—	—	—	—	—	—
Rectum ... ..	1	2	10	—	1	1	—	—	—	—	—	—
Prostate ... ..	2	—	1	—	—	—	—	—	—	—	—	—
Head and Face ... ..	3	—	5	2	—	—	1	—	1	—	—	—
Bladder ... ..	3	—	5	1	—	—	1	—	—	—	—	—
Bones ... ..	2	1	—	—	—	—	—	—	—	—	—	—
Colon ... ..	2	—	5	—	—	—	—	—	1	—	—	—
Heart ... ..	—	—	1	—	—	—	—	—	—	—	—	—
Leg ... ..	—	1	2	—	—	—	—	—	—	—	—	—
Hand ... ..	—	—	1	—	—	—	—	—	—	—	—	—
Shoulder ... ..	—	—	1	—	—	—	—	—	—	—	—	—
Ear ... ..	—	1	—	—	—	—	—	—	—	—	—	—
Kidney ... ..	1	—	3	1	—	—	—	—	—	—	—	—
Glands ... ..	1	1	—	—	—	—	—	—	—	—	—	—
Spine ... ..	1	—	—	—	—	—	—	—	—	—	—	—
Unspecified ... ..	1	2	2	—	1	—	—	1	—	—	—	—
Total ... ..	191	170	212	28	27	43	13	9	10	2	1	3

As will be observed there is a considerable increase in the deaths of Natives from this group of diseases.

#### MEASLES.

The death-rates per 1,000 were as follows:—

	1924-25	1925-26	1926-27	1927-28	1928-29
Whites ... ..	0.05	0.01	0.02	0.08	0.02
Natives ... ..	0.01	0.07	0.04	0.13	0.04
Eurafricans ... ..	0.02	—	0.15	0.21	—
Asiatics ... ..	—	—	0.16	0.15	0.14
Great English Towns ...	0.13 (1925)	0.08 (1926)	0.09 (1927)	0.15 (1928)	—

#### VENEREAL DISEASE.

131 White and 1,296 Coloured cases of syphilis and other venereal diseases from Johannesburg were treated at Rietfontein Hospital during the year 1928-29.

#### VENEREAL CLINIC.

*Statistical Report of Director for period 1st July, 1928, to 30th June, 1929.*

#### 1.—SUMMARY.

Out Patients		Specimens		Salvarsan	
No. of New Patients	No. of Attendances	No. sent to Institute	No. Examined at Clinic	No. of Patients treated with 606 or Substitutes	No. of Doses Administered
1,151	10,228	629	381	759	4,035

## 2.—ATTENDANCES AND DISEASES (OUT PATIENTS).

Attendances of New Patients								Attendances of Old Patients							
Gonorrhœa		Syphilis		Soft Chancere		Not V.D.		Gonorrhœa		Syphilis		Soft Chancere		Not V.D.	
M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F
744	83	183	145	28	2	42	6	3,591	456	3,009	1,729	136	7	70	12

## 3.—LABORATORY. NUMBER OF SPECIMENS EXAMINED AND RESULTS OF EXAMINATION.

Clinic						Institute										Total Number of Specimens Examined
Gonococci		Spirochaetes		Others		Gonococci		Spirochaetes		Wasserman Test						
+	-	+	-	+	-	+	-	+	-	+++	++	+	-	?		
153	140	11	25	31	41	13	27	2	3	209	20	13	286	36		
															1,010	

## REMARKS:—

## 1. ATTENDANCES OF PATIENTS.

- Compared with the previous year 223 fewer new cases attended.
- The total attendances, however, were somewhat greater than during the previous year.
- The average number of injections given to each patient suffering from syphilis was greater than previously. This is an encouraging sign since it points to the realization by patients of the necessity for prolonged treatment.

## 2. THE NEW DEPARTMENT.

The Department has been entirely re-organised and is now housed literally in the heart of the Johannesburg Hospital. The arrangements, which are infinitely more convenient both for patients and staff, will be described in detail in an illustrated brochure shortly to be published.

HENRY GLUCKMAN,  
Director.

OPHTHALMIA NEONATORUM.  
CASES NOTIFIED.

	1926-27	1927-28	1928-29
<b>Ophthalmia Neonatorum—</b>			
Whites ... ..	29	18	6
Natives ... ..	—	2	2
Eurafricans ... ..	—	—	1
Asiatics ... ..	—	—	—
	29	20	9
<b>Gonorrhoeal Ophthalmia—</b>			
Whites ... ..	6	6	6
Natives ... ..	—	—	3
Eurafricans ... ..	—	1	—
Asiatics ... ..	—	—	—
	6	7	9
<b>All Cases—</b>			
Whites ... ..	35	24	12
Natives ... ..	—	2	5
Eurafricans ... ..	—	1	1
Asiatics ... ..	—	—	—
	35	27	18

The ophthalmias constitute a very large proportion of subsequent cases of blindness. For that reason the substantial decrease in the number of notified cases of ophthalmia is of some import. Alluding to the above table, we find that these notifications are in the vicinity of 50 per cent. less than in the two preceding years. This decrease, it is thought, reflects advances in the ante-natal work of the Council and the increased attendance of female patients at the Special Treatment Centre.

NOTIFIABLE INFECTIOUS DISEASES.

During the year under notice, 3,097 cases were notified, viz., 1,779 amongst Whites, 1,275 amongst Natives, 28 amongst Euraficans, and 15 amongst Asiatics. These occurrences are discussed elsewhere in this Report.

The procedure adopted in regard to notified infectious diseases, disinfection, etc., has been the same as recorded in previous years.

1,800 houses and 27,000 articles of clothing, bedding, etc., were disinfected.

SMALL-POX.

No cases of this disease were reported during the year.

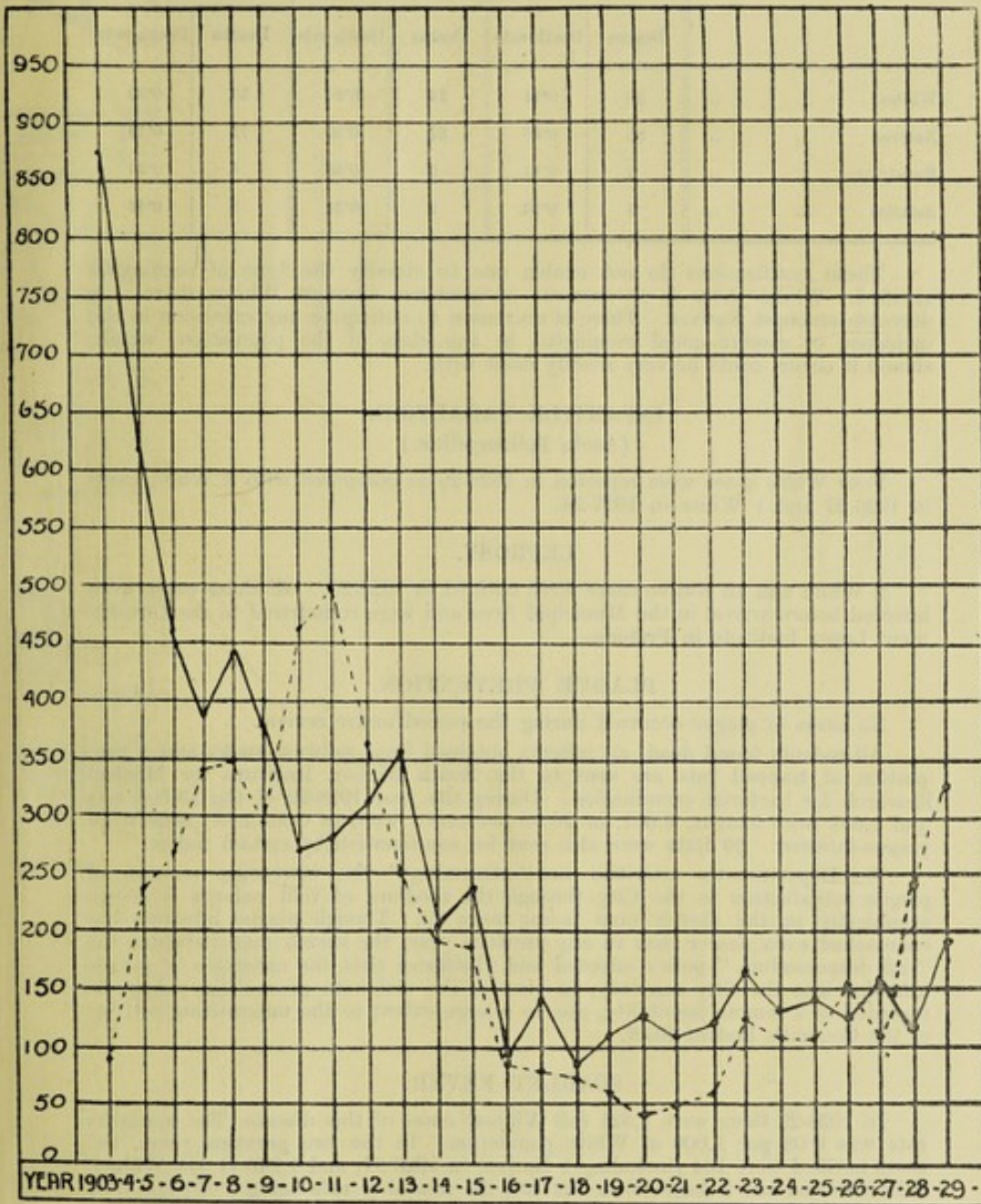
ENTERICA.

In the following is set forth the number of cases, and deaths, together with the case-rate per cent. and the death-rate per 1,000, and the death-rate for England and Wales.

	1926-27				1927-28				1928-29			
	Cases	Deaths	Case-rate %	Death-rate	Cases	Deaths	Case-rate %	Death-rate	Cases	Deaths	Case-rate %	Death-rate
Whites ... ..	159	29	18·23	0·16	120	19	15·83	0·10	182	26	14·28	0·14
Natives ... ..	114	70	61·40	0·50	244	103	42·21	0·70	328	99	30·18	0·60
Eurafricans ... ..	3	1	33·33	0·07	6	—	—	—	11	5	45·45	0·29
Asiatics ... ..	—	—	—	—	4	1	25·00	0·15	3	2	66·66	0·28
England and Wales ...				0·01 (1927)				0·01 (1928)				

As will be seen from the above table the incidence of enterica in all classes has increased. In South African urban areas, typhoid infection is largely a matter of fly infection, except, perhaps, amongst natives in the mines. Excluding the mine incidence, I am of opinion that the increase in the White incidence is largely due to the mistaken policy of the Council in determining a cessation (only temporarily, it is hoped) of fly destruction by the abolition of the usual annual Fly Competition. The increased incidence amongst mine natives is receiving careful consideration and investigation.

# Yearly Incidence of Enteric Fever in the 26 Years, 1903-4 to 1928-29.



Whites—Continuous Line.

Natives—Dotted Line.

Whilst the incidence in Whites has increased slightly, there has been a considerable increase of incidence in Natives.

## ERYSIPELAS.

27 White, 14 Native, 1 Eurafrian and 1 Asiatic cases of erysipelas were notified in 1928-29 as compared with 10 White and 18 Natives in 1926-27, and 29 White and 23 Native cases in 1927-28.

## MENINGITIS.

The following table shows the registered number of deaths, with death-rates, from meningitis during the triennium 1926-29:—

	1926-27		1927-28		1928-29	
	Deaths	Death-rate	Deaths	Death-rate	Deaths	Death-rate
Whites ... ..	30	0·11	36	0·20	55	0·30
Natives ... ..	85	0·60	87	0·59	73	0·49
Eurafricans ... ..	2	0·15	9	0·56	4	0·23
Asiatics ... ..	1	0·16	2	0·31	3	0·42

These notifications do not enable one to classify the type of meningitis notified. Whilst there is an increase of incidence amongst Whites there is a decrease amongst Natives. There is no reason to anticipate any extension in the incidence of cerebro-spinal meningitis in any class of the population, which, should it occur, could be very readily dealt with.

## INFANTILE PARALYSIS.

(Acute Poliomyelitis.)

Four White cases were reported in 1928-29 as compared with 3 White cases in 1926-27 and 1 White in 1927-28.

## LEPROSY.

2 White and 16 Native cases were notified in 1928-29. All these cases were infected before arrival in the Municipal Area and were transferred to the Government Leper Institute in Pretoria.

## PLAGUE PREVENTION.

No cases of plague occurred during the period under review.

All rodents found dead, all rodents obtained from railway trucks and a proportion of trapped rats are sent to the South African Institute for Medical Research for bacterial examination. During the year 1928-29 of the 13,605 rats and 1,801 mice caught, 3,661, or 26·98 per cent., were so examined; none were plague-infected. 69 Rats were also sent for examination by certain mines.

The Department's activities in "stemming" the increasing menace of plague introduction to the City through the medium of veld rodents is shown graphically in the sketch map facing page 20. Though plague infection has encroached even nearer than in any previous year, the sketch map indicates the "nil desperandum" policy adopted and illustrates that the extension of plague infection into the City can only, in view of the elaborate precautions taken, be regarded as a remote possibility, due to a large extent to the unremitting activity of the Council's Rodent Staff.

## SCARLET FEVER.

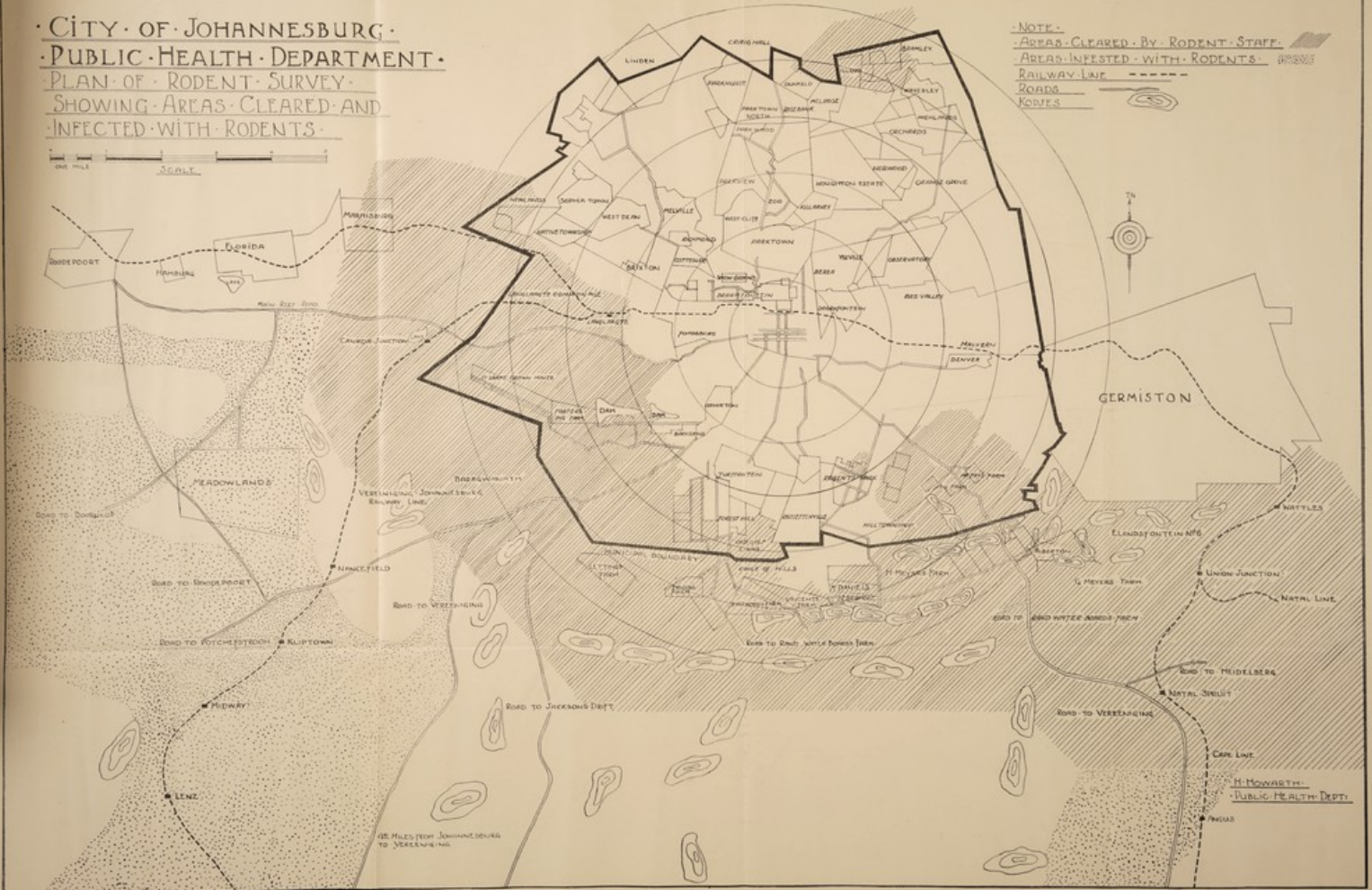
In 1928-29 there were 1,321 (all Whites) cases of this disease. The mortality rate was 0·08 per 1,000 of White population. In the two previous years, the cases notified were 134 (including 1 Native) in 1926-27, and 1,246 (1,241 Whites, 3 Euraficans and 2 Asiatics) in 1927-28, the mortality rate being 0·005 and 0·07 per 1,000 respectively. The rate per 1,000 in England and Wales for 1928 was 0·01.

## PERIOD OF ISOLATION FOR SCARLET FEVER.

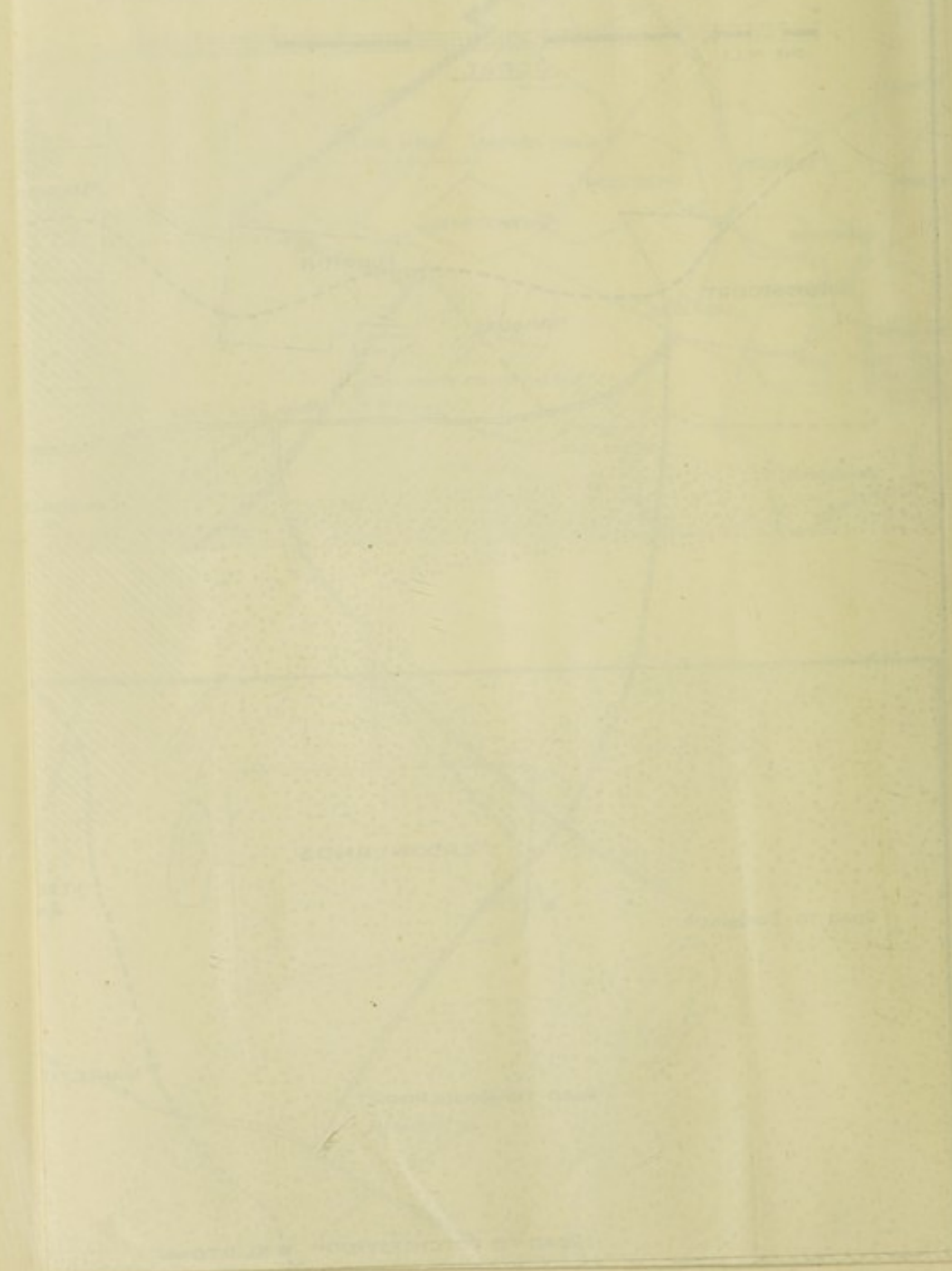
The isolation period for cases of scarlet fever, whether isolated "at home" or in the Fever Hospital has, for many years, been fixed at a minimum of 42 days. Obviously, such a lengthy period of isolation has given rise to many complaints, mostly from the parents of cases. This lengthy period of isolation undoubtedly raises two matters of import: (1) the Economic question, (2) the Educational handicap to sufferers.

(1) *The Economic Question.*—The economic factor affects primarily the Local Authority which provides isolation accommodation, though it also affects the cases which are compulsorily isolated in their own homes.

(2) *The Educational Handicap.*—There can be no doubt that a six weeks period of isolation is a serious handicap to many "attending school or classes" patients. In quite a number of cases it involves a set-back of a whole year to the unfortunate schoolboy or school girl.



CITY OF JOHANNESBURG  
PUBLIC HEALTH DEPARTMENT  
PLAN OF ROBERT SURVEY  
SHOWING AREAS CLARIFIED AND  
INFECTED WITH RODENTS



With a view to possible lessening of this six weeks isolation period, steps were taken in the year under review to ascertain the effects—in the matter of "return cases"—of making the isolation period some 30 or less days. So that something approaching diminution with public health safety might be attained the experimental steps have been continued over a fairly lengthy period. Those steps involved many throat examinations for the *Streptococcus Haemolyticus* of patients in the Fever Hospital awaiting discharge. Whilst the investigation is not yet complete the results so far go to show that in the near future a substantial reduction in the isolation period may be anticipated. For ready co-operation in an extended and laborious investigation the Department has to thank the officials of the S.A. Institute for Medical Research.

#### TYPHUS.

3 Native cases were reported in 1928-29 as against 4 Natives in 1926-27 and 12 Natives in 1927-28.

#### DIPHTHERITIC DISEASE, INCLUDING MEMBRANOUS CROUP.

The occurrences of diphtheritic disease in 1928-29 numbered 169 (159 Whites, 3 Natives, 3 Eurafricans and 4 Asiatics), in 1926-27, 131 (128 Whites and 3 Natives), and in 1927-28, 188 (187 Whites and 1 Native). The case mortality for Whites being 9.43, 9.37 and 11.22 per cent. for the respective years in order mentioned above, and the death-rate per 1,000 was 0.06 in 1926-27, 0.11 in 1927-28 and 0.08 in 1928-29, as compared with 0.06 for England and Wales in 1928.

#### PUERPERAL SEPTICÆMIA, ETC.

In 1928-29 53 cases (27 Whites, 15 Natives, 7 Eurafrican and 4 Asiatics) were reported, as compared with 27 (20 Whites, 6 Natives and 1 Asiatic) in 1926-27 and 31 cases (19 Whites, 11 Natives and 1 Asiatic) in 1927-28. The death rate for 1928-29 was 0.03 per 1,000 for Whites as against 0.05 in England and Wales in 1928.

#### ANTHRAX.

One Native case of this disease was notified in 1928-29.

#### INFLUENZA.

The number of registered deaths from influenza during the year was 26 Whites and 15 Coloured persons. These figures as compared with most years are insignificant.

#### ENCEPHALITIS LETHARGICA.

Three cases were notified in 1928-29, as against one each Native, Eurafrican and Asiatic case in 1926-27 and none in 1927-28. 5 White and 5 Native deaths were registered. The attention of medical practitioners is called to the fact that encephalitis lethargica is a notifiable disease.

#### TUBERCULOSIS.

Appended is a statistical summary of the mortality from tuberculosis in Johannesburg for the years 1926-27, 1927-28 and 1928-29.—

##### DEATH-RATE PER 1,000.

	Pulmonary Phthisis			Other Forms of Tuberculosis		
	1926-27	1927-28	1928-29	1926-27	1927-28	1928-29
<i>Johannesburg—</i>						
Whites ... ..	0.37	0.29	0.28	0.06	0.07	0.02
Natives ... ..	1.30	1.16	1.29	0.73	0.76	0.62
Eurafricans ... ..	2.18	1.20	1.41	0.46	0.63	0.29
Asiatics ... ..	0.81	0.78	1.00	0.16	0.15	0.57
<i>England and Wales ...</i>						
	1926	1927		1926	1927	
	0.771	0.791		0.190	0.181	

*Notification of Tuberculosis.*—819 notifications were received during 1928-29, namely, in regard to 19 Whites, 796 Natives and 4 Eurafricans.

## BACTERIOLOGICAL DIAGNOSIS.

The following are particulars of the specimens examined under this heading for the City Council at the South African Institute for Medical Research during the year 1928-29:—

Disease.	Positive.	Negative.	Doubtful.
Typhoid ... ..	519	2,459	13
Tuberculosis ... ..	422	13	—
Diphtheria ... ..	490	3,223	60
Anthrax ... ..	—	2	—
Meningitis ... ..	—	7	—
Gonococcus ... ..	6	8	—
Leprosy ... ..	6	42	—
Typhus ... ..	2	—	—
Bilharzia ... ..	—	1	—
Rabies ... ..	—	2	—
	1,445	5,757	73

The figures do not include rats examined for suspected plague (vide p. 20).

## ISOLATION HOSPITALS.

*Fever Hospital.*—The number of White cases treated at the new Fever Hospital in Johannesburg was 575, as follows: Diphtheria 128, scarlet fever 425, measles 16, chicken-pox 3, and mumps 3. 142 cases of scarlet fever were also treated at a temporary annexe.

The cost of the upkeep of the Fever Hospital for 1928-29 was £10,627 15s. 2d.; the Government refunded 50 per cent. of this amount.

*Springkell Sanatorium.*—8 non-miners suffering from tuberculosis were being treated at the Springkell Sanatorium on 1st July, 1928, and 19 fresh cases were sent there during 1928-29. 7 patients died and 12 left. The cost of treatment of these cases was £1,859 11s., of which Government refunded 50 per cent.

*Rietfontein Hospital.*—5 White cases of measles, 2 erysipelas, 1 chicken-pox, 1 suspect plague, and 28 Native cases of chicken-pox, 9 leprosy, 2 suspect small-pox, 16 measles, 3 diphtheria, 2 erysipelas, 4 typhus, 1 German measles, 2 whooping cough, 1 meningitis, 1 mumps, 2 suspect plague, and 1 scarlet fever, were removed for treatment to the Rietfontein Hospital. Rietfontein Hospital was paid £340 4s. for these services, 50 per cent. being refunded by Government.

## AMBULANCE REMOVALS.

During the period under review 20 White cases and 75 Coloured were removed to Rietfontein Hospital, 575 White cases to the Fever Hospital, and 142 to temporary Fever Hospital Annexe. In addition, 111 White patients were removed to the Johannesburg Hospital, 24 patients to the Non-European Hospital, 10 Whites to Springkell Sanatorium, 13 Whites to the Children's Hospital and 11 Whites to Private Hospitals. Six cases were also removed from outside districts at the request of, and on payment by, the local authorities concerned.

## NURSING HOMES.

There are 38 nursing homes in Johannesburg, all of which are periodically inspected by District Inspectors or Health Visitors and the Technical Medical Staff.

## LIVE STOCK MARKET AND PUBLIC ABATTOIR.

The following figures have kindly been supplied by the Director, Abattoir and Live Stock Market.

During 1928-29 1,155,982 animals passed through the Live Stock Yards, and 118,310 cattle, 362,449 sheep, etc., 12,928 calves and 73,183 pigs, or a total of 566,870 animals, were slaughtered at the Abattoir; 1,290,590 lbs. imported meat was inspected; and 1,592,418 lbs. meat was condemned.

## INSPECTION OF FOODSTUFFS.

The following goods were condemned by the Foods and Drugs Inspectors.—Fish, 40,574 lbs.; smoked fish, 218 boxes; sardines, 5 cases and 129 tins; cray-fish, 127; fillet, 1,158 boxes; herrings, 146 boxes; kippers, 81 boxes; fish, 127 bottles. During the period under review they passed 542,277 lbs. of bacon, etc., and 10,671,853 lbs. of fish.

## ANALYSIS OF FOODS, ETC.

*Milk.*—Appended is a tabulated summary of the results of analyses and prosecutions.

	1926-27	1927-28	1928-29
Number of Samples taken ...	298	544	530
Number examined bacterially .	31	45	—
Number deficient Solids-not Fat	21	16	38
Number deficient Fat ...	20	18	23
Number of Preservatives ...	—	—	4
Number of Prosecutions ...	17	14	8
Amount of Fines ...	£28	£27	£14 10s.

In addition to the 554 water examinations (see page 25), 678 articles of food, etc., were examined during 1928-29 at the Government Laboratories. Details are appended:—

Description.	Genuine or Pure.	Adulterated or Impure.
Milk ...	504	26
Sugar ...	20	—
Butter ...	28	—
Pepper ...	20	1
Corned Beef ...	2	—
Coffee ...	65	10
Flock ...	2	—

This is 3·21 samples per annum per 1,000 of the white population.

## MILK SUPPLIES AND DAIRY INSPECTION.

Milk control is exercised by inspection of dairies inside the Municipal Area and inspection of dairies outside the Area.

## (a) INSPECTION OF DAIRIES INSIDE THE MUNICIPAL AREA.

Apart from routine inspection of dairies by District Sanitary Inspectors, the following synopsis shows the inspections made and duties carried out by the City Dairy Inspector.

The number of dairies scored was 90, a decrease of 20 on the previous year. A tendency continues for town dairies either to give up keeping cows and to procure milk from outside, or themselves to move outside the City Area. The highest score was 93·75, and 78 dairies scored over 50 per cent. Of the dairies scored outside the City Area, numbering 29, the highest score was 99 and all scored over 50 per cent.

21 Raw milk depots were scored, the highest score being 98 per cent., and 4 Pasteurising milk depots were scored, the highest being 100 per cent.

Gold medals were awarded to the best dairy inside the area (with a score of 142·375 points out of a possible 160), the best dairy outside the area retailing milk within the area (150·875 points out of a possible 160), and the best raw milk depot (153·5 points out of a possible 160). Points were awarded for (a) Bacterial Content (b) Chemical Analysis, and (c) Visible Dirt tests, in conjunction with the quarterly score-card figures.

225 Visible dirt tests were made, 3 prosecutions were instituted, and fines ranging from £1 10s. to £5 were imposed.

There has been a considerable improvement in the results of these tests, and it is the practice where milk showing signs of visible dirt is sold by other than the producer, to trace the milk to its source and deal with the producer as well as the seller.

A number of students from the Union Agricultural Colleges have been conducted on tours of educational inspection over a number of the City's high-class dairy farms inside and outside the area, and distributing depots within the area.

Thanks are due to the owners of these farms and depots who so kindly allowed their premises to be used for these visits.

#### (b) INSPECTION OF DAIRIES OUTSIDE THE MUNICIPAL AREA.

With regard to outside dairies the following particulars are submitted:—

*Situation of Dairy Farms.*—The dairy farms supplying milk to Johannesburg are situated in the districts of Ermelo, Standerton, Bethal, Losberg, Potchefstroom, Witwatersrand, Pretoria, Rustenburg, Heidelberg, Witbank and the northern part of the O.F.S.

*Applications for Permits to Introduce Milk into Johannesburg.*—319 applications for permits to introduce milk were received. Of this number 298 were granted and 21, which did not comply with the Council's requirements, were refused.

*Licences to Retail Milk.*—37 applications for licences to retail milk within the Municipal Area were received from dairy farmers. All were granted.

*Control of Milk Supplies.*—Periodical visits were made to the railway stations within Johannesburg and those in outside districts with the object of checking supplies of milk arriving in or being consigned to Johannesburg. It was found that eight unpermitted supplies were being introduced, and these were prohibited immediately.

*Inspections.*—During the period under review 1,897 inspections of farm dairies were made.

*Score Card Inspections.*—Under this system 37 outside dairies licensed to retail milk in Johannesburg were inspected and scored quarterly. The highest score was 98 per cent., the lowest 85 per cent., and the average of all scores 86 per cent., which is likely to be still further improved upon.

*Quantity of Milk Introduced into Johannesburg per Diem.*—Approximately 14,000 gallons of milk per day are introduced into Johannesburg from outside dairy farms. The results of analysis show that the quality of milk generally is highly satisfactory. Two farmers, who continued to send in adulterated milk, after being warned, had their permits cancelled.

*Tests for Visible Dirt in Milk.*—348 tests for Visible Dirt in milk were carried out on the dairy farms, also at railway stations and milk depots within the Municipal Area. The results generally were satisfactory. This test is still the most effective means of ascertaining whether or not the methods employed in the production of milk are efficient. There is a great improvement in the cleanliness of the city's milk supply since the test was adopted. When the test, which is infallible, was unsatisfactory the producer was dealt with immediately.

*Widal Tests.*—316 persons employed in the production of milk were subjected to this test. Two were found to be positive to the test and were removed for treatment and isolation.

*Fallacy of Widal Test.*—In one dairy 10 employees gave negative Widal results. Shortly after the test was made, 7 cases of typhoid fever occurred amongst the customers of this dairy. The 10 employees were then subjected to the Complement Fixation Test, when one was found to be a reactor and was removed for treatment. Whilst the Widal Test is a useful general test, it must always in the event of milk outbreaks be supplemented by the Complement Fixation Test.

*Milk from Plague-Infected Farm.*—Two supplies of milk from a large farm in the northern Free State were prohibited from entering Johannesburg until such time as the farm was declared free from plague infection.

*Plans of Modern Dairy Buildings.*—Plans of cowsheds, milkrooms, etc., continue to be issued free of charge by the Department to Dairy Farmers on application. The stanchion system of stalling cows, which is specially designed to ensure cleanliness and comfort of the animals, is steadily gaining favour, and is a feature of the advance of clean milk production.

It is desired to express appreciation of the manner in which the great majority of dairy farmers endeavour to comply with the requirements of the Council's By-laws and of their genuine efforts to provide a clean milk supply for Johannesburg.

Thanks are also due to officials at railway stations, and particularly those at Kazerne and Park Station for willing assistance and co-operation in milk inspection on railway property.

#### WATER SUPPLY.

Water is supplied in bulk by the Rand Water Board to the City Council. The Council controls the distribution of water throughout the City and owns the reticulation. The following table shows the quantity and percentage of water pumped from various sources by the Rand Water Board and is taken from the Twenty-fourth Annual Report of the Chief Engineer, Rand Water Board:—

Source	Total Quantity Pumped during Year ending 31st March, 1929	Percentages
	Gallons	
From Zwartkopjes ... ..	648,091,000	11·20
From Zuurbeekom ... ..	1,639,533,000	28·35
From Local and Town Supplies: From Ellis Park and Natal Spruit ...	22,626,000	0·39
From Vaal River ... ..	3,474,614,000	60·06
Grand Total ... ..	5,784,864,000	100·00

The length of mains within the Municipal Area is now 477·31 miles, 13·80 miles having been added during 1928-29, while during the same period 1,873,461,450, or 5,132,750 gallons of water per day, were supplied to consumers connected to same.

#### CHEMICAL AND BACTERIOLOGICAL EXAMINATIONS.

554 samples of water were taken for examination during the year 1928-29.

It is desired to acknowledge the obligation of the City to the officials of the Rand Water Board, who are at all times so assiduous in securing an adequate and pure supply of water to the City.

#### SEWERAGE.

The City Engineer has kindly supplied the following information:—

On 30th June, 1929, there were 233·46 miles of sewers completed.

On the same date 24,758 premises had been connected.

It is noteworthy that the Council continues to pursue a progressive policy in regard to sewerage extension and that it has in hand the establishment of up-to-date sewage disposal works as an auxiliary to the out-of-date methods of sewage disposal at the Klipspruit Sewage Farm. The increase in "premises connected" is substantial, and it is hoped will continue to increase "pari passu" with the extension of available connections.

#### MINES SANITATION.

The usual procedure has been carried out in regard to systematic inspections of the mining properties in the Johannesburg area.

This work has included frequent inspections of all Native compounds, hospitals and locations, married and single White quarters, contractors' compounds, brickfields, dairies and cowsheds, Native eating houses, stone crushing works, mine boarding houses, railway stations and quarters, pumping and power stations, disposal of refuse, the sanitary arrangements at the various works and the supervision of the daily cleaning up and scavenging at all places and premises on the surface.

All plans submitted in regard to new, or additions and alterations to existing housing accommodation, drainage or other sanitary requirements have been examined by the Medical Officer of Health and amended when necessary.

All cases of infectious disease among Whites, Natives and Coloured persons have been visited, inquired into and reported on in the usual way.

As the result of reports and suggestions made by your Inspectors, considerable improvements have been effected throughout the various mining properties during the year.

#### UNDERGROUND SANITATION.

Systematic inspections are made in regard to underground sanitation of all mining properties in the Johannesburg area. This supervision includes the inspection of all sanitary arrangements on all levels, working places, stations; the inspection of disused stopes, ladderways, etc., and the provision of suitable drinking water supplies on each level.

It is very satisfactory to be able to report that the work of supervising sanitary work and cleansing methods underground is carried out by white men, and there is no doubt that this accounts for the general high standard which has been maintained throughout the year.

It is desired to acknowledge the ready, reasonable and sympathetic attitude of Mine Managers in regard to requirements called for by the department.

The Government Mining Engineer and the Director of Native Labour have been kept in close touch with the general work of mine sanitation under the department's direction.

#### HOUSING AND INSANITARY PROPERTIES.

It has been an accepted fact for many years past that in Johannesburg there is no lack of White Housing Accommodation and that the real problem is the elimination of native slums. The present provisions of the Natives (Urban Areas) Act have, however, proved something of a stumbling block in obtaining the desired elimination of slums occupied by natives, but it is hoped that in the near future amendments to this Act will enable the existing slum conditions to be effectively dealt with. During the year under review, progress has been made both in dealing with slums by means of Closing Orders under the Local Government Ordinance No. 11 of 1926, and under Section 124 of the Public Health Act. Closing Orders were obtained in respect of 58 of the worst and most extensive insanitary properties in the City, and 233 "minor" slums were dealt with under the Public Health Act.

# ANNUAL RECORD OF DUTIES PERFORMED BY DISTRICT INSPECTORS ONLY.

From 1st July, 1928, to 30th June, 1929.

INSPECTIONS.			
Animals, improperly kept ...	231	Water Closets Disconnected ...	30
Bioscopes ... ..	268	Wells and Boreholes ... ..	488
Buildings—		Yards and Courts ... ..	5,531
Repairs to ... ..	1,077	Unspecified ... ..	1,937
Unauthorised ... ..	231	CYANIDE FUMIGATIONS—	
Catchpits and Gullies ... ..	986	Supervised ... ..	2,440
Drainage ... ..	659	INFECTIOUS DISEASES—	
Closets and Urinals ... ..	5,515	Cases Investigated ... ..	383
Earth Closets, additional provided ... ..	87	Visits re Isolation and Contacts ... ..	317
Flies ... ..	302	PLANS EXAMINED ... ..	174
French Drains ... ..	865	LICENSING COURT ... ..	264
Houses—		LICENSED PREMISES—	
Dwellings ... ..	12,227	Aerated Water and Ice Factories ... ..	292
Re-visits ... ..	3,626	Asiatic Eating Houses ... ..	218
Interviews—		Bakeries ... ..	912
Owners, Agents, etc. ... ..	2,448	Barbers' Shops ... ..	1,280
Manure ... ..	897	Boarding Houses ... ..	602
Mosquitoes ... ..	71	Butchers' Shops ... ..	3,862
Native Housing ... ..	4,069	Cowsheds ... ..	1,891
Poultry ... ..	13	Dairies ... ..	2,357
Refuse—		General Dealers ... ..	3,194
Accumulations ... ..	754	Hotel Dining Rooms ... ..	591
Tips ... ..	185	Ice Creameries ... ..	785
Unsatisfactory removal of ...	237	Kaffir Eating Houses ... ..	1,790
Rats ... ..	81	Laundries ... ..	738
Roads ... ..	516	Lodging Houses ... ..	248
Slopwater—		Milk Shops ... ..	1,980
Tank Leakage ... ..	102	Noxious Trades ... ..	1,212
Septic Tanks ... ..	6	Nursing Homes ... ..	311
Slum Properties ... ..	2,564	Private Cows ... ..	1,630
Show Duty ... ..	150	Restaurants ... ..	1,509
Smoke Nuisances ... ..	74	Tea Rooms ... ..	3,027
Stables ... ..	2,133	NOTICES SERVED—	
Storm Water ... ..	133	Statutory ... ..	1,353
Treasury—Miscellaneous ... ..	76	Others ... ..	1,407
Water Supply ... ..	195	PROSECUTIONS—	
Water Closets, additional provided ... ..	113	Attendance at Court ... ..	183

## LICENSED PLACES.

From 1st July, 1928, to 30th June, 1929, 4,876 applications for licences of various kinds have been dealt with, the premises in question being in all cases carefully examined as to sanitary requirements.

	1928-29		
	Granted	Refused or not taken out	Total
1. Tea Shops, Eating Houses, Restaurants, etc.	1,167	187	1,354
2. Dairies ... ..	264	40	304
3. Milk Shops ... ..	309	60	369
4. Butchers' Shops ... ..	612	84	696
5. Private Cowkeepers ... ..	212	38	250
6. Bakers and Confectioners ... ..	107	12	119
7. Permits to introduce Milk ... ..	247	58	305
8. Kaffir and Asiatic Eating Houses ... ..	173	59	232
9. Nursing Homes ... ..	38	12	50
10. Laundries ... ..	67	30	97
11. Ice Creameries ... ..	349	31	380
12. Noxious or Offensive Trades ... ..	279	47	326
13. Aerated Water and Ice Factories ... ..	25	1	26
14. Hairdressers and Barbers ... ..	344	18	362
15. Lodging House ... ..	5	1	6
	4,198	678	4,876

## PROSECUTIONS.

Ninety-eight persons were prosecuted for various breaches of the Public Health Act and By-laws, 93 were convicted, and fines aggregating £211 were imposed. Particulars are appended:—

By-laws Infringed.	Race of Accused.			Totals.
	Whites.	S.A. Coloured	Asiatic.	
Prevention of Nuisances ...	31	—	4	35
Sale of Food and Drugs ...	17	2	10	29
Dairies and Milk Shops ...	15	2	—	17
Butchers ... ..	2	—	—	2
Kaffir Eating Houses ...	9	—	1	10
Tea Rooms ... ..	2	—	—	2
Laundry ... ..	—	—	1	1
Bakery ... ..	1	—	1	2
Totals ...	77	4	17	98
RESULTS—				
Convicted and Fined ...	67	4	15	86
Convicted and Cautioned	6	—	1	7
Dismissed ... ..	4	—	1	5
Withdrawn ... ..	—	—	—	—
Prohibition Order Granted	5	—	1	6
AMOUNT OF FINES ...	£167 19 0	£18 0 0	£25 10 0	£211 0 0

This work is supervised by the Medical Officer of Health, under whose directions proofs of evidence, summonses, subpoenas and charge-sheets are prepared and handed to the Council's Solicitors.



