

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

## **Contributors**

Johannesburg (South Africa)

## **Publication/Creation**

Johannesburg : [Municipal Printer], [1914]

## **Persistent URL**

<https://wellcomecollection.org/works/rgtawkwv>

## **License and attribution**

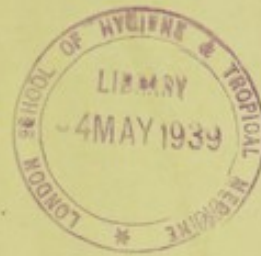
This work has been identified as being free of known restrictions under copyright law, including all related and neighbouring rights and is being made available under the Creative Commons, Public Domain Mark.

You can copy, modify, distribute and perform the work, even for commercial purposes, without asking permission.

**wellcome  
collection**

Wellcome Collection  
183 Euston Road  
London NW1 2BE UK  
T +44 (0)20 7611 8722  
E [library@wellcomecollection.org](mailto:library@wellcomecollection.org)  
<https://wellcomecollection.org>

AC. 166



# Municipal Council of Johannesburg.

REPORT of the MEDICAL OFFICER OF  
HEALTH on the PUBLIC HEALTH and  
SANITARY CIRCUMSTANCES of JOHAN-  
NESBURG during the Year, 1st JULY  
1913—30th JUNE 1914.


TO WHICH IS APPENDED

A STATISTICAL STATEMENT as to THE HEALTH of the  
NATIVES EMPLOYED BY THE COUNCIL.

CHARLES PORTER, M.D., D.P.H., *Barrister-at-Law,*  
*Medical Officer of Health and Hon. Cons. Medical Officer to the Rand Water Board*  
*and to the Rand Central School Board.*

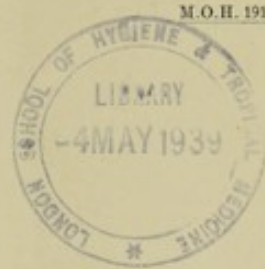
JOHANNESBURG,  
*Printed by* 1915.

JOHANNESBURG :  
E. H. ADLINGTON & Co., PRINTERS.



Digitized by the Internet Archive  
in 2019 with funding from  
Wellcome Library

<https://archive.org/details/b31487816>



# Municipal Council of Johannesburg.

---

## REPORT of the MEDICAL OFFICER OF HEALTH on the PUBLIC HEALTH and SANITARY CIRCUMSTANCES of JOHAN- NESBURG during the Year, 1st JULY 1913—30th JUNE 1914.

TO WHICH IS APPENDED

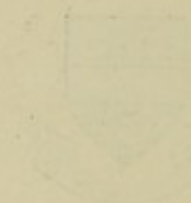
A STATISTICAL STATEMENT as to THE HEALTH of the  
NATIVES EMPLOYED BY THE COUNCIL.

CHARLES PORTER, M.D., D.P.H., *Barrister-at-Law,*  
*Medical Officer of Health and Hon. Cons. Medical Officer to the Rand Water Board*  
*and to the Rand Central School Board.*

JOHANNESBURG,  
~~1914~~ FEBRUARY, 1915.

JOHANNESBURG :  
E. H. ADLINGTON & Co., PRINTERS.





Municipal Council of Johannesburg.

REPORT OF THE MEDICAL OFFICER ON  
HEALTH OF THE PUBLIC HEALTH AND  
SANITARY CIRCUMSTANCES OF JOHANNESBURG  
DURING THE YEAR 1914  
1913-30th JUNE 1914

A STATISTICAL STATEMENT AS TO THE HEALTH OF  
NATIVES EMPLOYED BY THE COUNCIL

Printed and Published by the Municipal Council of Johannesburg,  
at the Municipal Printing Works, Johannesburg.  
1914.

## INDEX.

	PAGES.		PAGES.
Abattoir ... ..	27, 28, 29	Ice Factories ... ..	32
Adulteration of Foodstuffs, etc. ... ..	30	Illegitimate Births ... ..	7
Aerated Water Factories ... ..	32	Important Matters for Special Attention ... ..	45
Altitude ... ..	5	Infantile Mortality ... ..	6, 8, 10, 11
Ambulances ... ..	26	Infectious Diseases, Notifiable ... ..	23
Analysis of Foods ... ..	30	Inspection of Foodstuffs ... ..	30
Analysis of Milk ... ..	29	Inspectors ... ..	43, 44
Analysis of Water ... ..	31	Intakes for Nightsoil and Slopwater ... ..	32
Anthrax ... ..	23	Introduction ... ..	6
Area ... ..	5	Isolation Hospital ... ..	26
Attention, Matters for Early ... ..	45		
		Joseph, Mr. F. H. ... ..	23
Bacteriological Diagnosis ... ..	27	Latitude ... ..	5
Bakehouses ... ..	41	Leprosy ... ..	23
Birth-rate ... ..	7	Licensed Places ... ..	41
Birth-rate, Relation to Infant Mortality ... ..	7	Locations ... ..	40
Births, Illegitimate ... ..	7	Longitude ... ..	5
Cancer ... ..	20	Malaria ... ..	23
Carcass Removal ... ..	40	Malignant Disease or Cancer ... ..	20
Causes of Death ... ..	9	Marriage Rate ... ..	5, 7
Census, 1911 ... ..	5	Marriages ... ..	7
Chief Sanitary Inspector ... ..	44	Matters for Early Attention ... ..	45
Clerical Staff ... ..	44	Measles ... ..	22
Coloured Infantile Mortality ... ..	11	Meat Inspection ... ..	28, 29
Correction Factor ... ..	5	Mehliss, Dr. M. ... ..	20
Curative Sera ... ..	27	Membranous Croup ... ..	21
		Meningitis ... ..	16, 17
Dairies ... ..	29	Milk Analysis ... ..	29
Death-rates ... ..	6, 8	Milk Shops ... ..	29
Death-rates, Foreign ... ..	8	Milk Supply ... ..	29, 45
Deaths, Causes of ... ..	9	Miners' Phthisis ... ..	19
Destructors ... ..	40	Mines' Sanitation ... ..	33, 34
Diarrhoeal Diseases ... ..	15, 16	Mortality amongst Mine Natives ... ..	12
Diphtheria ... ..	21	Mortality amongst Mine Natives (Tables) ... ..	12
Disinfection ... ..	6, 23, 24, 25, 26	Mortality amongst Native and Coloured Infants ... ..	11
Disinfection of Pails ... ..	40	Mortality Factors ... ..	10
Disinfecting Station ... ..	23	Mortality, Infantile ... ..	6, 10, 11
Districts of Inspectors ... ..	44	Moses vs. Municipality of Boksburg ... ..	39
		Municipal Natives, Health of ... ..	46-49
Efficiency of Disinfection ... ..	6, 23, 24, 25, 26		
Enteric Fever ... ..	6, 15	Natives, Health of Municipal ... ..	46-49
Erysipelas ... ..	21	Natives, Mortality amongst Mine ... ..	12
Expenditure ... ..	43	Nightsoil Intakes ... ..	32
		Nightsoil Removal ... ..	32, 40
Factor for Correction ... ..	5, 8	Norwood Destructor ... ..	40
Factors of Mortality ... ..	9, 10	Notifiable Diseases ... ..	23
Food Inspection ... ..	30	Notifiable Diseases Tables ... ..	opposite 23
Foods, Analysis of ... ..	30	Notification of Tuberculosis ... ..	19
Foreign Death-rates ... ..	8	Number of Houses ... ..	5
		Nursing Homes ... ..	27
Gavin, Mr. F. C., M.R.C.V.S. ... ..	39		
Government Census ... ..	5	Organic Diseases of Heart ... ..	20
Government Schools ... ..	41		
		Pails, Disinfection of ... ..	40
Hardness of Water ... ..	31, 32	Persons Married ... ..	5
Health of Municipal Natives ... ..	46-49	Phthisis ... ..	17, 18, 19
Health Visitors ... ..	13	Phthisis, Miners' ... ..	19
Heart Disease ... ..	20	Pitchford, Dr. Watkins ... ..	23
Hospital Isolation ... ..	26	Plague Prevention ... ..	22
House-refuse Removal ... ..	39	Pneumonia ... ..	14
Houses, Number of ... ..	5	Population ... ..	5, 6, 7
Houses Unfit for Habitation ... ..	6, 35, 36, 37	Printing, Hygiene of ... ..	34
Housing and Town Planning Act, 1909 ... ..	36	Property Condemned ... ..	42
Housing of Natives ... ..	37, 38, 39, 45	Prosecutions ... ..	42
Housing of the Working Classes Act, 1890 ... ..	35	Puerperal Septicæmia ... ..	22
Hygiene of Printing ... ..	34		

## INDEX—(Continued).

	PAGES.		PAGES.
Races ... ..	5	Surface Sanitation of Mines ... ..	33, 34
Race Distinction ... ..	5	Syphilis ... ..	20
Rat Destruction ... ..	22	Town Planning Act, 1909, Housing and ... ..	36
Rate ... ..	5	Tables, Statistical ... ..	opposite 9
Rateable Value ... ..	5	Tuberculosis ... ..	17, 18, 19
Receiving Hospital ... ..	26	Tuberculosis and Notification ... ..	19
Refuse Removal ... ..	39	Typhoid Fever ... ..	6, 15
Refuse Tip ... ..	39	Underground Sanitation in Mines ... ..	34
Rheumatism ... ..	20	Vaal River Scheme, Water ... ..	31
Roodepoort Temporary Scheme, Water ... ..	31	Venereal Disease ... ..	20
Scarlet Fever ... ..	21	Waste Water Removal ... ..	32
Scavenging ... ..	39	Water Analysis ... ..	31
Scavenging, Cost of ... ..	40	Water Carriage System of Sewage Disposal ... ..	32
Schools ... ..	41	Water, Hardness of ... ..	31, 32
Sera, Curative ... ..	27	Water, Roodepoort Temporary Scheme ... ..	31
Sewage Disposal ... ..	33, 45	Water Supply ... ..	30, 31, 32
Sewerage ... ..	32	Water, Vaal River Scheme ... ..	31
Silicosis ... ..	19	Zuurbekom ... ..	30
Slopwater Intakes ... ..	32	Zwaartkopjes ... ..	31
Slopwater Removal ... ..	32		
Slum Property ... ..	6, 35, 36, 37, 45		
Smith, Mr. J. I., M.R.C.V.S. ... ..	27		
Staff ... ..	43, 44		
Statistics ... ..	5		
Stock, Dr. P. G., Report on Health of Natives			
Street Sweeping ... ..	39		
Summary of Statistics ... ..	5		



# SUMMARY OF STATISTICS

M.O.H. 1913-14

FOR THE

Statistics.

## MUNICIPALITY OF JOHANNESBURG.

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

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

*Altitude.*—The population of Johannesburg resides at a mean elevation of 5,850 feet.

*Area.*—The Area of the Municipality of Johannesburg is 52,330 acres (*vide Government Gazette*, October, 1903); the extreme length, 11½ miles; extreme breadth, 9½ miles; extent of perimeter, 41½ miles.

*Houses.*—At the Census in May, 1911, there were within this area 27,285 occupied houses. There were also 1,074 unoccupied houses and 412 in course of erection.

*Annual Rateable Value.*—The annual rateable value of property within the Municipality of Johannesburg, as assessed in accordance with Ordinance 43 of 1903, 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 1913-14, £33,262,837.

The Town Council can impose a rate not exceeding 3d. in the £. The rate for 1913-14 was 2½d. in the £. Rate produced £377,925 13s. 8d.

### POPULATION—YEAR 1913-14.

YEAR.	Whites.	Natives.	Eurafricans.	Asiatics.	Total Persons.
1911-12 Government Census (May 7th, 1911) ...	129,601	104,974	14,300		248,875
Estimated for 1913-14 ...	134,000	104,974	14,300		253,274

	1910-11.	1911-12.	1912-13.	1913-14.
MARRIAGES ...	1,634	1,632	1,553	1,616
PERSONS MARRIED ...	3,268	3,264	3,106	3,292
MARRIAGE RATE per 1,000 population (white) ...	29.21	25.1	23.17	24.56
BIRTHS (white) ...	3,996	4,361	4,310	4,271
BIRTH-RATE per 1,000 population (white)	35.7	33.6	32.16	31.87

DEATH-RATES.	Whites.		Natives.	Eurafricans.	Asiatics.	All Persons.
	Gross.	*Corrected for Age and Sex distrib.				
1903-4 ...	17.2	—	32.4		19.5	23.9
1904-5 ...	15.2	21.12	29.3		7.3	20.8
1905-6 ...	17.5	24.3	32.4		11.3	22.9
1906-7 ...	13.0	—	28.6		24.4	20.8
1907-8 ...	12.6	—	29.3		24.1	21.0
1908-9 ...	14.1	—	31.3		14.7	22.1
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		18.2
1912-13 ...	10.52	12.10	27.63	23.21		18.68
1913-14 ...	8.98	10.32	16.34	21.19		12.66

\* Factor for correction 1.1502.



M.O.H. 1913-14 To HIS WORSHIP THE MAYOR OF JOHANNESBURG  
(NORMAN ANSTEY, Esq.).

Introductory.

MR. MAYOR.—I have the honour to submit my REPORT FOR THE OFFICIAL YEAR 1913-14. Its GENERAL ARRANGEMENT follows that adopted on previous occasions, and its somewhat belated presentation is due to my absence on vacation leave in July and August 1914, and the fact that duties in connection with the Department of Defence have occupied much time since 1st October 1914.

A preliminary STATISTICAL SUMMARY for 1913-14 was, however, circulated to the Council on 6th July 1914, and more careful examination of the sanitary circumstances of the period under review justifies the opinion then expressed that the year's record, so far as it can be correctly indicated by statistics, was exceptionally satisfactory; whilst, as regards notifiable infectious disease, there was nothing to record in the way of an epidemic.

The POPULATION for 1913-14 is estimated at 253,274, of which Whites numbered 134,000. The WHITE DEATH-RATE, corrected for age- and sex-distribution, was 10·32 per 1,000 persons living; and the INFANTILE MORTALITY (p. 11) was 85 per 1,000. Both these rates are the lowest on record, compare favourably with those of other large South African towns, and more than favourably with the Great Towns of England and Wales. As one is accustomed to hearing uninformed allegations as to the supposed "high death-rate" and "alarming infantile mortality" of Johannesburg, these figures, as well as the record of recent previous years, are illuminating. The DEATH-RATE from ENTERIC or TYPHOID FEVER amongst Whites fell from 0·37 in the previous year to 0·09, the lowest previous rate being 0·15 in 1909-10. It cannot, however, be hoped that these exceptionally low rates for 1913-14 will be invariably maintained; for the present they are rather to be looked upon as a highwater mark which may be reached at intervals.

METHODS OF DISINFECTION.—During the year, question arose as to the efficiency of the methods employed at the Steam Disinfecting Station, Vrededorp. At pages 23-26 are recorded the results of a valuable investigation into these methods by Dr. Watkins Pitchford, Director of the South African Institute for Medical Research, and the consequent modifications and precautions which have been adopted.

ABOLITION OF SLUMS AND HOUSING OF NATIVES.—The Council and its officials are frequently criticised adversely in connection with these matters. It does not, however, appear to be generally known that, for want of a good Public Health and Town Planning Act (which there has been no opportunity hitherto of obtaining from the Union Parliament), the Council is quite without the necessary powers to tackle either of these problems effectively. At pages 35-39 I have, therefore, set out, in some detail, the actual position in this respect, and it is hoped that much-needed powers will be acquired as soon as practicable.

ACKNOWLEDGMENTS.—I beg to record my thanks to Dr. Watkins Pitchford (Director of the South African Institute for Medical Research) and to Dr. McCrae (Government Analyst) for continued co-operation. I am also much indebted to my very competent Staff for their excellent and ever-willing work, and to my colleagues for their friendly co-operation.

I have the honour to be, MR. MAYOR,

Your obedient servant,

CHARLES PORTER,

*Medical Officer of Health.*

30th April, 1915.

# REPORT

OF

## MEDICAL OFFICER OF HEALTH

For Period from 1st July, 1913, to 30th June, 1914.

### POPULATION.

For the purposes of this Report, the population of the Municipal Area of Johannesburg is taken as—

Whites	134,000
Natives	104,974
Eurafricans and Asiatics	14,300
Total	<u>253,274</u>

### MARRIAGES.

From 1st July, 1913, to 30th June, 1914, the number of white marriages registered was 1,646, equal to a marriage rate of 24.56 per 1,000. The rate per 1,000 in "London" was 19.19 in 1914, and 18.31 in 1913.\*

During the same period 161 coloured marriages were registered.

### BIRTHS.

From 1st July, 1913, to 30th June, 1914, the number of white births registered was 4,271.

The white birth-rate was high, being equal to 31.87 per 1,000 for 1913-14. For "The 97 Great Towns" of England and Wales, in 1914 the birth-rate was 25.0.

During the same period 1,030 native and coloured births were registered, but as adult native and coloured females number only 6,364 against 90,469 adult coloured males, it would merely mislead to strike a birth-rate.

*Illegitimate Births.*—These numbered 138 for the year 1913-14, and during this period constituted 3.23 per cent. of all births, as against 3.8 in London in 1912.

In the consideration of vital statistics, a correct appreciation of the influence of birth-rate upon death-rate is essential. In large towns, "high death-rates go with high birth-rates. High death-rates, however, are not the result of high birth-rates—they are more generally caused by bad sanitary conditions. Populations having a continuously high birth-rate should (sanitary conditions being equal) have lower death-rates than populations having low birth-rates; for if, year by year, the births exceed the deaths amongst a population, not only are additional children under 5 years of age, whose mortality is high, added to the population, but a still larger increase of those between 10 and 40, whose mortality is low, takes place, and counterbalances the other; whilst the proportion of old people over 55 to the total population is diminished. Conversely, a continuously low birth-rate means a small proportion of young adults and a large proportion of old people, and is therefore unfavourable to a low death-rate."—(*Newsholme.*)

\* Vide Registrar-General's Annual Summary for 1913.



M.O.H. 1913-14

## DEATHS.

Deaths.  
Infantile  
Mortality.

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.

RACE.	DEATHS.		DEATH-RATE per 1,000.		
	Total.	Of Non-Residents.	Gross Recorded.	Excluding Non-Residents.	Corrected for Age and Sex Distribution.
1913 to 1914—					
Whites ... ..	1,297	93	9.67	8.98	10.32
Natives ... ..	1,774	68	16.89	16.34	
Eurafricans ... ..	220	12	21.60	21.19	
Asiatics ... ..	89	—			
All Persons ... ..	3,380	173	13.34	12.66	

In order to neutralise the errors in comparison of death-rates arising from variations in sex and age constitution of the population of different towns, the Registrar-General of England and Wales has calculated a series of "factors" by which the recorded death-rates of the "Great Towns" can be multiplied, so as to make them correctly comparable. Dr. G. D. Maynard, Census Supervisor, 1910, kindly worked out similar "factors for correction" for the white population of Johannesburg. They were as follows: For Males, 1.1806; Females, 1.1552; Persons, 1.1502 (*vide Census Report, 1910, Table IX.*).

INFANTILE MORTALITY, *i.e.*, deaths of infants under 1 year per each 1,000 births registered:—

RACE.	1909-10.	1910-11.	1911-12.	1912-13.	1913-14.
Whites ... ..	117	110	114	99.53	84.99
Natives and Euraficans ... ..	369	326	361	296.43	267.15
Asiatics ... ..	252	295	194	246.17	385.51

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:—

	1913.		1913.
Greater London ( <i>i.e.</i> , Metropolitan and City Police Districts) ... ..	14.2	Alexandria ... ..	32.4
"96 Great Towns" of England and Wales ... ..	14.3	Durban ... ..	8.6 (1913-14)
Bombay (including plague deaths)	29.6	Capetown ... ..	11.35
Paris ... ..	14.7	New York ... ..	12.7
Berlin ... ..	13.3	New Orleans ... ..	19.4
Trieste ... ..	20.8	<b>JOHANNESBURG—</b>	
Vienna ... ..	14.0	Whites ... ..	8.98 (1913-4)
Petrograd ... ..	20.7	Natives ... ..	16.34 ( " )
Moscow ... ..	22.0	Coloured and Asiatics ... ..	21.19 ( " )
Cairo ... ..	33.0	All Persons ... ..	12.66 ( " )

Except in regard to Durban and Capetown, these figures are taken from the Annual Summary of the Registrar-General for England and Wales, 1913.

TABLE A.

Return of Deaths among the European Population for the 12 Months ending 30th June, 1914.

No.	CAUSES OF DEATH.	All Ages	Under 1 year.	1-5 years.	5-15 years.	15-25 years.	25-35 years.	35-45 years.	45-65 years.	65 and upwards.	NUMBER OF DISTRICT.													Hospital.	Non-Resident.	Unknown.	Total.		
											I.	II.	III.	IV.	V.	VI.	VII.	VIII.	IX.	X.	XI.	XII.	XIII.						
1	Typhoid or Enteric Fever	14		1	2	6	3	2			2		1		1	1		3	1	2	2					1		14	
2	Typhus Fever																												
3	Malaria																												
4	Smallpox	7																											
5	Measles																												
6	Scarlet Fever	7	2	4	1								2																
7	Whooping Cough	13	2	2	2								1		2	1	4	3	5	1	1								
8	Diphtheria and Croup	22	10	6	6								1		2	1	4	3	5	1	1								
9	Influenza	14	1	7	3								1		1	1													
10	Asiatic Cholera	1																											
11	Cholera Nostralis																												
12	Other Epidemic Diseases	1		1																									
12a	Dysentery	22		5	1																								
12b	Plague	5																											
12c	Erysipelas	5																											
13	Tuberculosis of Lungs	62		2		4	21	19	14	2	11	11	5	5		4	7	8	1										
14	Tuberculosis of other Organs	1																											
15	Other forms of Tuberculosis	5																											
16	Cancer and other Malignant Tumours	79		1		2	13	48	18	9	2	5	11																
17	Simple Meningitis	22	13	1	1	2	3	1	1		3	3	3	3		5													
18	Cerebral Haemorrhage and Softening	39				1	3	9	20	6	9	4	7	5	1	1	4	1	3										
19	Organic Diseases of the Heart	105	3	2	5	9	7	23	44	12	7	8	19	10	2	11	11	8	4	2	2	3	14						
20	Acute Bronchitis	15	8	3	1																								
21	Chronic Bronchitis	16				1																							
22	Pneumonia	113	20	6	2	6	18	23	30	8	18	9	5	13	12	9	8	13	7	4	2	1	7						
23	Other Diseases of the Respiratory System (Tuberculosis excepted)	94	20	15	2	2	15	21	17	2	8	3	9	15	9	14	5	2	9	1	4	3	8						
24	Diseases of the Stomach (Cancer excepted)	3				1	2																						
25	Diarrhoea and Enteritis (under 2 years)	132	120	12																									
26	Appendicitis and Typhlitis	17		1	2	2	5	4	3																				
27	Hernia, Intestinal Obstruction	8					2	2	1	3	1																		
28	Cirrhosis of the Liver	8					1		7																				
29	Acute Nephritis and Bright's Disease	36		2	6	3	2	7	15	1	6	1																	
30	Non-cancerous Tumours and other Diseases of the Female Genital Organs	5				1	2	1	1																				
31	Puerperal Septicæmia (Puerperal Fever, Puerperal Typhoid, Puerperal Cholera)	4				2	2																						
32	Other Puerperal Accidents of Pregnancy and Labour	18				1	10	5	2																				
33	Congenital Debility and Malformations	160	149	11																									
34	Senile Debility	19																											
35	Violent Deaths (Suicides excepted)	86	2	11	7	17	23	16	9	1	5	6	6	6		11	7	6	7										
36	Suicides	34	1			9	6	9	8	1	9	1	4	3	2		2		4										
37	Other Diseases	92	3	5	6	8	15	21	21	13	21	14	6	3	1	8	15	3	1	3									
37a	Glanders and Anthrax																												
37b	Tetanus																												
37c	Beri Beri																												
37d	Syphilis	2	1																										
37e	Rheumatism	8				3		1	1	2																			
37f	Scruvy																												
37g	Convulsions of Infants	6	5	1																									
38	Unknown or Ill-defined Diseases	2	2																										
	TOTALS	1,297	363	106	51	74	156	190	264	93	146	105	102	126	87	120	133	84	87	41	24	28	119			93	2	1,297	

DISTRICT No. 1 includes that portion of Johannesburg (from Randspasagte) south of the Railway and north of Commissioner Street.  
 DISTRICT No. 2 includes Braamfontein, Hospital Hill and Hillbrow.  
 DISTRICT No. 3 includes Marabell Town and City and Suburban.  
 DISTRICT No. 4 includes Ferreira, Fordeburg and Mayfair.  
 DISTRICT No. 5 includes Newtown, Frelshoop, the Cemetery and the Locations.  
 DISTRICT No. 6 includes Jeppe, Jeppe Extension, Belgavia, etc.  
 DISTRICT No. 7 includes Doornfontein, New Doornfontein, Bertrams, Lorentville, Judith Park, Troyeville, Kensington Estate and Bezenbosch Valley Township.

DISTRICT No. 8 includes Berea, Yeoville, Bellevue, Bellevue East and North-Eastern suburban portion.  
 DISTRICT No. 9 includes Auckland Park, Richmond, Melville, Newlands, Claremont and North-Western suburban portion.  
 DISTRICT No. 10 includes Pearl's Hoop and Mieses from Robinson westwards to boundary.  
 DISTRICT No. 11 includes Central Mieses (from Ferreira to City and Suburban).  
 DISTRICT No. 12 includes Prospect Town, Deuror and the Mieses from Meyer and Charlton to Eastern boundary.  
 DISTRICT No. 13 includes Ophardt, Rooyens, Turfontein, Rosettenville, etc. (Southern suburban portion).



Journal of the ...

...

Return of Deaths among the Native Population for the 12 Months ending 30th June, 1914.

TABLE B

No.	CAUSES OF DEATH.	All Ages.	Under 1 year.	1-5 years.	5-15 years.	15-25 years.	25-35 years.	35-45 years.	45-65 years.	65 and upwards.	NUMBER OF DISTRICT.													Hospital.	Non-Resident.	Unknown.	Total.		
											I.	II.	III.	IV.	V.	VI.	VII.	VIII.	IX.	X.	XI.	XII.	XIII.						
1	Typhoid or Enteric Fever	53				22	25	6				3		4	2	1	1				23	9	7	2		1		53	
2	Typhus Fever																												
3	Malaria																												
4	Smallpox																												
5	Measles																												
6	Scarlet Fever	4					3		1													1	1	1	1				4
7	Whooping Cough																												
8	Diphtheria and Croup																												
9	Influenza																												
10	Asiatic Cholera	2																											
11	Cholera Nostrans																												
12	Other Epidemic Diseases																												
12a	Dysentery				4	1	12	19	8	2												2	14	7	6	8		2	46
12b	Plague	46																											
12c	Erysipelas	6			1	1	3	1														2	1	1	1		1		6
13	Tuberculosis of Lungs	410		2	2	102	155	114	35			8	2	9	9	4	2	3	1	5	119	57	43	129		18	1	410	
14	Tuberculous Meningitis	2																											
15	Other forms of Tuberculosis	57				17	24	15	1													31	4	8	30		1		57
16	Cancer and other Malignant Tumours	16				3	5	7	1																				
17	Simple Meningitis	78	6	5	1	28	28	10				1	4	1			3		1	29	25	9	2			3		78	
18	Cerebral Haemorrhage and Softening	11																											
19	Organic Diseases of the Heart	71				1	15	27	21	7			2	6	3	1	2	1		1	19	6	10	16		3		71	
20	Acute Bronchitis	20	13	4	1																	2	1	2					20
21	Chronic Bronchitis	15																											
22	Pneumonia	320	17	8	3	74	134	82	12			11	7	10	8	10	4	9	5	1	108	73	54	35		5		320	
23	Other Diseases of the Respiratory System (Tuberculosis excepted)	121	19	8		6	41	39	8			2	1	4							33	18	12	39		5		121	
24	Diseases of the Stomach (Cancer excepted)	3	1	1																									
25	Diarrhoea and Enteritis (under 2 years)	64	41	13								3	2	4	2	2	1	7			2	6	1	2	19		3		64
26	Appendicitis and Typhlitis	4																											
27	Hernia; Intestinal Obstruction	10	1																										
28	Cirrhosis of the Liver	20																											
29	Acute Nephritis and Bright's Disease	20				1	2	6	5	1			2	1	1														
30	Non-cancerous Tumours and other Diseases of the Female Genital Organs	2																											
31	Puerperal Septicæmia (Puerperal Fever, Peritonitis, Phlebitis)																												
32	Other Puerperal Accidents of Pregnancy and Labour	3																											
33	Congenital Debility and Malformations	42	42									3	4	4	4		1	5	2	3	5	1	3	8		1		42	
34	Senile Debility	2																											
35	Violent Deaths (Suicides excepted)	300	1	3	1	33	120	26	6			3	2	3	2	1				2	73	59	42	3		7	1	300	
36	Suicides	10																											
37	Other Diseases	83	2	3	2	13	46	11	6			3	1	2	1	2	2	1	1		22	15	18	9		6		83	
37a	Glanders and Anthrax																												
37b	Tetanus																												
37c	Beri Beri																												
37d	Syphilis	9	7									1		1		1					1	1	1	3				9	
37e	Rheumatism	7																											
37f	Scarcy	50				4	27	15	4												2	33	2	3	8				50
37g	Convulsions of Infants	2	2																										
38	Unknown or Ill-defined Diseases	1	1									1																	
	TOTALS	1,774	155	54	15	349	719	384	95	3		41	37	50	46	34	13	36	10	25	328	208	247	332		68	2	1,774	

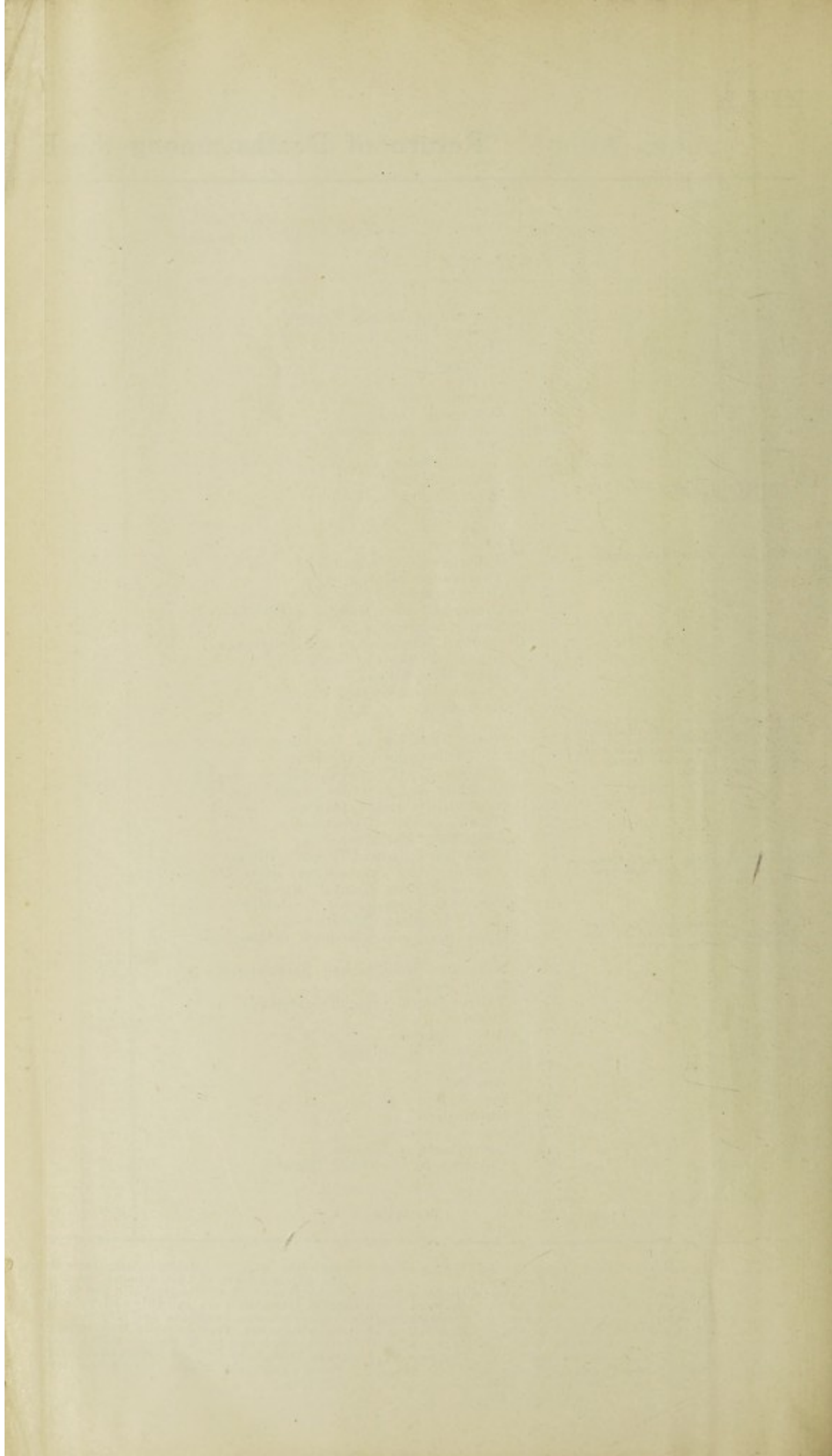
DISTRICT No. 1 includes that portion of Johannesburg (from Randjeslaagte) south of the Railway and north of Commissioner Street.  
 DISTRICT No. 2 includes Braamfontein, Hospital Hill and Hillside.  
 DISTRICT No. 3 includes Marshall Town and City and Suburban.  
 DISTRICT No. 4 includes Ferovia, Fordsburg and Mayfair.  
 DISTRICT No. 5 includes Newtown, Vrededorp, the Capetories and the Locations.  
 DISTRICT No. 6 includes Jeppe, Jeppe Extension, Belgaria, etc.  
 DISTRICT No. 7 includes Doornfontein, New Doornfontein, Berrama, Lorentville, Judith Park, Troyville, Kensington Estate and Brandenhout Valley Township.

DISTRICT No. 8 includes Berea, Yeoville, Bellevue, Bellevue East and North-Eastern suburban portion.  
 DISTRICT No. 9 includes Auckland Park, Richmond, Melville, Newlands, Claremont and North-Western suburban portion.  
 DISTRICT No. 10 includes Park Hill and Mines from Robinson westwards to boundary.  
 DISTRICT No. 11 includes Central Mines (from Ferovia to City and Suburban).  
 DISTRICT No. 12 includes Prospect Town, Daver and the Mines from Meyer and Charlton to Eastern boundary.  
 DISTRICT No. 13 includes Ophirton, Rooyana, Turfontein, Rosettenville, etc. (Southern suburban portion).

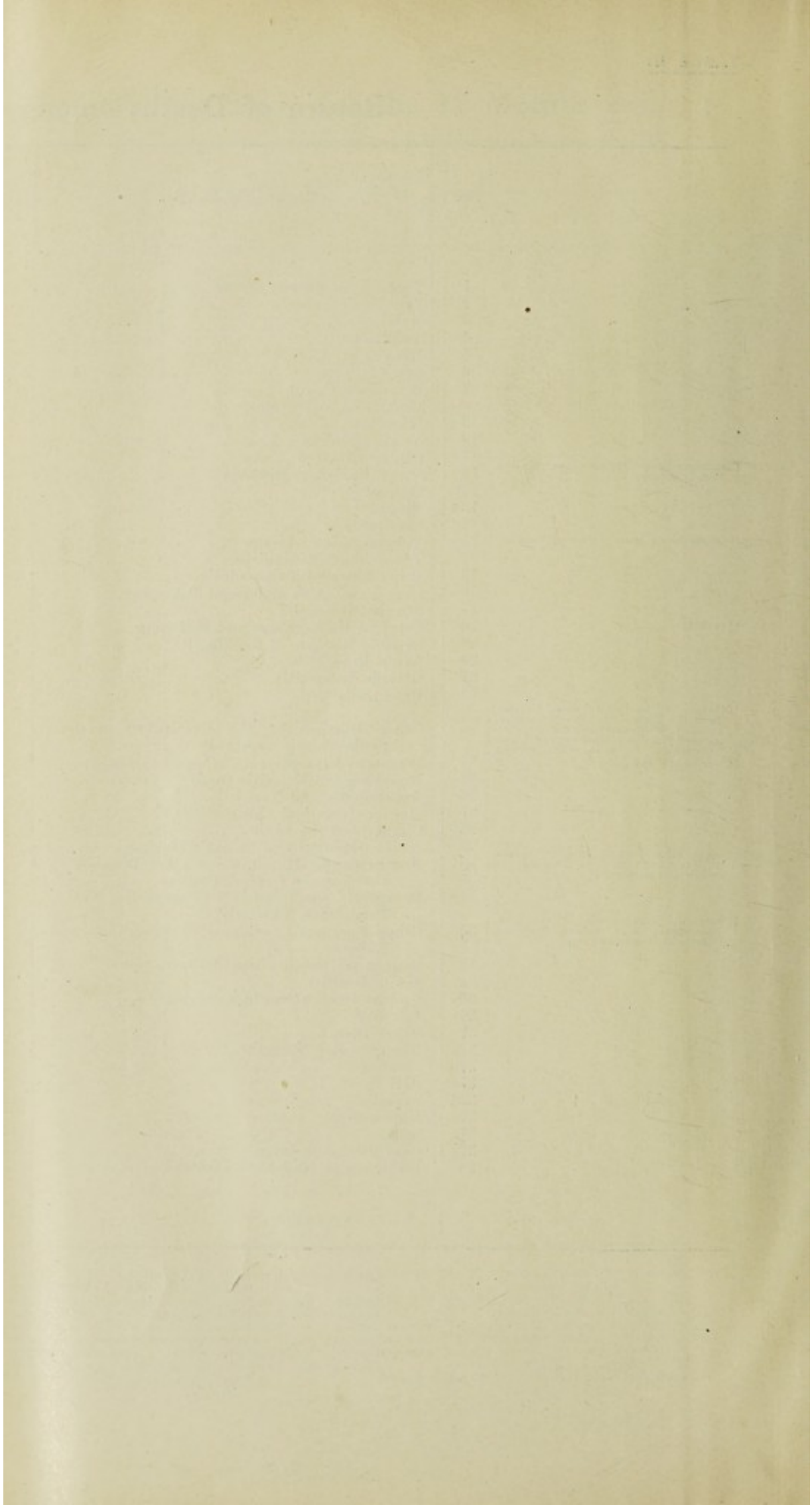
Report of the











## CAUSES OF DEATH.

M.O.H. 1913-14

The causes of, and ages at death, and the local distribution appear separately for 1913-14 in the inset Tables A to D for "Whites," "Natives," "Eurafricans" and "Asiatics" respectively. Causes of Death.

The classification followed in this Report is that adopted in the "Schedule of Causes of Death" issued by the Local Government Board of England. In future Reports the "International Classification" (Paris, 1909) will be adopted.

## FACTORS OF MORTALITY, 1912-13 AND 1913-14.

DISEASE.		1912-1913.		1913-1914.	
		Deaths.	Rates.	Deaths.	Rates.
Enteric Fever ... ..	W.	50	0'37	13	0'09
	N.	76	0'73	52	0'49
	E. )	3	0'20	—	—
	A. )				
Scarlet Fever ... ..	W.	17	0'12	12	0'09
	N.	—	—	—	—
	E. )	1	0'06	—	—
	A. )				
Tuberculosis of Lunge ... ..	W.	49	0'36	59	0'44
	N.	364	3'46	392	3'73
	E. )	26	1'81	22	1'53
	A. )				
Heart Diseases ... ..	W.	123	0'91	95	0'70
	N.	65	0'61	68	0'64
	E. )	28	1'95	25	1'74
	A. )				
Pneumonia ... ..	W.	122	0'91	108	0'80
	N.	1,133	10'79	325	3'09
	E. )	44	3'07	47	3'28
	A. )				
Other Respiratory Diseases ... ..	W.	110	0'82	90	0'67
	N.	126	1'20	116	1'10
	E. )	47	0'44	15	0'12
	A. )				
* Congenital Debility ... ..	W.	107	0'79	158	1'17
	N.	29	0'27	41	0'39
	E. )	32	2'33	48	3'35
	A. )				
Violent Deaths ... ..	W.	92	0'68	111	0'82
	N.	273	2'60	203	1'93
	E. )	11	0'77	12	0'83
	A. )				
Diarrhoeal Diseases ... ..	W.	196	1'46	145	1'08
	N.	162	1'54	95	0'90
	E. )	48	3'35	45	3'00
	A. )				
Meningitis ... ..	W.	26	0'19	20	0'14
	N.	223	2'12	75	0'71
	E. )	9	0'62	4	0'24
	A. )				
Measles ... ..	W.	43	0'32	7	0'05
	N.	64	0'60	4	0'03
	E. )	7	0'55	—	—
	A. )				

\* These include congenital malformations, injuries and debility at birth, atelectasis icterus neonatorum, atrophy, marasmus, dentition, rickets.



M.O.H. 1913-14 The following observations are suggested by inspection of this Table:

Deaths.  
Infantile  
Mortality.

1. That during 1913-14 the Chief Factors of Mortality were:

- (a) For Whites: Congenital debility and malformation (158 deaths); diarrhoeal diseases (145 deaths, 87 per cent. among children under 5 years); violent, accidental and other deaths (111); pneumonia (108); heart diseases (95); other respiratory diseases (90); tuberculosis of lungs (59); meningitis (20); enteric fever (13); and scarlet fever (12).
- (b) For Natives: Tuberculosis of lungs (392); pneumonia (325); violent deaths (203); other respiratory diseases (116); diarrhoeal diseases (95); meningitis (75); heart diseases (68); enteric fever (52); and congenital disease (41).
- (c) For Eurafrians: Congenital debility and malformation (35); pneumonia (34); diarrhoeal diseases (33); tuberculosis of lungs (18); heart disease (15); and other respiratory diseases (14).
- (d) For Asiatics: Pneumonia (13); congenital debility and malformation (13); heart diseases (10); diarrhoeal diseases (10); and tuberculosis of lungs (4).

2. That the comparison with 1912-13 is as follows:—

- (a) As regards Whites, the deaths from enteric fever fell from 50 to 13, and the death-rate from 0.37 to 0.09. The number of cases notified in 1913-14 also showed a decrease, being 199 as compared with 281 in the previous year. "Diarrhoeal diseases" fell from 196 to 145, and the diarrhoeal death-rate from 1.46 to 1.08. Pneumonia accounted for 108 deaths, or a decrease of 13 and a rate of 0.80 as against 0.91, whilst "other respiratory diseases" fell from 110 to 90, or 0.82 to 0.67 per 1,000. Other diseases showing slight decreases were scarlet fever, heart disease and meningitis. On the other hand, increases are noted from tuberculosis of lungs, congenital debility and violent deaths, the deaths from which rose respectively 10, 51 and 19.
- (b) With regard to Natives, there was an increase in mortality from tuberculosis of lungs from 364 to 392 and the death-rate from 3.46 to 3.73. Congenital debility rose from 29 to 41, or from 0.27 to 0.39 per 1,000. On the other hand, pneumonia decreased from 1,133 to 325, with a death-rate of 10.79 as against 3.09. Enteric fell from 76 to 52, heart diseases 123 to 95, respiratory diseases 126 to 116, diarrhoeal diseases 162 to 95, and meningitis 223 to 75.
- (c) With regard to Eurafrians and Asiatics, the deaths from congenital diseases numbered 48, as compared with 32 the previous year. On the other hand, all the other chief causes showed decreases, except pneumonia, which was practically unaltered.

On the Table given on page 12 are Returns of the Deaths and Death-rates per 1,000 from Certain Chief Causes amongst the various races of Natives in Johannesburg, employed respectively "on" and "off" the Mines, during the year 1913-14. These figures have been prepared by Mr. F. Thompson (Chief Clerk, Public Health Department).

#### INFANTILE MORTALITY.

By the statistical term "Infantile Mortality" is meant the number of deaths of infants under one year of age per each 1,000 births during a given period, and, in the words of the Registrar-General for England and Wales, infantile mortality "has always been regarded as a valuable test for the health of communities." In the following table the rates for Johannesburg are compared with the rates for various English communities, and for the other large towns in South Africa.

## DEATHS OF INFANTS (WHITE) PER 1,000 BIRTHS.

M.O.H. 1913-14

CALENDAR YEAR.	1906	1907	1908	1909	1910	1911	1912	1913	Infantile Mortality.
96 Great Towns of England and Wales ...	145	127	129	118	115	141	101	116	
145 Smaller Towns of England and Wales	138	122	124	111	104	133	—	111	
Kimberley ...	151	119	106	80	117	106·3	—	—	
OFFICIAL YEAR.	1906-7	1907-8	1908-9	1909-10	1910-11	1911-12	1912-13	1913-14	
Capetown ...	91	100	89	104	94·4	98·1	102·7	—	
Durban ...	69	91	67	46	90·3	98·5	74·8	—	
Pretoria ...	99	106	121	76	104	84·8	95·17	—	
Johannesburg ...	140	121	134	117	110	114	99·53	84·99	

During 1912-13 there were 4,310 births and 429 deaths; in 1913-14 there were 4,271 births and 363 deaths. These figures correspond to an infantile mortality rate of 99·5 for the year 1912-13, and 84·99 for 1913-14.

Diarrhoeal diseases and the effects of malnutrition were responsible for 33 per cent. of infant deaths. Early weaning, unsuitable hand-feeding and insanitary conditions of residence, giving rise to food contamination, are potent predisposing causes.

## DEATHS OF INFANTS (COLOURED) PER 1,000 BIRTHS.

In the appended Table the Coloured Infant Mortality rates per 1,000 births for Johannesburg are contrasted with those for Pretoria, Kimberley and Capetown, as given in the latest available reports of the Medical Officers of Health of those towns:—

TOWN.	Year ending.	Natives.	Cape-Coloured or Mixed.	Asiatics.	Whites.
Pretoria ...	30.6.13	332	257	121	95
Capetown ...	30.6.13	198·63 for all Coloured Races.			102·7
Kimberley ...	31.12.13	337·3 for all Coloured Races.			107·7
Johannesburg ...	30.6.14	267·15 for Natives and Cape-Coloured.		385·54	84·99



## Return of Deaths and Death-Rates (per 1,000) from Certain Causes amongst Natives in Johannesburg during the Year 1913-14.

"On" means employed in any capacity in or on a mine or housed at W.N.L.A. Compound. "Off" means not employed in any such capacity.  
 "Mines' PHTHISIS" is entered up as "Silicosis."

ORIGIN.	PNEUMONIA.						PHTHISIS AND TUBERCULOSIS.						SILICOSIS.						MENINGITIS.						ALL OTHER DISEASES.						AVERAGE ANNUAL POPULATION (WHERE AVAILABLE).	
	On			Off			On			Off			On			Off			On			Off			On	Off						
	Deaths	Rate	Rate	Deaths	Rate	Rate	Deaths	Rate	Rate	Deaths	Rate	Rate	Deaths	Rate	Rate	Deaths	Rate	Rate	Deaths	Rate	Rate	Deaths	Rate	Rate								
	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...							
East Coast	97	4.25	7	7.93	192	8.43	5	5.02	61	2.67	2	2.01	22	0.96	1	1.00	303	13.30	11	11.05	22,770	995										
Cape Colony	37	2.61	12	2.28	17	1.20	11	2.09	2	0.14	—	—	3	0.21	—	—	97	6.85	53	1.00	14,142	5,250										
Beit. Basuto	21	6.51	12	11.22	20	6.20	16	14.96	2	0.62	—	—	7	2.17	—	—	25	7.75	24	22.45	3,224	1,069										
Transvaal	20	5.32	32	2.90	14	3.73	4	0.25	1	0.26	1	0.96	5	1.33	9	0.56	26	6.92	149	9.34	3,753	15,944										
Tropical ...	44	9.85	1	2.37	71	15.90	4	10.30	14	3.13	—	—	10	2.23	1	2.57	82	18.36	1	2.57	4,465	388										
Coloured	5	—	31	—	4	—	14	—	1	—	—	—	—	—	3	—	16	—	146	—	—	—	—									
All others	23	6.69	24	1.41	37	10.76	19	1.11	1	0.29	—	—	7	2.03	3	0.17	36	10.47	65	3.82	3,436	17,006										
Totals	217	4.76	119	2.92	355	6.85	73	1.79	82	1.58	3	0.07	54	1.04	17	0.41	585	11.29	449	11.04	51,790	40,652										

The Director of Native Labour has kindly supplied the average population figures used above.

NOTE.—In reference to a similar table published in the Medical Officer of Health's Report for 1911-12, the following pertinent criticism appeared in *The Transvaal Medical Journal* of January, 1913:—"This table must be interpreted with the greatest caution or it will be entirely misleading. The difficulties arise from two causes—firstly, that natives arriving on the Rand suffer from many diseases, e.g., pneumonia and cerebro-spinal meningitis, much more heavily during their first few weeks of residence than subsequently; and, secondly, that the Witwatersrand Native Labour Association have their 'Receiving Compound' (where both arriving and departing mine-natives for the whole Witwatersrand area are detained for varying periods) 'within the Municipal Area. The average population, therefore, of Tropical natives, and, to a lesser extent, East Coast natives, used as a basis for the compilation of death-rates is quite misleading in regard to these groups. To take a concrete instance, the death-rate from meningitis amongst Tropical natives is given for mine boys as 15.7, on an assumed population of 6,630, whereas for non-mine boys it is only 0.9. Now, comparatively few cases of meningitis occur after the first 14 to 21 days' residence. The population passing through the Witwatersrand Native Labour Association Compound alone in one year is considerably more than double the number given as the average annual population; if, therefore, all these 'boys' had remained resident in Johannesburg for 52 weeks instead of 3, their death-rate for the period would have fallen to less than half that shown; in other words, the longer they spend in the district the lower would their mortality-rate become—clearly an anomaly. This example may serve to indicate the danger of interpreting this table too literally; in fact, in regard to Tropical and East Coast natives, it is doubtful whether any useful deductions can be drawn from the figures given without considerably more information than is furnished in the table."



The question of Infantile Mortality was dealt with at considerable length in the Medical Officer of Health's Report for 1909-11 (v. pp. 10-21). M.O.H. 1913-14

Appended is the joint report of the two Health Visitors for the twelve months 1st July, 1913—30th June, 1914:— Health Visitors.

#### ANNUAL REPORT OF HEALTH VISITORS.

During the year 1913-14 the following visits were paid by us, viz., in connection with births, 938; in connection with deaths, 80; revisits, 3,786.

Our work has been done in the following districts: Fordsburg, Vrededorp, Braamfontein, Ferreiras Township, Marshalls Township, Ophirton, Doornfontein, Jeppetown and Extension, Bertrams and centre of town.

Houses have been visited after the birth has been registered. In some cases time elapses between the birth and registration, but not to such a great extent as formerly. As the Early Notification of Births Act came in force from July 1st, 1914, we hope in future to have a better chance of influencing the early treatment of both patient and infant, and of supervising the work of the untrained midwife.

We still find patients whom we have previously visited anxious to obtain the services of a trained midwife. This fact proves that they are realising the necessity of hygienic nursing.

We still find a gradual improvement in the homes we have previously visited, but this year the influx of destitute families from outlying districts, in conjunction with the real distress which exists in the town, has been great. This necessarily has made our work more difficult, owing to the fact that these people are, in most cases, absolutely ignorant of the elementary rules of hygiene. We still continue to impress upon the mothers the advantages of regular breast feeding, daily bathing, ventilation, fresh air and proper clothing, and the harmful use of the dummy for the infants. Regarding the older children which come under our notice, we deal with the subjects of suitable foods, clothing, bathing, care of the teeth and hair, and general hygiene.

We find fewer cases of infants suffering with bad eyes, but when such exist we send them at once to the General Hospital for treatment. When we find sickness of any sort, we pay frequent, if not daily, visits, and help the mother in every way we can to carry out the doctor's instructions.

Cases of sick infants and mothers we have endeavoured to get at once into the General Hospital. The number of cases which have been admitted free into the Queen Victoria Hospital has decidedly increased. Miss Ellershaw has continued to attend, free of charge, any case where the patient has been unable to leave her home.

We have, since the beginning of the year, in connection with our work, investigated and reported on cases of poverty and underfed school children for the Central Relief Board, from whom we have received food, clothing, rent and medicines for such of our cases as were necessary.

During the year the continual changing of addresses has been on the increase. This has made our revisiting where necessary more difficult.

The necessity of milk depôts still forces itself upon us. We have, through the agency of private funds and also the Relief Board, been able to supply milk in a limited way, and the results have proved to us how beneficial milk depôts would be to the poor community.

The duties of Health Visitors demand energy, tempered by tact and discretion. From the foregoing record of your Health Visitors' work for the past twelve months, coupled with their obvious interest therein, and with the fact that no complaint of officiousness or unwelcome interference has been received, the Medical Officer of Health concludes that their efforts have been appreciated by, and beneficial to, a considerable number of individuals. Both Visitors possess the Sanitary Inspector's Certificate of the Royal Sanitary Institute, and both are otherwise well qualified for the work.



M.O.H. 1913-14

## PNEUMONIA.

Pneumonia. The following are the figures as to pneumonia deaths for the period under review and the four previous years:—

YEAR.	WHITES.	S.A. COLOURED.	EURAFRICANS.	ASIATICS.
1909-10 ... ..	146	670	39	11
1910-11 ... ..	178	1,190	45	2
1911-12 ... ..	173	925	33	11
1912-13 ... ..	165	1,196	44	17
1913-14 ... ..	108	325	31	13

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

	WHITES.	S.A. COLOURED.	ASIATICS.	LONDON.
1906-7 ... ..	1.1	6.6	0.88	1.4 (1906)
1907-8 ... ..	1.2	9.3	1.9	1.3 (1907)
1908-9 ... ..	1.3	9.6	1.4	1.4 (1908)
1909-10 ... ..	1.3	6.8	2.1	1.4 (1909)
1910-11 ... ..	1.4	11.9	4.1	1.3 (1910)
	WHITES.	NATIVES.	EURAFRICANS AND ASIATICS.	LONDON.
1911-12 ... ..	1.29	8.6	3.77	1.2 (1911)
1912-13 ... ..	1.20	10.79	3.07	1.20 (1912)
1913-14 ... ..	0.80	3.09	3.28	—

Cases of pneumonia ending fatally amongst Asiatics, of which intimation is received daily from the Registrar of Births and Deaths, are at once inquired into, in view of the possibility of plague first appearing in the pneumonic form.

Medical practitioners are also circularised from time to time in reference to this possibility and to the free examination of the sputum of any case to which suspicion may attach.

The reduction in pneumonia mortality during the period under review was therefore 32 per cent. for Whites and 65 per cent. for Eurafrians and Asiatics.

## ENTERIC OR TYPHOID FEVER.

M.O.H. 1913-14

Appended are the statistical particulars for the period under notice and the ten preceding years:—

Enteric  
Fever,  
Diarrhoeal  
Diseases.

YEAR.	WHITES.			NATIVES.		EURAFRICANS.		ASIATICS.	
	Cases.	Deaths.	Deaths per cent.	Cases.	Deaths.	Cases.	Deaths.	Cases.	Deaths.
1903-4	1,009	126	12·4	—	—	—	99	—	5
1904-5	454	46	10·1	266	—	—	125	8	1
1905-6	617	84	13·6	232	—	—	99	29	7
1906-7	385	42	10·8	342	—	—	161	12	6
1907-8	446	31	6·9	348	—	—	102	20	5
1908-9	373	37	9·9	296	—	—	123	3	3
1909-10	271	21	7·7	470	146	8	1	—	—
1910-11	277	25	9·02	497	137	12	3	5	—
1911-12	310	39	12·58	365	104	12	4	6	2
1912-13	354	52	14·12	248	80	9	3	3	—
1913-14	199	13	6·53	187	52	7	—	4	—

A large number of imported cases, *i.e.*, persons developing or suffering from enteric, came from outside districts into the hospitals and nursing homes of Johannesburg. Excluding deaths amongst this class (see Tables A-D), the mortality rates from enteric per 1,000 of the population were as follow:—

	1903-4	1904-5	1905-6	1906-7	1907-8	1908-9	1909-10	1910-11	1911-12	1912-13	1913-14
Whites	1·3	·4	·7	·4	·3	·3	0·15	0·18	0·27	0·37	0·09
Natives									0·9	0·73	0·49
Eurafricans	1·4	1·6	1·4	2·0	1·2	1·5	1·42	1·35			
Asiatics	·6	·09	·8	·9	·7	·4	—	—	0·4	0·2	0·00
95 Great Towns, Eng. & Wales	(1903) ·12	(1904) ·10	(1905) ·08	(1906) ·09	(1907) ·07	(1908) ·08	(1909) 0·06	(1910) 0·05	(1911) 0·06	(1912) 0·04	(1913) 0·04

In 1912-13 there were 281 cases, with 50 deaths (or a case-mortality of 17·7 per cent.), excluding persons who came into Johannesburg suffering from the disease. In 1913-14 there were 199 cases and 13 deaths (or a case-mortality of 6·53 per cent.). It will thus be seen that the type of the disease in 1913-14 was 62 per cent. less fatal than in 1912-13, and that the notifications fell short by 82 (or 29·1 per cent.) of those of 1912-13. This is satisfactory so far as it goes.

## DIARRHOEAL DISEASES.

The following are the mortality figures for the period under notice:—

	WHITES.	NATIVES.	EURAFRI- CANS.	ASIATICS.
Dysentery	19	44	2	—
Diarrhoea and Enteritis (under 2 years)	126	51	31	10
	145	95	33	10



M.O.H. 1913-14

## DEATH-RATE (DIARRHOEAL DISEASES) PER 1,000 OF POPULATION LIVING.

Diarrhoeal Diseases, Meningitis.					WHITES.	NATIVES AND EURAFRICANS.	ASIATICS.	77 GREAT TOWNS IN ENGLAND.
	1903-4 ... ..				3.82	4.77	.89	.83
1904-5 ... ..				2.49	3.83	.39	.83	
1905-6 ... ..				3.34	4.18	1.26	.83	
1906-7 ... ..				2.26	3.21	1.62	1.16	
1907-8 ... ..				1.52	1.76	1.18	.4	
1908-9 ... ..				2.22	1.95	.88	.65	
1909-10 ... ..				1.63	1.55	1.73	.38	
1910-11 ... ..				1.58	2.08	3.09	.38	
				WHITES.	NATIVES.	EURAFRICANS AND ASIATICS.	95 GREAT TOWNS IN ENGLAND.	
1911-12 ... ..				1.7	1.9	3.07	1.31	
1912-13 ... ..				1.46	1.60	3.77	1.55	
1913-14 ... ..				1.08	0.90	3.00	0.32 (1912) England & Wales.	

The proportion of the foregoing deaths which took place amongst the children under five years of age of the different races was:—For Whites, 94 per cent.; Natives, 57 per cent.; Eurafrians, 96 per cent.; Asiatics, 100 per cent.

As regards both S.A. Coloured and Asiatics in Johannesburg, it must, however, be remembered that comparatively and absolutely there are very few children. Diarrhoeal diseases are the chief cause of death amongst children under five years.

## MENINGITIS.

The characteristics of this disease were fully dealt with in the Medical Officer of Health's Report for 1904-6 (see pp. 20-24).

The ages at death are set out in the following table:—

## DEATHS—1913-1914.

	All ages.	—1	—5	—15	—25	—35	—45	—65	65
Whites ...	22	13	1	1	2	3	1	1	—
Natives ...	78	6	5	1	28	28	10	—	—
Eurafrians ...	3	1	1	1	—	—	—	—	—
Asiatics ...	1	—	1	—	—	—	—	—	—
Totals ...	104	20	8	3	30	31	11	1	—

With regard to the results of bacterial examination of 477 suspected cases of meningitis from 1st July, 1906, to 30th June, 1914, the Government Bacteriologist has kindly furnished the following figures:—Meningococcus present in 158 cases; pneumococcus in 87; meningococcus and pneumococcus in 0; streptococcus in 21; pneumococcus with streptococcus in 2; tubercle bacillus in 1; B. Jeyocaneus in 1; coliform bacillus in 1; B. paratyphosus in 1; none of the foregoing in 240.



*Age Incidence.*—(a) *Amongst Whites.*—Of the 22 deaths, 15 were amongst persons under 15 years, 13 being very young children.

M.O.H. 1913-14

(b) *Amongst Eurafrians.*—Two of the three deaths were those of children under five.

Meningitis,  
Tuberculosis.

(c) *Amongst Natives* the age-incidence was just the reverse of that amongst Whites and Eurafrians, 66 out of 78 being deaths of persons over 15 years of age.

(d) *Amongst Asiatics.*—This case was that of a child under five years.

### TUBERCULOSIS.

Appended is a statistical summary of the mortality from Tuberculosis in Johannesburg for the two years 1912-13 and 1913-14:—

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

	PULMONARY PHTHISIS.		TUBERCULAR MENINGITIS.		OTHER FORMS OF TUBERCULOSIS.	
	1912-13	1913-14	1912-13	1913-14	1912-13	1913-14
Johannesburg—						
Whites ... ..	0·36	0·44	0·014	0·007	0·067	0·029
Natives ... ..	3·467	3·732	0·023	0·019	0·571	0·533
Asiatics and Eurafrians	1·677	1·958	0·019	0·000	0·069	0·489
	1912	1913	1912	1913	1912	1913
London ... ..	1·39	1·323	0·174	0·157	0·197	0·154
England and Wales ...	1·217	—	0·146	—	0·206	—

#### A. AMONGST WHITES:—

During the seven years 1907-8, 1908-9, 1909-10, 1910-11, 1911-12, 1912-13 and 1913-14, inquiry has been made in regard to each death from tuberculosis, with a view to obtaining some idea as to—

- the proportion of fatal cases which may probably be regarded as "imported," *i.e.*, in which the infection was contracted before the deceased person came to South Africa;
- the proportion in which the disease was acquired during residence in South Africa; and
- the effect of occupation.

During the period in question, 611 whites died from tuberculosis. Of these, 336 were British-born, 80 hailed from other European countries, and 185 were Afrianders, including 94 of English and 101 of Dutch descent.

The value of the results of our inquiries, as set out in the following Tables, depends, of course, on the accuracy of the information recorded in the death certificate or subsequently furnished to your inspector. This accuracy is often very questionable. The figures have also to be considered in connection with the results of recorded observations in Europe—*viz.*, that a very large percentage of the population of large towns have been subject to attack by tuberculosis by the time they reach adult life, and that the larger proportion of these persons survive the attack.

## M.O.H. 1913-14 DEATHS FROM TUBERCULOSIS OF OVERSEA IMMIGRANTS IN JOHANNESBURG.

Tuberculosis.

1st July, 1907, to 30th June, 1914.

*B=Infected before arrival in South Africa. A=Infection first manifested after arrival in South Africa.*

	YEARS OF RESIDENCE IN SOUTH AFRICA.																		Total.	
	-1		-2		-3		-4		-5		-10		-15		-20		+20			
	B	A	B	A	B	A	B	A	B	A	B	A	B	A	B	A	B	A	B	A
British Born ...	9	5	12	5	10	6	7	3	6	9	20	47	22	50	15	37	12	24	113	186
Other Europeans ...	—	5	2	1	—	4	1	—	4	3	1	14	2	12	2	4	1	7	13	50
Totals ...	9	10	14	6	10	10	8	3	10	12	21	61	24	62	17	41	13	31	126	236

In addition, there were 37 deaths of British-born persons and 17 of other Europeans, the length of whose residence in South Africa was unknown. These cases are, therefore, excluded from consideration.

The proportion of fatal cases which may probably be regarded as "imported" is 126 out of 557, or 22·6 per cent.

The proportion in which the disease appears to have been contracted in South Africa is made up of deaths of immigrants in whom infection was first manifested after arrival, viz., 246, plus deaths of Afrikanders, viz., 195, and is therefore 441 out of 557, or 79·1 per cent.

Details as to "Occupation" are as follow:—

Occupation.	Under 1 year.			-2	-3	-4	-5	-6	-7	-8	-9	-10	-11	-12	-15	-20	+20	Unknown.	All Ages.
	3ms	6ms	12m																
<b>MINERS—</b>																			
Machine-drillers ...	3	11	24	24	6	7	9	4	4	2	2	1	2	—	1	2	2	—	104
Other Under-ground ...	10	15	26	21	9	8	4	4	3	1	3	1	1	1	2	1	2	10	122
Surface ...	3	2	4	4	—	1	2	—	—	1	—	—	—	—	—	1	—	3	21
Engine Drivers and Fitters...	2	—	1	7	3	4	2	3	1	—	3	1	—	1	1	—	3	2	34
Clerks & Salesmen ...	7	11	7	13	7	7	3	4	6	2	1	2	—	2	4	1	—	5	82
Housewives ...	9	9	3	13	7	2	8	2	2	3	2	1	—	—	3	2	4	4	74
Painters ...	—	2	—	—	1	—	—	—	—	—	—	—	—	1	—	—	—	—	4
Carpenters ...	1	1	—	—	—	1	—	1	—	1	1	1	—	—	—	—	—	—	7
All others ...	33	14	21	31	13	6	8	5	4	6	2	4	2	3	1	3	1	6	163
Totals ...	68	65	86	113	46	36	36	23	20	16	14	11	5	8	12	10	12	30	611

226 deaths, or 36·9 per cent., of the total mortality from tuberculosis occurred amongst miners employed underground, and in the majority of cases was probably associated with silicosis, 104, or nearly one-half, being those of machine-drillers. In 39·3 per cent. of cases death occurred during the first year of illness, and in another 19·9 per cent. before the end of the second year; in five years 78·3 per cent. were dead.



It is clear that the registered deaths from tuberculosis amongst miners (247), and the percentage figure calculated thereon, must be increased by the addition of all tuberculosis deaths amongst repatriated miners before the true percentage of such deaths amongst the mining and non-mining communities respectively can be ascertained.

M.O.H. 1913-14

Tuberculosis.  
Miners'  
Phthisis.

Clerks and salesmen furnish the next largest number of deaths (82) from tuberculosis. It is not improbable that some of this class were men who, becoming incapacitated through mine work, were forced to take to lighter employment. More than 67 per cent. of this class died within five years of infection.

Housewives contributed 74 deaths, and 68 per cent. of these sufferers succumbed before the end of the fifth year of illness.

#### B. AMONGST NATIVES:—

Of the 410 deaths registered during 1913-14, 262 were those of persons from the East Coast (chiefly Portuguese "boys"), 10 from British Central Africa, 18 from Transvaal, 14 from Orange Free State, 18 from Natal, 28 from Cape Colony, 6 from Rhodesia, 37 from Basutoland, 14 from Zululand, whilst 3 were classed as "unknown."

379 of the deceased persons were males and 31 females. The great majority of the males were mine boys (351) and labourers (28), including house and stable boys. Practically all of these were between the ages of 15 and 45 years.

The duration of illness was as follows:—31 died in less than one month; 112 under three months; 85 under six months; 63 under twelve months; 15 under eighteen months; 9 under two years; 27 after illness of more than two years. In 48 cases the duration of illness was unknown.

*Voluntary Notification* commenced in July, 1907. Appended are results to 30th June, 1914:—

	1906-7		1907-8		1908-9		1909-10		1910-11		1911-12		1912-13		1913-14		Total.	
	Cases.	Deaths.	Cases.	Deaths.	Cases.	Deaths.	Cases.	Deaths.	Cases.	Deaths.	Cases.	Deaths.	Cases.	Deaths.	Cases.	Deaths.	Cases.	Deaths.
Whites ...	1	73	90	61	26	66	68	60	104	79	62	78	44	64	43	64	438	545
Coloured ...	—	299	166	280	44	258	97	326	226	385	249	481	243	469	292	461	1,317	2,959
Asiatics ...	—	14	7	12	1	12	—	9	5	6	5	40	2	9	—	5	15	107
Totals ...	1	386	263	353	71	336	165	395	335	470	316	599	289	542	335	530	1,770	3,611

*Compulsory Notification of Tuberculosis.*—On 30th June, 1914, the Council resolved as follows:—

- That all forms of tuberculosis be added to the list of notifiable diseases as from 1st July, 1914.
- That for the purposes of these By-laws a medical practitioner shall be deemed to have become aware that a person is suffering from tuberculosis when he has arrived at this conclusion from evidence other than that derived solely from tuberculin tests applied to that person.

These resolutions did not, however, become effectively operative till the middle of September.

#### MINERS' PHTHISIS, ROCKDRILL PNEUMONIA OR SILICOSIS.

The registered deaths from this disease are recorded below:—

YEAR.	WHITES.	NATIVES.	EURAFRICANS.	ASIATICS.
1909-10 ...	34	22	—	—
1910-11 ...	44	47	1	—
1911-12 ...	73	47	—	—
1912-13 ...	71	87	2	—
1913-14 ...	47	84	1	—



## ORGANIC DISEASES OF HEART.

Heart  
Diseases.  
Rheumatism.  
Cancer.  
Syphilis.

These heart affections include pericarditis, endocarditis, valvular disease and hypertrophy. The deaths recorded during the year July 1st, 1913—June 30th, 1914, were 95 for Whites, 68 for Natives, 15 for Eurafricans, and 10 for Asiatics.

Of the White deaths, 72 were those of males and 23 those of females, indicating a considerably greater proportionate incidence on males. Ten died under 15 years of age and 85 at later periods.

## ACUTE RHEUMATISM OR RHEUMATIC FEVER.

As heart disease is a frequent sequel of acute rheumatism, it is noteworthy that the death-rate per 1,000 for the year from the latter malady is 0.059 for Whites, 0.066 for Natives, 0.069 for Eurafricans and Asiatics, as against 0.054 in England and Wales in 1912.

It is now recognised that rheumatic fever or acute rheumatism is a specific disease, and quite distinct from ordinary rheumatism as to its origin. Various eminent English and Continental bacteriologists believe that it is caused by an organism known as the *micrococcus rheumaticus*.

## MALIGNANT DISEASE OR CANCER.

The deaths from cancer were 79 for the year 1913-14. Of the total, 47 were males and 32 females, and 74 (46 males and 28 females) occurred at ages over 35. Stated in terms of the 1911 census population, the mortality was 0.596 per 1,000 for males and 0.603 per 1,000 for females, as against 0.913 for males and 1.117 for females in England and Wales in 1912.

In 7 cases the seat of the disease was not stated; in 21 the stomach was affected; in 13 the face or neck; in 9 the liver; in 5 each the womb, rectum and breast; in 4 the intestines; in 2 each the kidneys and uterus; and in 1 each the heart, hip, spleen, lungs, brain and back.

Natives—

Sixteen deaths were recorded, 8 being at ages under 35 and 8 at later periods. The parts affected are recorded as follow: Liver, 9; stomach, 4; brain 1; not stated, 2. The death-rate per 1,000 living was 0.152, but it should be remembered that this population consists in Johannesburg mainly of young male adults, who remain here a comparatively short time.

Eurafricans—

Three deaths were recorded, 1 female and 2 males, one male being over 35. In the female case the uterus was affected, and of the male cases one was unspecified, and in the other the testicles were affected.

Asiatics—

Three deaths (all males) occurred, at ages above 35. The part affected in two cases was the liver, and in the other the neck.

## SYPHILIS.

One adult and one infant European, 2 adult and 7 infant Natives, and 1 adult and 3 infant Eurafricans are registered as having died from this disease between July 1st, 1913, and June 30th, 1914.

Appended is a return, kindly supplied by Dr. Mehliß, of the Johannesburg cases of syphilis and other venereal diseases treated at the Lazaretto during the years 1906-14:—

Years.	Whites.	Coloured.
1906-7	257	332
1907-8	185	324
1908-9	179	323
1909-10	185	327
1910-11	219	397
1911-12	227	220
1912-13	216	389
1913-14	275	535

## SCARLET FEVER.

M.O.H. 1913-14

	1910-11		1911-12		1912-13		1913-14	
	Cases.	Deaths.	Cases.	Deaths.	Cases.	Deaths.	Cases.	Deaths.
Whites ...	668	22	534	15	1,122	17	921	13
Natives ...	1	—	—	—	2	—	4	—
Eurafricans ...	5	—	1	—	6	—	2	—
Asiatics ...	1	—	1	—	—	1	3	—

Scarlet  
Fever.  
Diphtheria.  
Erysipelas.

In 1913-14 the mortality was equal to 0·097 per 1,000 persons living, which is higher than the 1913 rate for the 96 Great British Towns, namely, 0·07. In 1914 the rate for the 97 Great British Towns was 0·09.

In Johannesburg, only carefully selected cases of scarlet fever are removed to the Isolation Wards, unless the patient or his friends guarantee payment of all expenses.

## DIPHTHERITIC DISEASE, INCLUDING MEMBRANOUS CROUP.

	1905-6		1906-7		1907-8		1908-9		1909-10		1910-11		1911-12		1912-13		1913-14	
	Cases.	Deaths.	Cases.	Deaths.	Cases.	Deaths.	Cases.	Deaths.	Cases.	Deaths.	Cases.	Deaths.	Cases.	Deaths.	Cases.	Deaths.	Cases.	Deaths.
Whites ...	34	17	16	11	31	11	46	18	40	22	60	20	125	22	81	22	66	14
Natives ...	4	2	2	4	3	2	2	—	4	1	3	1	7	—	5	2	5	1
Eurafricans ...	—	—	—	—	—	—	—	—	2	3	—	3	1	1	3	2	1	1
Asiatics ...	—	—	—	—	—	—	—	—	—	—	—	—	1	—	—	—	1	1

In 1913-14 there was a decrease (73 as against 89) of *cases* notified, and the *case-mortality* was considerably less, the number of deaths being 17, as against 26. The mortality for Whites per 1,000 living was 0·10, as against 0·15 in 1912-13, and 0·18 in 1911-12. In the 97 Great Towns in England in 1914 the mortality per 1,000 was 0·16.

## ERYSIPELAS.

	1910-11		1911-12		1912-13		1913-14	
	Cases.	Deaths.	Cases.	Deaths.	Cases.	Deaths.	Cases.	Deaths.
Whites ...	82	8	77	5	43	5	76	5
Natives ...	45	8	44	7	36	4	32	6
Eurafricans ...	1	—	3	—	1	—	2	2
Asiatics ...	2	—	—	—	—	—	1	—

The death-rate per 1,000 was 0·037 in 1913-14, as against 0·028 in London in 1913 and 0·037 in Johannesburg in 1912-13. As in former years, the majority of cases were facial, and about 35 per cent. of the White cases were associated with a visible wound.



## MEASLES.

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

Measles.  
Plague.  
Puerperal  
Septicæmia.

	1910-11	1911-12	1912-13	1913-14
Whites ... ..	0'556	0'185	0'32	0'052
Natives ... ..	0'610	0'295	0'60	0'038
Eurafricans ... }	0'830	0'278	0'55	—
Asiatics ... .. }				
27 English Towns ...	0'47 (1911)	0'47 (1912)	0'34 (1913)	0'35 (1914)

## PLAGUE PREVENTION.

No case of plague occurred during the period under review. The usual precautionary measures were, however, continued. These included the destruction of 30,630 rats, the bacterial examination of 3,863 rat carcasses, the bacterial examination of pneumonia sputum in certain cases, and supervision for ten days of Malays and Indians arriving from plague-infected centres.

## PUERPERAL SEPTICÆMIA, ETC.

	1911-12		1912-13		1913-14	
	Cases.	Deaths.	Cases.	Deaths.	Cases.	Deaths.
Whites ... ..	12	9 (including 1 from outside)	15 (including 1 from outside)	10 (including 2 from outside)	11	4
Natives ... ..	2	—	2	1	1	—
Eurafricans ... ..	2	3	1	1	1	1
Asiatics ... ..	1	1	—	1	1	—

It is probable that the notification of pyæmic and septicæmic states associated with the puerperal period has been very incomplete.

This is, no doubt, in part due to the absence, in many cases, of a definite understanding of what "puerperal septicæmia" connotes. It may, therefore, be well to place it on record that in November, 1898, the Royal College of Physicians resolved that *notifiable puerperal conditions* should be taken to include "septicæmia, pyæmia, septic peritonitis, septic metritis, and other acute septic inflammations of the pelvis occurring as the direct result of "child-birth." The Obstetrical Society of London gave a similar ruling in reply to an inquiry by the Society of Medical Officers of Health. The Royal College of Physicians have deleted the term "puerperal fever" from their nomenclature, and substituted such terms as "puerperal pyæmia" or "puerperal septicæmia."

One of the total of 11 White cases reported was brought for treatment into Johannesburg after confinement. Of the 10 cases which arose in Johannesburg, none were medically attended during confinement, 9 were looked after by certified nurses or midwives, and 1 by an unqualified person.

The death-rate from puerperal febrile conditions per 1,000 persons living was 0'030 in London in 1913. In Johannesburg, in 1913-14, it was 0'029. In considering these figures, it should be borne in mind that the birth-rate in Johannesburg was 31'87, against 24'5 for London. It is probably correct to assume that the larger the number of births per 1,000 of population, the greater is the risk of possibility of accident. Moreover, "England and Wales" include large rural areas in which many women lead a very simple, quiet and healthy life, which probably tends to keep child-birth an uncomplicated and normal physiological process.



## MALARIA.

M.O.H. 1913-14

Appended are the statistics of this disease:—

	1910-11	1911-12	1912-13	1913-14	Malaria. Leprosy. Anthrax. Notifiable Diseases. Disinfection.
	Deaths.	Deaths.	Deaths.	Deaths.	
Whites ... ..	5	9	—	7	
Natives ... ..	6	8	10	5	
Eurafricans ...	—	—	—	—	
Asiatics ... ..	—	1	—	—	

All the above cases were those of persons who had contracted the disease elsewhere, the majority of the coloured cases being East Coast Natives.

## LEPROSY.

One White, 11 Natives and 1 Eurafrikan were notified in 1913-14. The White was a man of 19 years of age, who had resided in South Africa for 16 years.

## ANTHRAX.

This case (a white man) was sent from a farm in Potchefstroom district to Johannesburg Hospital in August, 1913.

## NOTIFIABLE INFECTIOUS DISEASES.

These included smallpox, plague, typhus, enteric, scarlet fever, puerperal fever, diphtheria, erysipelas, leprosy, ankylostomiasis, anthrax and phthisis (voluntary).

During the year under notice, 1,940 cases were notified, viz.: 1,370 amongst Whites, 544 amongst Natives, 16 amongst Eurafrikan, and 10 amongst Asiatics. These occurrences are discussed elsewhere in this report (see also Table E).

The procedure adopted in regard to notified infectious diseases, disinfection, etc., has been the same as in previous years (see Report 1904-6).

1,602 houses, 15 schools, 1 mine compound, and 99,135 articles of clothing, bedding, etc., were disinfected; 1 dairy was disinfected for tuberculosis.

## DISINFECTING STATION.

This is well equipped with two Geneste-Herscher steam disinfectors, formalin chamber, baths for "contacts," temporary shelters and ambulance sheds.

## EFFICIENCY OF DISINFECTION.

At page 21 of the Medical Officer of Health's Report, 1912-13, is recorded a case in which a mattress from a patient who had died of tuberculosis was returned from the Disinfecting Station without having undergone satisfactory disinfection.

It was thereafter decided to investigate experimentally the efficiency of our disinfecting processes by means of (a) formalin vapour and (b) saturated steam. The necessary tests were kindly arranged by Dr. Watkins Pitchford, Director of the South African Institute for Medical Research, and carried out early in 1914 by Mr. F. H. Joseph of that Institute. The Director's report was as follows:—

Johannesburg, 5th March, 1914.

## REPORT ON A BACTERIOLOGICAL INVESTIGATION INTO THE METHODS EMPLOYED AT THE JOHANNESBURG MUNICIPAL DISINFECTING STATION.

The micro-organisms used in carrying out the following tests were the bacillus coli and the bacillus anthracoides. These organisms have distinctive cultural characters, and are therefore peculiarly suited for investigations of this nature. The bacillus coli is similar in many respects to the bacillus typhosus, and is an example of a moderately resistant non-sporing organism. The bacillus anthracoides is a spore-forming organism of the subtilis group, and closely resembles the bacillus anthracis. The spores are highly resistant to both chemical and physical disinfection.



"Test-slips" were prepared as follows:—Cultures of each of these organisms were separately mixed with bread-crumbs to form a thick paste. This paste was spread thinly on strips of linen, which were then allowed to dry.

Two methods of obtaining sterilisation are adopted at the Disinfecting Station: (1) Exposure to Formaldehyde Vapour; (2) Exposure to Saturated Steam.

#### I.—STERILISATION BY MEANS OF FORMALDEHYDE VAPOUR.

In this process, formaldehyde vapour is generated by the action of heat upon formalin solution. The gas passes into a zinc-lined chamber, fitted with an exhaust valve and two doors. The infected articles are put into the chamber from the receiving-room, and extracted, after "disinfection," through the other door. This chamber is used for the reception of all infected goods—such as books, feathers, furs, silk and leather goods—which might be damaged by a steaming process. The articles are subjected to the influence of formaldehyde vapour for about two and a half hours, during which period the gas is being continuously passed into the chamber. The articles are then removed, and spread or hung out in order to free them from all traces of the vapour.

##### *Experiment.*

Two of each kind of prepared "test-slip" (*Bacillus anthracoides* and *Bacillus coli*) were placed on the floor of the chamber, one of each being exposed, whilst the other was enclosed in a mass of cotton wool enveloped in brown paper. An open culture tube of the first-named organism was also placed on the floor of the chamber. The doors of the cell were closed, the escape valve screwed down, and the formaldehyde generator started. After two and a half hours the supply of vapour was shut off, and the escape valves and doors were opened. Owing to a misunderstanding, the doors were again closed (but not the valve) after one hour, so that when, fifteen hours later, the doors were opened to remove the test objects, there was still a powerful odour of formaldehyde vapour in the chamber, and sufficient of the gas remained to cause intense irritation to the eyes of the attendant. The exposure of the articles to formaldehyde vapour was therefore more prolonged than usual, and the test was therefore a more severe one than was anticipated.

The "test-slips" and culture tube were now taken to the Institute and submitted to cultural examination.

##### *Results.*

#### A—(*Bacillus Coli*).

Under the conditions of the experiment the formaldehyde vapour had killed the exposed bacilli. It had also penetrated the mass of cotton wool and devitalised the organisms in the interior.

#### B—(*Bacillus Anthracoides*).

The spores of this bacillus appeared to be entirely unaffected by the vapour. A profuse growth was obtained even from the freely-exposed "test-slip" and culture tube.

##### *Conclusions.*

The results obtained from this experiment suggest that, while the formaldehyde process may be a fairly efficient method for sterilising articles infected with organisms of moderate resistance, it cannot be relied upon, even when the time of exposure is greatly extended, to destroy sporing bacilli, such as *Bacillus anthracis*, *Bacillus tetani*, etc., nor, in all probability, such a highly-resistant organism as the *Bacillus tuberculosis*.

#### II.—STERILISATION BY MEANS OF SATURATED STEAM.

The apparatus installed at the Municipal Disinfecting Station is an "Equifex" stove (Defries & Sons). The machine consists, briefly, of a metal cylinder connected with a pressure boiler, and having its ends closed by two screwed-down doors which open into the "infected" and "disinfected" rooms respectively.

The present method of carrying out the process at the station is as follows:—The stove is first heated by the passage of steam through a series of tubes lining the walls of the stove. This preliminary serves to diminish or prevent subsequent condensation of steam within the stove. The articles to be disinfected are now placed in a wire crate, which is run into the machine, the doors are screwed down, and steam admitted into the chamber until the pressure gauge records 10 lbs. per square inch and the thermometer registers 206° F. This temperature and pressure are maintained for five minutes. The steam is then permitted to escape until the pressure falls to zero. Steam is again passed in, and the subsequent process repeated in all its details. The stove is then opened and the articles removed.

In the following experiments the "test-slips" were prepared in the manner already described, but in this instance all the slips were enclosed in packets.

##### *Experiment 1.*

Two "test-packets" containing the *Bacillus coli* and the *Bacillus anthracoides*, all wrapped in brown paper, were placed between the opposed surfaces of a loosely-folded mattress and introduced into the stove. These were now subjected to the disinfecting process as described above.

##### *Experiment 2.*

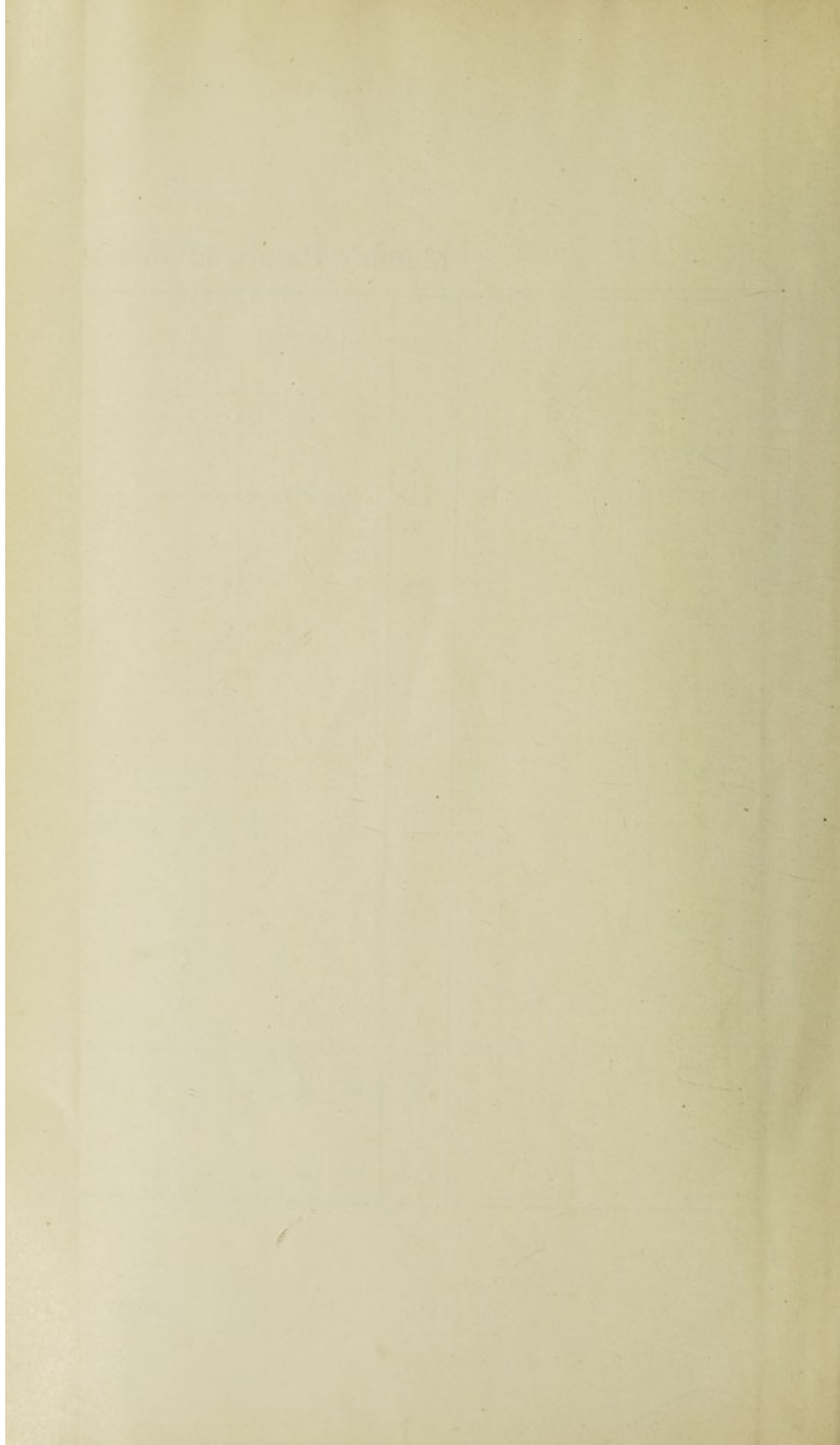
Two "test-packets" of *Bacillus anthracoides* were used in this experiment, one of these being wrapped in brown paper and one in linen. These were also placed between the opposed surfaces of a loosely-doubled-up mattress.

The temperature of disinfection was, as before, 206° F., but the pressure was increased from 10 lbs. to 12 lbs., and the second steam-contact period was prolonged to ten minutes.



Monthly Return of Infectious Disease notified from 1st July, 1913, to 30th June, 1914.

Disease	Res.	TOTALS	NUMBER OF DISTRICT.												Hospital.	Non-Resident.	Unknown.	TOTAL														
			July, 1913.	Aug., 1913.	Sept., 1913.	Oct., 1913.	Nov., 1913.	Dec., 1913.	Jan., 1914.	Feb., 1914.	Mar., 1914.	April, 1914.	May, 1914.	June, 1914.				I.	II.	III.	IV.	V.	VI.	VII.	VIII.	IX.	X.	XI.	XII.	XIII.	E.	C.
			1913.	1913.	1913.	1913.	1913.	1913.	1914.	1914.	1914.	1914.	1914.	1914.				1914.	1914.	1914.	1914.	1914.	1914.	1914.	1914.	1914.	1914.	1914.	1914.	1914.	1914.	1914.
Enteric Fever	W.	218	10	15	18	23	12	20	32	31	30	15	25	17	20	18	7	34	15	21	29	18	14	5	5	3	8	...	49	2	218	...
	N.	201	22	16	14	9	9	22	16	20	17	27	20	...	...	2	...	...	13	...	10	...	105	38	13	3	...	14	2	201	...	
	E. & A.	7	1	1	...	1	...	...	1	...	3	...	...	...	...	1	...	...	...	...	2	...	2	1	...	...	...	...	...	7	...	
Scarlet Fever	W.	924	95	112	131	115	102	98	61	67	32	49	23	39	46	132	22	74	51	100	129	98	82	18	22	36	120	...	1	...	924	...
	N.	4	...	...	...	1	3	...	...	...	...	...	1	...	...	...	...	...	...	...	1	...	...	...	...	...	...	...	...	...	4	...
	E. & A.	2	1	...	...	2	...	1	...	...	...	...	...	...	...	...	...	...	...	...	1	...	...	...	...	...	...	...	...	2	...	
Diphtheria	W.	66	8	3	8	3	5	2	4	6	1	10	4	9	1	6	...	3	2	8	13	6	7	1	1	...	18	...	66	...		
	N.	5	1	...	1	...	...	...	...	1	...	...	...	...	...	...	...	...	...	...	2	...	...	1	...	...	...	...	...	5	...	
	E. & A.	1	...	...	...	1	...	...	...	...	...	...	...	...	...	...	...	...	...	...	1	...	...	...	...	...	...	...	...	1	...	
Erysipelas	W.	76	6	9	16	7	5	8	3	4	6	4	8	12	8	3	16	5	6	11	2	4	1	...	7	...	1	...	76	...		
	N.	32	4	1	4	2	3	2	3	3	3	4	2	1	...	1	...	1	...	1	...	...	12	12	6	...	...	...	32	...		
	E. & A.	1	...	1	...	...	...	1	...	1	...	...	...	...	...	...	...	...	...	...	1	...	...	...	...	...	...	...	...	1	...	
Typhoid Fever	W.	11	1	1	3	...	2	1	...	2	1	...	...	1	...	...	1	5	2	...	...	2	...	...	...	...	...	...	...	11	...	
	N.	1	...	...	...	...	1	...	...	1	...	...	...	...	...	...	...	...	...	...	...	...	1	...	...	...	...	...	...	1	...	
	E. & A.	1	...	...	1	...	...	...	...	1	...	...	...	...	...	...	...	1	...	...	...	...	...	...	...	...	...	...	...	1	...	
Phthisis	W.	43	1	1	3	11	1	12	...	8	2	4	...	9	5	5	3	1	1	9	1	1	...	...	1	1	...	4	2	43	...	
	N.	290	19	29	17	18	24	28	33	23	14	24	28	31	1	...	1	...	1	...	1	...	...	229	19	33	1	...	2	2	290	...
	E. & A.	2	...	...	...	...	...	...	...	...	1	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	2	...	
Leprosy	W.	1	...	...	...	...	...	...	...	1	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	1	...	...	1	...	1	...
	N.	11	...	3	3	1	...	1	1	...	1	1	...	1	1	...	3	1	...	...	...	...	...	...	1	...	...	...	11	...		
	E. & A.	1	...	...	...	...	...	1	1	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	1	...		
Anthrax	W.	1	...	1	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	1	...	
	N.	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	
	E. & A.	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	
TOTALS	W.	1,370	121	142	179	159	125	130	115	101	81	83	65	73	89	169	27	131	82	138	191	125	108	26	39	39	155	...	56	4	1,370	...
	N.	544	46	49	38	31	37	43	52	41	39	46	55	54	1	3	2	1	18	1	14	...	350	72	56	5	...	16	5	544	...	
	E. & A.	16	2	1	...	2	1	1	2	2	3	1	1	...	2	1	...	2	4	...	2	...	...	...	...	...	...	...	...	...	16	...
TOTALS		1,940	169	193	218	195	163	176	177	151	124	130	116	128	93	173	29	136	111	139	207	125	111	378	101	86	160	...	72	9	1,940	...





*Experiment 3.*

Two "test-packets," similar to those employed in Experiment 2, were placed in the centre of a quantity of clothing, and immediately under a blanket.

The conditions of temperature and pressure were the same as in Experiment 2, but the second steaming process was allowed to continue for 15 minutes.

Disinfection.

*Experiment 4.*

In this experiment all the conditions were identical with those existing in Experiment 3, except that two five-minute periods of steam-contact, followed by one of ten minutes, were used.

*Results of Foregoing Experiments.*

In Experiment 1 it was found that all the colon bacilli were killed and that some of the anthracoides spores were destroyed.

In the second test most of the spores in both packets were devitalised, but a few were able to develop upon the culture media and produce typical growths of the bacillus anthracoides.

In Experiments 3 and 4 all the spores were apparently killed, for the culture media, inoculated with portions of the previously-infected slips of linen, remained quite sterile.

## CONCLUSIONS.

The foregoing experiments tend to show that the steam sterilising process as at present used at the Municipal Disinfecting Station is not altogether reliable. It is true that it suffices to destroy the moderately-resistant bacillus coli, but it fails to entirely sterilise a sporing culture of bacillus anthracoides.

The successful results obtained in Experiment 3 suggest that if the steam pressure be increased to 12 lbs., and the second steam-contact period be prolonged to fifteen minutes, satisfactory sterilisation may be secured in all cases. In order, however, to allow a sufficient margin of safety and to obtain absolute sterilisation, the second steaming process might be increased to twenty, or even twenty-five, minutes.

The details of these experiments were carried out for me by my assistant, Mr. F. H. Joseph.

(Sgd.) W. WATKINS PITCHFORD, M.D.

As regards Formalin Vapour, for want of a more suitable disinfecting reagent, its use is still continued at your Disinfecting Station for dealing with valuable books or valuable leather, furs or silks, which would be seriously injured by steam. The period of disinfection has, however, been increased to six hours, and the air of the disinfecting-closet is nearly saturated with moisture, in order to favour the condensation of formaldehyde on the various objects undergoing disinfection (vide *Novy, quoted in Tenth Report, State Board of Health, Maine, 1897, and M. v. Brunn, in "Lancet," 29th September, 1906, p. 891*). Whilst admittedly this formalin process is by no means absolutely reliable, no evidence of its failure in actual practice has been recognised either before or since the above-noted experiments.

As regards the use of Saturated Steam, directions have been issued which insure the exposure of the infected articles for thirty minutes in all to saturated steam at 215° F. The following instructions have also been given in order to secure from the automatic recorder fitted to the steam-disinfector a curve-record of (a) the steam temperature and (b) the length of the disinfecting period to which each consignment of clothing has been exposed:—

*"The Superintendent of the Disinfecting Station, Vrededorp.*

*"INSTRUCTIONS re RECORDS OF DISINFECTION.*

"1. It is absolutely necessary that accurate records be kept of the length of time to which each consignment of clothing sent for disinfection has been exposed to steam of the required temperature.

"2. It is the duty of the Clothes-Remover to hand to the Superintendent a signed list of articles brought by him from each house, and it is the duty of the Superintendent to sign a receipt therefor.

"3. The Remover will also give the Superintendent a receipt for the articles received from the Superintendent after disinfection.

"4. The chart on the recording-drum must show for each load which has passed through the disinfector

"(a) the temperature of the steam in the disinfector when disinfection commenced; and

"(b) the length of time to which the load has been subjected to such steam.

"5. Opposite each chart-record must be marked the 'disinfecting number' of the load as it appears on the printed list handed in by the Remover.

"6. Often the quantity of clothing, bedding, etc., from any given house will be sufficient to fill the disinfector several times. In such cases the printed disinfecting number (e.g., 150) which appears on the list handed to the Superintendent must be written opposite the chart-record of the first load disinfected. The chart-record of the second load disinfected should then be marked 150a, the third load 150b, and so on.



M.O.H. 1913-14

Disinfection.  
Isolation  
Hospital.  
Receiving  
Hospital.  
Ambulances.

"The letter (a) or (b) or (c), as the case may be, should be written on the Superintendent's printed list opposite each article, or each group of articles, included in load (a) or (b) or (c).

"7. When there is no more room for records on a chart, the chart should be taken off and delivered at the Medical Officer of Health's Office next morning.

"8. Any stoppage or irregularity of the recording apparatus is to be reported at once by telephone to the Medical Officer of Health's Office, and confirmed in writing.

"9. Each longitudinal division on the chart is equal, approximately, to fifteen minutes. The time value of these divisions, however, should not be alone relied on, but should be carefully checked with the clock during each process of disinfection.

"The Superintendent is to understand that the foregoing measures are necessary both for the protection of the public and of the Department, including the Superintendent himself.

"CHARLES PORTER,  
"Medical Officer of Health."

### ISOLATION HOSPITAL.

Particulars are appended as to the number, nature, cost, average length and result of isolation of the Johannesburg cases of infectious diseases treated by Dr. Mehliß (1913-14) in the isolation ward at Rietfontein, which, since the abolition of the Rand Provisional Joint Committee, has been administered by the Government:—

	Scarlet Fever.	Measles.	Chickenpox.	Diphtheria.	Purpura.	Mumps.
WHITES, 1913-14—						
Admissions ...	135	14	1	1	2	3
Recovered ...	128	9	1	1	2	3
Not Discharged ...	5	5	—	—	—	—
Died ...	2	—	—	—	—	—
COLOURED, 1913-14—						
Admissions ...	1	7	32	3	—	—
Recovered ...	1	7	32	3	—	—
Not Discharged ...	—	—	—	—	—	—

Total Cases:—Whites, 156, with two deaths; Coloured, 43, with no deaths.

Average length of isolation:—Whites, 31.66 days; Coloured, 27.31 days.

Cost per head per day:—Whites, 10s. 6d.; Coloured, 2s.; Total cost, £2,837 10s. 6d.

Payments by patients, £547 12s. 6d.; amounts still due by patients, £77 3s. 6d.

The Council pays Government 10s. 6d. per day per White patient and 2s. per day per Coloured person. The entire responsibility for treatment rests with Government alone. The accommodation at Rietfontein is admittedly insufficient and, in some respects, unsuitable, and Government is about to erect a new Isolation Hospital within the Municipal Area.

### RECEIVING HOSPITAL.

De Meillon's house, west of the Thoma Brewery in Braamfontein, was kept in readiness for outbreaks of plague or smallpox, but it was not necessary to use it.

### AMBULANCE EQUIPMENT.

There are one motor ambulance and two well-fitted modern two-horse ambulances for Whites. For Natives there is a motor van. There are also five light-running four-wheeled canvas-covered American vans for removing clothing, contacts, sitting-up patients, etc., and one Cape cart.

During the period under review, 163 White cases and 82 Coloured were removed to Rietfontein by the above transport. In addition, 61 White patients were removed to the Johannesburg Hospital, and transport for 10 lepers to Pretoria was arranged for. A few cases were also removed from outside districts at the request of, and on payment by, the local authorities concerned.



## BACTERIOLOGICAL DIAGNOSIS.

M.O.H. 1913-14

The following are particulars of the specimens examined under this heading for the Town Council at the Government Laboratory, Hospital Hill, during the year under review:—

Disease	Product.	Positive.	Negative.	Doubtful.	Bacteriological Diagnosis. Curative Sera. Nursing Homes. Abattoirs.
Typhoid	... ..	38	82	5	
Tuberculosis	... ..	10	3	—	
Diphtheria	... ..	109	225	4	
Plague	... ..	—	—	—	
		157	310	9	

These figures do not include rats examined for suspected plague (v. p. 22.)

## CURATIVE SERA.

The Public Health Committee, on September 15th, 1902, sanctioned an arrangement by which the supply of therapeutic sera is obtained from Messrs. Burroughs, Wellcome & Co., of London, and issued at cost price to medical practitioners, or gratuitously in necessitous cases. The amount of serum obtained and distributed between 1st July, 1913, and 30th June, 1914, is as follows:—

<i>Antitoxin.</i>		<i>Phials</i>	<i>Phials</i>
Anti-diphtheritic ... ..	...	obtained.	distributed.
		Nil	8

## NURSING HOMES.

There are 22 registered nursing homes in Johannesburg. These places are inspected and licensed by the Public Health Department.

In January, 1904, the Transvaal Medical Society recommended "that the space requirements for Nursing Homes should be as follow—(a) for all infectious and all serious operation cases not less than 1,200 cubic feet of free air-space, and 100 sq. feet floor-space; (b) for all other cases not less than 800 cubic feet of free air-space and 75 sq. feet of floor-space."

## PUBLIC ABATTOIR.

The Abattoir was opened on the 24th October, 1910, and with the Stock Yard and Cattle Market is under the direction of Mr. J. Irvine Smith, M.R.C.V.S. The following information is excerpted from his Annual Report for 1913-14:—

## COMPARATIVE STATEMENT OF ANIMALS SLAUGHTERED AT JOHANNESBURG ABATTOIR.

DESCRIPTION OF ANIMAL.	1910-11 (8 months).	1911-12.	1912-13.	1913-14.
Cattle ... ..	33,782	62,705	72,122	67,860
Sheep, Lambs and Goats ...	202,140	361,865	369,229	379,521
Calves ... ..	1,800	3,109	3,377	3,230
Pigs ... ..	19,117	26,057	31,318	24,442
Totals ... ..	256,839	453,736	476,046	475,053

## FINANCIAL POSITION.

During 1913-14 the Abattoir, with the Live Stock Market, has yielded a nett profit of 9½ per cent. on the capital invested, in addition to interest, depreciation and all other expenditure.

The profits were thus disposed of:—

Contribution to Council's Capital Fund	...	...	£2,368 0 0
Contribution in aid of Rates	...	...	6,985 0 0



NECESSITY FOR UNIFORM SYSTEM OF MEAT INSPECTION.—On this important question the Director of Abattoirs comments as follows:—

For the past four years there has been a considerable force of opinion growing in favour of the establishment of a uniform system and standard of meat inspection for South Africa.

Examination of the present conditions of meat inspection reveals that each Municipality is permitted to adopt and fix its own standard, with the result that in areas such as the Witwatersrand, where a number of Municipalities adjoin each other, the standard of meat inspection varies considerably.

The Local Government Ordinance of 1912 permits each Municipality to charge an inspection fee for any meat admitted into its area, irrespective of it having already passed a recognised official in any other Municipal Area.

Paragraph 157 of the Local Government Ordinance states that any person bringing meat into a Municipal Area must submit same for examination and stamping, and pay the tabulated fees.

The loose wording of the Ordinance permits a Municipality to impose a varying scale of charges, and it will also be clear that the charging of additional fees tends to create monopolies within Municipal Areas, with the result that there has crept into existence a pernicious system of inter-Municipal taxation of meat, which tends to maintain prices of meat at a higher standard than they should be, and prevents the easy exchange of surplus supplies between the various Municipalities along the Reef.

It will be remembered that this phase of the question was considered by the Public Health Committee on the 20th March, 1913, and, after a very full discussion, the following resolution was adopted:—

“That when any Municipality having the power to enforce meat inspection charges agrees to admit into its Municipal Area, free of charge, butchers’ meat bearing the Johannesburg meat stamp, the Johannesburg Municipality will reciprocate by admitting, free of charge, all butchers’ meat into the Johannesburg Municipal Area bearing the stamp of the Municipality concerned, both Municipalities retaining the right to stamp and subject such meat to any further inspection they may think fit.”

It will be seen that the above resolution allowed all Municipalities accepting reciprocity of charges to retain the right to submit such meat to any further inspection they might consider necessary.

Up to the present, no Municipality has accepted this offer of reciprocity, and the explanation may be sought for in the fact that the original object of providing the public with wholesome meat is being subordinated to the financial aspect. The general effect of the loose wording in Paragraph 157 of the Local Government Ordinance, 1912, is to eliminate fair and reasonable competition in the meat trade, to increase the price of meat to the public, and to permit each small Municipality to form its own meat ring and establish a monopoly against the importation of meat from outside, no matter how wholesome it may be.

The only remedy left the Council is to make representations to the Provincial Council so that Paragraph 157, Sub-section (11), of the Local Government Ordinance shall be amended to provide for exemption from charges, under certain conditions, on the lines of the following suggested amendment:—

Paragraph 157, Sub-section (11). “For compelling and regulating the submission to the Council of all meat or dead animals intended for the food of man which may be conveyed or transported into the Municipal Area by the owners or consignees of the same, and at their expense, in order that such meat or dead animals may be inspected or passed by the Council; for regulating the branding or stamping of such meat or dead animals and the fees to be charged therefor, and for preventing the sale or use of such meat or dead animals for the food of man until the same have been inspected and passed by the Council”; provided that no fees shall be charged therefor if such meat or dead animals is accompanied by a certificate from a duly approved medical officer of health or veterinary surgeon of any Municipality that such meat or dead animals have been duly inspected and stamped at the time of slaughter and found free from disease.



The amendment contains the additional words underlined, and will prevent the infliction of further charges, but does not interfere with the right of Municipalities to continue their inspection if they think it necessary.

M.O.H. 1913-14

Meat  
Inspection.  
Milk  
Supply and  
Analysis.

#### THE WIDER ASPECT.

The question of uniform meat inspection has a wider aspect, and there is much more to decide than the procedure to be adopted in the fixing and collection of inspection fees. It is necessary to consider the establishment of a system and standard of inspection which will remove the many glaring anomalies which at present exist, and establish uniform methods which will give the trader, the producer and the consumer justice and fair play without favour to any one district or individual. Absolute uniformity may be unattainable, but there is no reason why an endeavour should not be made to improve on the existing system. In the conduct of meat inspection there is room for two grades of officers. Much of the work is of necessity of a routine nature and can be undertaken by trained lay assistants. These need not be so elaborately equipped as the professional inspector, but most certainly must have undergone a satisfactory course of tuition, and must have attainments such as would ensure their ability to carry out the instructions of their superiors. In this way they can economise the time and energies of the professional expert, upon whom, in every instance, must devolve the more elaborate processes of examination and final word as to the fitness or otherwise of the meat for human food. In meat inspection scientific method as opposed to "rule of thumb" is imperative. Meat inspection cannot be properly conducted without the aid of those instruments and methods of precision which form the armamentarium of the modern laboratory, and without the ability to make use of them the modern inspector would fail to carry out his duties in a proper and satisfactory manner. Briefly, meat inspection consists of three things—(1) the detection of abnormalities; (2) the application of the knowledge whence these abnormalities arose; (3) the application of knowledge of what these abnormalities imply in respect of the health of the community.

#### MILK SUPPLY.

##### COWSHEDS AND MILKSHOPS.

300 cowsheds and milkshops (122 retail) are licensed and, as far as practicable, kept under observation.

The question of the milk supply of Johannesburg was specially investigated and reported on in January-June, 1913 (*vide* M.O.H. Annual Report, 1912-13, pp. 32-34).

It is hoped that some slight improvement has been since effected.

A new code of By-laws for the Regulation of Dairies, Cowsheds and Milkshops has, after repeated conferences with the Dairy Farmers' Association, been adopted by the Council, but it still awaits the sanction of the Provincial Government.

#### MILK ANALYSIS.

Appended is a tabulated summary of the results of analyses and prosecutions:—

	1907-8	1908-9	1909-10	1910-11	1911-12	1912-13	1913-14
No. of Samples taken ...	264	244	342	292	311	375	343
No. examined bacterially	—	—	—	—	23 (all negative)	70 (89 negative)	42 (all negative)
No. deficient Solids not Fat	33	27	11	3	7	6	22
No. do. Fat ...	7	3	15	5	2	4	7
No. with Preservatives ...	—	—	—	—	—	—	—
No. of Prosecutions ...	7	6	7	6	6	13	13
Amount of Fines ...	£25	£22	£45/10/-	£14	£30	£78	£91



## INSPECTION OF FOODSTUFFS.

Inspection of  
Foodstuffs.  
Analysis  
of Foods.  
Water  
Supply.

The following goods were condemned by the Food and Drugs Inspector:—  
Fish, 3,550 lbs.; fruit, 150 cases; bacon, 8 pieces, milk, 13 cases; peas, 12 cases; smoked fish, 593 lbs. and 97 cases; fillets, 206 boxes; salt herrings, 52 casks; cheese, 6 cases; crayfish, 2 cases; eggs, 120 dozen; tomato sauce, 33 cases; and salmon, 5 cases.

A special inspector examines foodstuffs arriving at the Kazerne.

During the period under review he passed 1,193,941 lbs. of bacon, etc., 6,762,487 lbs. of fish, 26,019 lbs. of poultry, and 6,497 lbs. of game.

He condemned 74,050 lbs. and 100 boxes fish, 26 boxes haddocks, 2 cases and 250 lbs. crayfish, 1 box shrimps, 900 lbs. fruit, 247 lbs. polonies, and 3,800 lbs. cheese.

## ANALYSIS OF FOODS, 1913-14.

In addition to the 235 water examinations (see page 31), some 452 articles of food were examined during 1913-14 at the Government Laboratories. Details are appended:—

Number and Description.	Genuine or Pure.	Adulterated or Impure.	Doubtful.
343 Milk ... ..	314	29	—
88 Butter... ..	88	—	—
3 Cocoa ... ..	3	—	—
2 Malted Food ... ..	2	—	—
16 Coffee (for Chicory) ... ..	16	—	—

This gives an average of 452 samples per year, or 3·373 per annum per 1,000 of the white population, as compared with 5·3 per 1,000 in 1907 of the population (1901 census) in London, and 2·5 in the English Provinces.† Formerly it was understood by the Local Government Board of England that one sample per 1,000 of the population should be aimed at; but, as will be seen from the above, this figure is considerably exceeded at the present time. The English Board of Agriculture tries to encourage the taking of three per 1,000, and divide these amongst milk, butter and cheese.\*

## WATER SUPPLY.

Water is supplied in bulk by the Rand Water Board to the Municipal Council. The Municipal Council controls the distribution of water throughout the town, and owns the reticulation.

The various sources from which the town's supply is drawn have been detailed in previous reports, and are at present shortly as follow:—

- (1) About three-fifths of the daily supply is from deep wells in the dolomite at Zuurbekom, 18 miles west of Johannesburg. This water is of exceptional purity.

[The Chief Engineer, Rand Water Board, states that between August, 1912, and March, 1913, development work increased the supply from this station from a maximum of 2·85 million gallons to 6·4 million gallons a day.]

- (2) About 250,000 gallons altogether is obtained from—
  - (a) Two boreholes in the Lower Witwatersrand Beds in Ellis Park.
  - (b) Two boreholes in hard shale in Staib Street, Doornfontein.
  - (c) Two wells sunk in weathered slates through a track of alluvium in Braamfontein, east of Auckland Park.

† "Sale of Food and Drugs"—Extracts from Annual Report of Local Government Board (England), 1907-1908.

\* Letter to M.O.H., dated 9th September, 1909, from "Department of Inspector of Foods" of Local Government Board (England).



- (3) The remainder is from Zwaartkopjes (Klip River Valley), from wells in dolomite, with some admixture of surface water. This water has for the past six years been treated with chlorinated lime, in the proportion of 13 lbs. (with guaranteed minimum of 30 per cent. available chlorine) to one million gallons, or about 3.9 parts chlorine per million. The result has been satisfactory, and no complaints have been received.

M.O.H. 1913-14  
Water  
Supply.

[The Chief Engineer, Rand Water Board, states that the yield from the Zwaartkopjes source fell from 4.4 million gallons at the end of November, 1913, to about 2 million gallons at the end of March, 1914, and no recovery is expected until the underground channels and fissures are replenished by steady rains.]

**ROODEPOORT TEMPORARY SCHEME.**—In 1913 the Rand Water Board acquired from the owners of the non-dolomitic farm "Roodepoort," in the Klipriver district, the right of obtaining a combined surface and underground supply of one million gallons a day for a period of from five to seven years.

**VAALE RIVER SCHEME.**—This scheme received the sanction of Parliament during the session February to May, 1914, and provides for a permanent and reliable supply of 10 to 20 million gallons a day. The selected site for reservoir is situated about 24 miles below the Vereeniging Railway Bridge and some 15 miles above the small town of Parys. "The impounding structure which it is proposed to erect is a barrage, which is not only cheaper than a masonry dam, but possesses the additional and important advantage of being more suitable for controlling the heavy floods which sometimes occur in the Vaal River. Structures similar in design to that proposed by the Board have been used on Indian rivers and elsewhere in recent years, and have been found eminently satisfactory. Contrary to the usual practice in such matters, it will be necessary to pump at a point about 17 miles below the upper end of the reservoir instead of from the barrage site. This, however, will not be attended with any real difficulty, as it appears that the fall in the level of the river-bed between Vereeniging (where the pumping station is to be situated) and the barrage at Lindeque is comparatively small, being only 8ft. over the whole distance of 22 miles. The cost of the whole scheme is estimated at £1,146,700, exclusive of the cost of raising the fresh capital required."—(Vide p. 5, Ninth Annual Report, Rand Water Board.)

The length of mains within the Municipal Area is now 354.25 miles, no less than 9.18 miles having been added during 1913-14, while during the same period 915,593,500 gallons of water were supplied to consumers connected to same. These figures show an increase over any former year. The draw-off from the Yeoville service reservoir has been very varied, and at times, when only a few inches have been left, has caused considerable anxiety.

**ZWAARTKOPJES.**—The water from the western series of wells at Zwaartkopjes has been satisfactory, but, as in previous years, the bacterial content of the water from the southern section has varied considerably.

The chloride of lime process for sterilising water at Zwaartkopjes has been continued, and the results are satisfactory.

The softening process has been abandoned, as it was almost useless, and, pending the introduction of a new scheme, the unsoftened water is being supplied.

#### CHEMICAL AND BACTERIOLOGICAL EXAMINATIONS.

235 samples of water were taken for examination during the year 1913-14, namely, 86 chemical and 149 bacteriological.

#### HARDNESS OF WATER.

The "hardness" of the public supply is at times very considerable, having been as high as 29.6 degrees for delivery main water, whilst the yield of an individual Klipriver Valley borehole (A2) was no less than 39.4 on 2nd December, 1914. Speaking broadly, from 50 per cent. to 70 per cent. of this hardness is what is known as "temporary," i.e., due to the presence of carbonates of lime and magnesium, and can be removed by boiling. "Permanent" hardness is chiefly, though not entirely, due to the presence of sulphates of lime and magnesium, and it is not an entirely easy matter to reduce this hardness under what may be termed domestic conditions.



M.O.H. 1913-14

Water  
Supply.  
Aerated  
Water  
Factories.  
Sewerage.  
Intakes.

Owing to recent complaints, the question of reducing "permanent" hardness was referred to the Government Analyst (Dr. McCrae, Ph.D.), who very kindly advised as follows:—

Treatment of the water with sodium carbonate effects a considerable reduction in hardness, and it would not be a difficult process to carry out. I have tried it without using scientific accuracy in the measurements, and find that it is quite easy to reduce water of 24 degrees hardness to 6 to 9 degrees.

I suggest that — be instructed to carry out the following process:—Dissolve half an ounce of dry sodium carbonate (or an ounce and a half of clear crystals of washing soda) in about eight ounces of water. Add this solution to 12 gallons of water. The water may remain clear for a short time, but it soon becomes turbid. The water is now allowed to stand until the solid matter causing the turbidity has settled and the water itself is quite clear. This requires several hours, and would most conveniently be carried out by setting the water to clear over-night. The clear water is decanted from the sediment, and is ready for use.

I think no exception can be taken to the use of water treated in this way for shaving purposes. The alkalinity is not increased to such a degree as will be likely to cause irritation to the skin, because nearly all of the sodium carbonate will be changed into the even less harmful sodium bicarbonate and sodium sulphate.

The measurements should, of course, be reasonably accurate so far as the half-ounce of dry sodium carbonate and the 12 gallons of water are concerned, but it is not necessary to aim at anything like scientific accuracy.

#### AERATED WATER AND ICE FACTORIES.

The By-laws for the regulation of these trades, which were gazetted on the 6th April, 1906, continue to work well.

#### SEWERAGE.

The Town Engineer has kindly supplied the following information:—

On 30th June, 1914, there were 85·37 miles of sewers completed, chiefly in the following districts:—Johannesburg (south of Railway), Braamfontein, Ferreira's, Fordsburg, Marshallstown, City and Suburban, Doornfontein, New Doornfontein (south of Railway), Hillbrow (south of the Hospital Hill side), and the Malay Location.

On the same date, 8,499 premises had been connected.

Owing to the torrential seasonal rains, the "Separate System" has been adopted, *i.e.*, surface and storm waters are excluded from the sewers and carried off in separate culverts and pipes, the latter often being laid in the same trench as, but above, the sewers.

#### NIGHT SOIL AND SLOPWATER INTAKES.

There are eight "intakes," at which night soil and slopwater are turned into the sewer. Their design is, in the opinion of the Medical Officer of Health, exceptionally good. Particulars are appended of the daily work done by each intake between 1st July, 1912, and 30th June, 1913:—

Intake at	Used since	Approx. average quantities disposed of daily.			
		Nightsoil.	Urine.	Slopwater.	Clean Water for Flushing purposes.
Main Compound ...	Nov. 14th, 1908 ...	6,739	1,264	14,746	20,000
Natal Spruit ...	Jan. 19th, 1909 ...	5,134	1,133	82,377	15,000
Springfield ...	May 25th, 1909 ...	4,678	913	—	8,000
Wolhuter ...	April 26th, 1909 ...	4,871	2,719	21,508	10,100
Shanks Street ...	August, 1907 ...	—	1,929	4,235	600
Gaol ...	Before the War ...	—	—	50,837	1,000
Ophirton ...	May 18th, 1908 ...	—	—	6,295	—
Bezuidenhout Valley ...	October 6th, 1911 ...	1,993	—	13,887	9,000
Totals ...		23,415	7,958	193,885	63,700

Total Gallonage daily—all kinds—288,958.



## SEWAGE DISPOSAL.

M.O.H. 1913-14

This question was dealt with in detail at pp. 48-9 of the Medical Officer of Health's Report for triennium 1906-9. It was there stated that in a Joint Report (dated 26th August, 1909) by the Town Engineer and Medical Officer of Health, a number of very important recommendations were made as to the future management of the farm. Those recommendations were accepted, and have been conscientiously carried out by the Council. The sewage is now screened, treated in a detritus tank and in continuous sedimentation tanks, and thereafter irrigated upon land laid out in such a manner that a considerable interval of rest usually elapses between each period of irrigation of any one particular area. The length of carriers is now 34 miles, and the maximum irrigable area is 790 acres. The average daily flow of sewage was about one and a half million gallons.

Sewage  
Disposal.  
Mines  
Sanitation.

Sludge Disposal is by burial in suitable trenches.

## MINES SANITATION.

In January, 1904, the Council, on the advice of the Medical Officer of Health, appointed a special and highly qualified Inspector (Mr. A. Cowie) for mine sanitation work, this being the first appointment of the kind recorded in any British mining community. Mr. Cowie has since worked tactfully and steadily, and the excellent and beneficial character of his work may probably claim a share in the reduction of the death-rate amongst native miners. On matters relating to surface sanitation, Mr. Cowie reports directly to the Medical Officer of Health, Johannesburg. As regards underground sanitation, he works, by arrangement agreeable to the mines and all concerned, as an official of the Mines Department, and reports to the Government Mining Engineer, who transmits a copy to the Medical Officer of Health, Johannesburg. A copy of every report is sent to the Chamber of Mines, the Mine Manager and Doctor, the Mines Department, the Native Affairs Department, the Medical Inspector of Mines, and the Governor-General.

In January, 1909, Mr. R. Beattie, a District Inspector in this Department, was appointed Assistant Mines Sanitation Inspector, and, in collaboration with Mr. Cowie, is doing excellent work. In August, 1912, a second Assistant Inspector (Mr. E. W. Clarkson), and in July, 1913, a third Assistant Inspector (Mr. A. McIver) were appointed.

Attached is the Mine Sanitation Report for 1913-14:—

18th February, 1915.

The Medical Officer of Health,  
Johannesburg.

Sir,

In accordance with your instructions, I have the honour to submit the following general statement regarding the work of Mines Sanitation Inspection for the year ending 30th June, 1914. Owing to the regrettable illness of Mr. Alexander Cowie, C.E., whose excellent work during the past eleven years has been repeatedly recorded, this report has been prepared on the usual lines by Mr. Beattie, Acting Mines Sanitation Inspector.

A. SURFACE SANITATION.—The usual mine-to-mine inspection has been systematically carried out under your direction. Such work embraces a minute inspection of all native compounds, locations, native hospitals, native eating houses, contractors' compounds, brickfields, power stations, timber yards, railway stations and surroundings, stone crushing works, white and native change houses, mine boarding houses, married and single white quarters, the sanitary arrangements at the various works, the disposal of refuse, and generally the scavenging of the entire surface.

On the completion of an inspection of a mine, a detailed report was submitted to and dealt with by you, and re-inspections were made in due course, with a view to ensuring that the various recommendations were complied with.

In addition to this routine work, all licensed premises, such as Kaffir eating houses, butchers' shops and brickfields, have been regularly inspected and reported upon, and complaints as to nuisances (both verbal and written) have been satisfactorily dealt with.

During the year under review a considerable sanitary improvement has been effected by the provision on every mine of a suitable refuse destructor. The provision of the Municipal type of covered portable rubbish-bin (effected on a few mines in the previous year) has been extended to all properties. Refuse is carted daily from these bins to the refuse destructors and dealt with as it arises. The result of these two improvements has been the doing away of refuse dumps with their attendant smell-nuisance, and at the same time prolific fly-breeding sites have been abolished.



M.O.H. 1913-14

Mines  
Sanitation.  
Hygiene of  
Printing.

In connection with fly-nuisance, your Inspectors have devoted special attention to securing the fly-proof screening of Kaffir eating houses, butchers' shops, mine boarding houses, compound kitchens and store-rooms, and native latrines.

Another improvement during the year is the provision of special "marewu" breweries at the various compounds. "Marewu" is a drink made from sour or stale mealie-pap. Previously it was made by the natives in their sleeping-rooms, and resulted in the storage of a large number of cans, tins, and much dirt and spillage from the said receptacles. The "marewu" is now made under mine supervision at the compound breweries, and the result is that the natives' sleeping apartments are much improved in general cleanliness.

Additional septic tank installations have been completed during the year at certain mines, and though it is too early to report as to their efficiency or otherwise, it is to be regretted that, where possible, such mines did not connect up directly with the Municipal sewer, and thus prevent the creation of a number of sewage disposal works on the thickly-populated Reef. The question of connecting up the mines, where possible, with the Municipal sewer is the one outstanding item which calls for attention.

B. UNDERGROUND SANITATION.—Regular and systematic inspection has been made of all sanitary conditions and arrangements underground. The items specially dealt with have been—

- (i) Provision of sufficient and conveniently accessible latrine accommodation, separate for both races, on the various working levels.
- (ii) Daily cleansing and disinfecting of all sanitary conveniences, stations, drives and cross-cuts; regular and frequent lime-washing of the conveniences and the face of the rock surrounding and overhanging the stations.
- (iii) Provision of a satisfactory water supply on all levels.

Reports on each inspection have been submitted to the Inspector of Mines, and, without exception, the mine authorities have been sympathetic and expeditious in their treatment of all recommendations embodied in such reports.

The special type of underground sanitary bucket with close-fitting lid is in use at all mines. At a certain group of mines the O'Brien system of pail closet has quite recently been installed underground, and the Municipal night soil removal services discarded. It is somewhat premature to give a definite expression of opinion as to the merits or otherwise of the change.

The appointment of Mr. A. McIver as an additional Inspector on July 1st, 1913, has enabled closer supervision to be exercised. An improvement in the sanitation and general scavenging of the mines has been noticeable yearly, but in no year has it been so marked as in the period under review. Much assistance has been derived from the mine managers, who invariably have treated your Inspectors and their reports sympathetically. No difficulty has been experienced in having all reasonable recommendations and requirements carried out.

Thanks are due to Dr. Orenstein (Superintendent of Sanitation, Rand Mines, Ltd.) for friendly criticism and much help in matters relating to improved sanitation on mines under his jurisdiction.

The Government Mining Engineer and the Director of Native Labour have, as usual, been kept in close touch with all steps taken by the Public Health Department regarding mines sanitation.

In conclusion, I beg to record the excellent and energetic work of the Assistant Mines Sanitation Inspectors, Messrs. Clarkson and McIver.

I have the honour to be, Sir,

Your obedient servant,

RICHARD BEATTIE,  
Acting Mines Sanitation Inspector.

The Medical Officer of Health wishes again to record very clearly the opinion which he has repeatedly expressed, that it is highly desirable in the interests of the public health that a water-carriage system should be installed as soon as possible on the mines, and the mines connected to the outfall sewer.

A code of "*Recommendations in regard to Underground Sanitation*" was drawn up in this office in 1910, and suitably circulated. In 1913 a similar résumé re "*Surface Sanitation*" was prepared and issued in pamphlet form.

#### THE HYGIENE OF PRINTING.

During the period under notice considerable improvement was effected in the principal printing offices in regard to the provision of ventilating installations, hoods, exhaust fans, dress receptacles and other matters. In this matter the Medical Officer of Health received ready and invaluable assistance from Mr. George Hills, M.P.C. (President, Johannesburg Branch Typographical Union).



## SLUM PROPERTY.

M.O.H. 1913-14

This matter is of great importance. Its circumstances and bearings in Johannesburg have been discussed at some length in the Medical Officer of Health's Report for 1912-13, from which the four following paragraphs are quoted:—

Slum  
Property.

“Section 84 of the Local Government Ordinance 1912 empowers the Council to take proceedings before the Magistrate for the closing of premises used for human habitation when the Council is satisfied, on the certificate of the Medical Officer of Health, that in consequence of defective or unsuitable construction or arrangement, bad condition, want of light, air or ventilation, or other sanitary defect likely to *retain, engender or spread the infection of any disease*, and that by reason of such liability the occupation of such premises constitutes, or would constitute, if the same were occupied, a grave danger to the public health or to the inhabitants of such premises or any neighbouring premises.

“In England, ‘The Housing of the Working Classes Act, 1890.’ Section 32, makes it the duty of every local authority to take proceedings for closure against the owner of any dwelling house which appears to be in a state ‘*so dangerous or injurious to health as to be unfit for human habitation.*’ It is, further, specified in the third schedule of the Act that (elsewhere than in London) closure proceedings shall be taken under the Nuisance Sections (91—97) of the ‘Public Health Act, 1875.’

“Under Section 84 of the Transvaal Local Government Ordinance 1912, however, the Medical Officer of Health must certify

- (1) that the reported ‘premises are in consequence of defective or unsuitable construction or arrangement, bad condition, want of light, air or ventilation, or other sanitary defect, *liable to retain, engender or spread the infection of any disease,*’ and
- (2) ‘that by reason of such liability’ (*i.e.*, to retain, engender or spread the *infection of any disease*) ‘the occupation of such premises constitutes or would constitute a grave danger, etc.’

“This Clause was originally drafted in 1904 to deal specially with areas or premises infected with plague, and it will be observed that it specifically limits the reference of the Medical Officer of Health's certificate to ‘the *infection of any disease.*’ Now, the only two diseases which can be practically considered in this connection are tuberculosis and plague. In respect of tuberculosis, however, the doubt of the existence of such special liability is such that, in view of recent work and expression of weighty opinion on the subject, one cannot conscientiously swear to such liability as an absolute fact, however probable it may be. With regard to plague, there is no known plague in South Africa at present, and, therefore, the liability of any dwellings in Johannesburg to ‘retain or spread the infection’ of plague is, at the moment, practically non-existent.”

Fortunately, however, Section 88 (23) (c) of the Local Government Ordinance 1912, empowers the Council to make, alter, or revoke By-laws for the closing of buildings or parts of buildings “*unfit for human habitation,*” and for the prohibition of their use for habitation or occupation, while Section 72 (28) (a) authorises By-laws for “compelling the pulling down, removal . . . of all buildings . . . which have been allowed to fall into a dilapidated and ruinous condition, and for doing such work at the cost of the owner.”

The following draft By-laws under these Sections were prepared by the Medical Officer of Health in November 1913, and handed to the Town Clerk on 2nd December 1913:—

## HOUSING.

21. (a) When any building or part thereof is unfit for human habitation, the Council may, after giving not less than seven days' notice in writing of its intention to the owner of such building, complain to the Magistrate, and, if the conditions proved to exist are such as to render the building, in the judgment of the Magistrate, unfit for human habitation or occupation, he may prohibit the use thereof for such purpose until, in his judgment, the building is rendered fit for such purpose.

(b) When such prohibition of the use of any building for human habitation or occupation has been made, the Council shall forthwith cause a copy of such prohibition to be affixed in a conspicuous position on the building, and shall serve a copy of the same on each of the occupying tenants, if any.



M.O.H. 1913-14

Slum  
Property.

(c) No person shall after the date specified in such prohibition, and before such building has been rendered fit for habitation or occupation to the satisfaction of the Magistrate, inhabit or occupy such building, or cause or suffer the same to be inhabited or occupied. Any person convicted of a breach of this By-law shall be liable to the penalty specified in By-law No. 11.

22. (a) Where a Closing Order under By-law No. 21 has remained operative for a period of three months, and the building has been allowed to fall into a dilapidated or ruinous condition, the Council may, after giving not less than fourteen days' notice in writing of its intention to the owner of such building, apply to the Magistrate for an Order for the pulling down and removal of such premises, and for doing such work at the cost of the owner.

(b) The Magistrate, if satisfied at the hearing of the application, that the dilapidated or ruinous condition of the building has not been remedied, and that the necessary steps are not being taken with all due diligence to remedy it, shall make an Order for the pulling down and removal of such premises, and may authorise the Council to do such work at the cost of the owner.

(c) If the owner undertakes to execute forthwith the works necessary to remedy the dilapidated or ruinous condition of the building, and the Magistrate considers that it can be so remedied, the Magistrate may, if he think fit, postpone the operation of the Order for such time, not exceeding six months, as he thinks sufficient to give the owner an opportunity of executing the necessary work.

(d) The Council may recover from the owner of any building the cost of demolishing such building in pursuance of an Order made under this By-law.

On the 20th March 1914, the Medical Officer of Health wrote to the Town Clerk, pointing out that the work of the Health Department was seriously affected by the want of adequate By-laws, and asked that these By-laws should be allowed to go to the Committee. On the 2nd May 1914, a further reminder was sent, and the Draft By-laws were issued to the Health Committee on 11th May 1914. The Committee was, however, unable to consider these By-laws till the 9th July 1914.

In the meantime, the Town Clerk directed the Medical Officer of Health's attention to *Germiston Municipality vs. Angehrn & Piel* (South African Law Reports, Transvaal Provincial Division and Witwatersrand Local Division, January to March, 1913, p. 135). In this case, the Supreme Court held that Provincial Council's power to legislate generally with regard to Municipal institutions does not imply the power to legislate for extra jurisdiction for the courts for the purpose of giving effect to any Municipal legislation. In other words, the Provincial Council cannot impose upon Magistrates duties which are not specified by the Magistrate's Court Proclamation, No. 21 of 1902.

These By-laws were, therefore, redrafted by the Medical Officer of Health on 6th July 1914 on the lines of the English Housing and Town Planning Act 1909, Sections 17 and 18, as follows:—

21. (a) When on the representation of the Medical Officer of Health or other information given any building or part thereof appears to the Council to be unfit for human habitation, the Council may make an Order prohibiting the use of such building or part thereof for human habitation (in these By-laws referred to as a Closing Order) until in the judgment of the Council the building or part thereof is rendered fit for that purpose. Provided that any owner of the building or part thereof shall be entitled to be heard by the Public Health Committee when the question is taken into consideration by such Committee of the Council.

(b) Notice of a Closing Order shall be served forthwith on the owner of the building or part thereof in respect of which it is made.

(c) When such Closing Order has been made, the Council shall forthwith cause a copy of such Order to be affixed in a conspicuous position on the building or part thereof, and shall serve a copy of the same on each of the occupying tenants, if any.

(d) No person shall, after the date specified in such Closing Order and before such building or part thereof has been rendered fit for human habitation or occupation to the satisfaction of the Council, inhabit or occupy such building or part thereof or cause or suffer the same to be inhabited or occupied. Any person convicted of a breach of this By-law shall be liable to the penalty specified in By-law No. 11.

22. (a) Where a Closing Order under By-law No. 21 has remained operative for a period of three months and the building or part thereof has been allowed to fall into a dilapidated or ruinous condition, the Council shall take into consideration the question of the demolition of the building or part thereof, and shall give every owner of the building or part thereof notice of the time (being some time not less than one month after the service of the notice) and place at which the question will be considered, and any owner of the building or part thereof shall be entitled to be heard when the question is so taken into consideration.

(b) If upon such consideration the Council is of opinion that the building or part thereof is in a dilapidated or ruinous condition, it shall make an Order for the demolition of the building or part thereof.



(c) If any owner undertakes to execute forthwith the works necessary to render the building or part thereof fit for human habitation and the Council considers that it can be so rendered fit for human habitation, the Council may, if it think fit, postpone the operation of the Demolition Order for such time, not exceeding six months, as it thinks sufficient for the purpose of giving the owner an opportunity of executing the necessary works. M.O.H. 1913-14  
Slum  
Property.  
Housing  
of Natives.

(d) Notice of an Order for the demolition of a building or part thereof shall be forthwith served on the owner of the building or part thereof in respect of which it is made.

(e) The Council may recover from the owner of any building or part thereof the cost of demolishing such building or part thereof in pursuance of a Demolition Order made under this By-law.

The Housing and Town Planning Act, on which these Draft By-laws are based, provides for appeal to the Local Government Board. It will be observed, however, that in the Local Government Ordinance No. 9 of 1912, Section 88, Sub-section 23 (c), no power is given to provide means of appeal from the Council's decision as to any property; and, therefore, these Draft By-laws are defective in this very important respect. The Medical Officer of Health has suggested that there should be an appeal to the Department of the Interior or to His Honour the Administrator, but, to create an effective appeal of this kind, legislation is required.

These By-laws, as re-drafted, were approved by the Council on the 24th November, 1914, and forwarded to His Honour the Administrator on the 25th November, 1914.

Various questions have since arisen as to other sections of the Code of which the above-quoted By-laws form part, and consequently they have not yet been sanctioned.

From the foregoing, it is fairly clear that little, if anything, can be done till the Council is invested with adequate statutory powers. The Medical Officer of Health desires to place it on record that, so far as he is personally or officially aware, a recent irresponsible statement that the failure to deal with slum property is due to the strength of vested interest has no foundation in fact. Hitherto the difficulty has been the absence of legal powers.

#### HOUSING OF NATIVES IN TOWN.

This question is frequently discussed, and, in consequence of want of accurate information, much misunderstanding and misrepresentation exist in regard thereto.

The powers and position of the Public Health Committee (as understood by the Medical Officer of Health) are as follow:—

The Johannesburg Municipal Ordinance, No. 11 (Private) of 1906, Section 41, Sub-section (76), provides as follows:—

41. The Council may from time to time alter and revoke By-laws or Regulations for all or any of the following purposes:—

(76) For enabling the Council to control and supervise the housing of natives by employers and to prevent annoyance to persons in the neighbourhood arising therefrom to compel all natives not residing on the premises of their European employers or not holding letters of exemption whilst lawfully within the Municipality to reside at any location for natives which may have been established by the Council. . . . .

Pursuant hereto, the Native Location By-laws, Chapter I., Section 3, as amended by Administrator's Notice, No. 297 in the *Provincial Gazette*, 6th December, 1912, provide as follows:—

3. From and after a date to be hereafter fixed by resolution of the Council, every native dwelling or remaining within the limits of the Municipality, with the exception of such natives as may reside on the premises of their European employer and such natives as hold letters of exemption, shall be required to reside in a location, and after the said date every native hereby required to live in a location who shall at any time between the hours of 9 p.m. and 5 a.m. be within any part of the Municipality other than the location shall be guilty of a breach of these By-laws.

It will be observed that the prohibition in both the Statute and By-law refers only to natives who do not reside on the premises of their European employer. Consequently, it is open to any employer, so far as the Council



M.O.H. 1913-14

Housing  
of Natives.

is concerned, to hire rooms (which thus become his premises), and then to place natives employed by him in these rooms, without any reference to, or power of interference by, the Council, unless such rooms are insanitary.

In consequence of this unfortunate state of affairs, the Medical Officer of Health recommended, when the Draft Local Government Ordinance No. 9 of 1912 was under consideration, that the above-quoted Clause 41 (76) be amended by the substitution of the words "all natives, except those who are domestic or household servants, residing at the dwelling of their European employer" for the words "all natives not residing on the premises of their European employer."

The Medical Officer of Health understands, however, that the Provincial Council found itself legally unable to touch the question at all, and therefore, when passing the Local Government Ordinance 1912, specifically left unrepealed Section 41 (76) of the Johannesburg Municipal Ordinance, No. 11 (Private) of 1906.

The position, therefore, remains that any employer may hire quarters for his natives, and place these natives anywhere he likes in the town, so far as the Council's powers in the matter are concerned.

There are, however, two other By-laws affecting the residence of natives in town—namely, Chapter II., Articles 38 and 39.

Article 38 is as follows:—

Any person who, without permission in writing from the Council, establishes or maintains a compound or other place for the housing of natives or coloured persons not being domestic or household servants, shall be liable to penalty.

But in the case of *Moses vs. Municipality of Boksburg*, reported in the *Rand Daily Mail*, 3rd August, 1912, the Supreme Court held that this By-law was *ultra vires* as regards coloured persons. The case in question was an appeal against a conviction for contravening this By-law. The appellant was the holder of a stand in what is known as the "Old Asiatic Location," within the Municipal area, and it was alleged that he had let rooms to some Cape-coloured persons without the permission of the Council, and had thereby contravened the By-law in question. The appeal was on the ground that the By-law was *ultra vires*, inasmuch as it differentiated between coloured persons and other members of the community, which the Council had no power to do. It is, therefore, to be clearly understood that the Council has no more power to regulate the place of residence of Indians or Cape people or other coloured persons than it has to regulate the place of residence of white people.

In this connection, however, it may be mentioned that the Local Government Ordinance 1912, Section 72 (22), empowers the Council to make By-laws for prohibiting the use by white persons for dwelling purposes of premises or yards occupied by natives, Asiatics or coloured persons. It would almost seem, however, as if this clause came within the above-quoted judgment in *Moses vs. Boksburg Municipality*, in that, differentiating between white persons and coloured persons, it equally differentiates between coloured persons and white persons. In any case, this is a Police and not a Public Health matter.

The Public Health By-laws, Chapter II., Article 39, provides as follows:

39. The Council, if satisfied as to the position and suitability of any premises proposed to be used for the housing of any natives, not being domestic or household servants, and as to the efficiency of the control proposed to be exercised over such natives, may grant permission in writing, under the hand of a duly authorised official, for the establishment or maintenance of a compound or other place for the housing of such natives on such premises, and such permission shall remain in force for such time only, not being more than twelve months, as the Council may specify therein, and every such permission shall expire not later than the 31st day of December in the year for which it is granted.

The power taken by the Council in this By-law to grant a permit for the establishment or maintenance of a compound or other place for the housing of natives has never been exercised, because the Police pointed out that an open permit of this kind would enable the holder to harbour native undesirables without let or hindrance, and thus add very considerably to the difficulties of the Police in dealing with this class. Consequently this By-law has



not been re-enacted in the new Draft Code. On the other hand, when it was decided to create a location at Klipspruit in 1904, the Chamber of Commerce protested vigorously and naturally against the consignment to Klipspruit of natives who, in connection with certain trades and callings, are required before 7 a.m. and after 6 p.m., the time of arrival and departure respectively of the first train from, and the last train to, Klipspruit. A *modus vivendi* was therefore found in the issue of personal permits to individual natives of this class who could not be housed on their employer's premises, to live in approved dwellings in town, and this system continues. The issue of such personal permits to individual natives is conditioned as follows:—

- (1) His employer must certify that the hours of his work are such that he cannot live at Klipspruit.
- (2) That there is no Police objection to him.
- (3) That there is no well-founded objection by white residents in the vicinity of his proposed quarters.
- (4) That his proposed quarters comply with certain sanitary requirements.
- (5) In the case of a single native, that accommodation is not available for him at the Council's Jubilee and Salisbury Compound.

It will be clear from the foregoing that, for want of adequate legal powers on the part of the Council, the whole position is most unsatisfactory, and the Council is being constantly blamed for conditions which, in the absence of legislation by the Union Parliament, it has no power to prevent. From time to time information is received that natives without permits, who are not residing on their employer's premises, are being illegally housed by persons other than their employers. In such cases, the Police are communicated with, and a joint midnight raid by Sanitary Inspectors and Police (*vide* L.G.O., No. 9 of 1912, Section 68 (2)) is carried out, prosecution of both natives and harbourers following where circumstances justify. But, obviously, further powers are necessary if this problem is to be satisfactorily dealt with.

#### SCAVENGING.

This matter is fully dealt with in the Annual Report of the Manager of the Scavenging Branch (Mr. F. C. Gavin, M.R.C.V.S.), and the Medical Officer of Health has little to add to previous observations on this matter, except that he is strongly of opinion that services of this kind should, for general reasons of public health, be rendered with the highest degree of efficiency practicable, and at charges which, while fully covering outlay, do not become a source of considerable Municipal revenue.

#### STREET SWEEPING.

This is done in the night-time, except during the wet season, when it is postponed to the early morning, so as to get the mud off the streets just before the day's traffic commences. An average of 10,277 mule loads were removed by 101 Scotch carts each month. The expenditure under this head for 1913-14 was £22,252 6s. 4d., but, subject to financial considerations, this service might with great advantage be considerably increased.

#### HOUSE-REFUSE REMOVAL AND DISPOSAL.

House-refuse is removed in petrol-driven motor lorries and two-wheeled open tipping carts. At each of the upper corners of each cart is fixed a ring, and for each cart a waterproof tarpaulin is supplied, which is secured to the rings. The Medical Officer of Health has more than once suggested the provision of dust-carts with flap covers, to prevent the blowing about of rubbish, but the Manager of the Scavenging Department, after considering various types of covered dust-cart, prefers the tarpaulin arrangement, as it admits of the cart taking a larger load, and saves the considerable weight of a wooden cover.

An average of 729 Scotch cart-loads per day of house-refuse was collected; some of it was burnt at the destructors and some deposited at tips.

A large tip was opened at the south-west corner of Milner Park, Vrededorp, on the 25th May, 1911, and, although the process of tipping rubbish there has been attended with unavoidable unpleasantness, the inhabitants of Vrededorp agreed to submit to it in view of the fact that a number of unsightly hollows would thus be filled up, and converted eventually into a recreation ground.

M.O.H. 1913-14

Housing  
of Natives.  
Scavenging.  
Street  
Sweeping.  
Refuse  
Removal.

M.O.H. 1913-14

## CARCASE REMOVAL.

Carcase  
Removal.  
Destructors.  
Night Soil  
Removal.  
Locations.

268 horses, mules, donkeys and foals, 2,630 dogs and 143 cattle, 1 sheep, 32 springbok and 7 other carcasses were removed, and either buried at the depositing sites or burned at the destructor.

## DESTRUCTORS.

The destructors at Burghersdorp and Norwood are working satisfactorily.

## REMOVAL OF NIGHT SOIL AND DISINFECTION OF PAILS.

The average number of pails removed per night for the twelve months ending 30th June, 1914, has been 18,172. Every pail, before being sent out, is washed, tested for leakage, dipped in boiling creosote in steam-jacketed pans, and, after the surplus creosote has dripped off in such a way that it is collected and available for use again, is "nested" with other pails and placed in the carts for distribution.

The Medical Officer of Health has nothing to add to remarks made in previous reports with regard to this process, which is most effective and economical in its working.

The table inset herewith shows the cost of the various services during the years 1911-14:—

Year ended 30th June.	Service.	Cost.	Revenue.	Surplus.	Deficit.
1911	Night Soil Service ... ..	£ 54,759	£ 143,958	£ 13,400	—
	Refuse ... ..	31,876			
	Slop and Bathwater ... ..	43,923			
	TOTAL ... ..	130,558	143,958	13,400	—
1912	Night Soil Service ... ..	59,540	143,093	2,255	—
	Refuse ... ..	37,795			
	Slop and Bathwater ... ..	43,503			
	TOTAL ... ..	140,838	143,093	2,255	—
1913	Night Soil Service ... ..	61,351	142,057	—	18,537
	Refuse ... ..	52,790			
	Slop and Bathwater ... ..	46,453			
	TOTAL ... ..	160,594	142,057	—	18,537
1914	Night Soil Service ... ..	58,133	135,262	—	21,942
	Refuse and Carcasses ... ..	56,325			
	Slopwater ... ..	42,716			
	TOTAL ... ..	157,204	135,262	—	21,942

## LOCATIONS.

The Medical Officer of Health does not interfere in the work of the Locations, except where his advice is sought by the Superintendent. From time to time, however, the Medical Officer of Health is called on for reports on special matters. This subject was dealt with at some length in the Medical Officer of Health's Report, 1909-11, and the Medical Officer of Health has, at present, little to add to the remarks made therein.



## GOVERNMENT SCHOOLS.

M.O.H. 1913-14

The type of school now erected by the Education Department, and for which Mr. W. P. Eagle, Chief Architect, Public Works Department, is responsible, is one of which any community might be proud.

Government  
Schools.  
Licensed  
Places.

The Medical Officer of Health, in his capacity as Hon. Cons. Medical Officer to the Rand Central (*i.e.*, Johannesburg) School Board, has been from time to time consulted on structural and other questions of school hygiene.

## LICENSED PLACES.

From 1st July, 1913, to 30th June, 1914, 2,526 applications for licences of various kinds have been dealt with, the premises in question being in all cases carefully examined as to sanitary requirements.

	1913-14.		
	Granted.	Refused or not taken out.	Total.
1. Tea Shops, Eating Houses, Restaurants, etc. ...	712	23	735
2. Dairies and Milk Shops ... ..	360	44	404
3. Butchers' Shops ... ..	403	27	430
4. Bakers and Confectioners ... ..	86	4	90
5. Kaffir Eating Houses ... ..	146	10	156
6. Asiatic Eating Houses ... ..	2	—	2
7. Laundries ... ..	104	12	116
8. Ice Creameries ... ..	272	7	279
9. Noxious or Offensive Trades ... ..	91	12	103
10. Aerated Water and Ice Factories ... ..	22	1	23
11. Hairdressers and Barbers ... ..	185	3	188
	2,383	143	2,526

M.O.H. 1913-14

Prosecutions.

## PROSECUTIONS.

172 persons were prosecuted for various breaches of the Sanitary Regulations; 162 were convicted, and fines aggregating £280 10s. were imposed. Particulars are appended:—

BY-LAWS INFRINGED.	Race of Accused.			Totals.
	Whites.	S.A. Coloured.	Asiatics.	
Prevention of Nuisances ... ..	41	—	3	44
Infectious Disease ... ..	1	—	—	1
Sale of Food and Drugs ... ..	13	—	—	13
Dairies and Milk Shops ... ..	6	—	—	6
Bakehouses ... ..	—	—	—	—
Eating Houses ... ..	—	—	—	—
Butcher Shops and Inspection of Meat	2	—	—	2
Washing and Laundries ... ..	—	—	—	—
Kaffir Eating Houses ... ..	1	—	—	1
Aerated Water Factories ... ..	—	—	—	—
Asiatic Tea Rooms ... ..	—	—	—	—
Barbers' Shops ... ..	—	—	—	—
Native Location ... ..	—	100	—	100
Traffic By-laws ... ..	2	—	—	2
Skin Curing, L.G.O., Sect. 95 (1) ...	2	—	—	2
Unsound Foodstuffs, L.G.O., Sect. 191 (3)	1	—	—	1
<b>TOTALS</b> ... ..	<b>69</b>	<b>100</b>	<b>3</b>	<b>172</b>
<b>RESULTS—</b>				
Convicted and Fined ... ..	61	93	3	157
Convicted and Cautioned ... ..	3	2	—	5
Dismissed ... ..	5	4	—	9
Charge Withdrawn ... ..	—	1	—	1
<b>AMOUNT OF FINES</b> ... ..	<b>£211 0 0</b>	<b>£64 10 0</b>	<b>£5 0 0</b>	<b>£280 10 0</b>

This work was closely supervised by the Medical Officer of Health, under whose personal direction the proofs of evidence, summonses, subpoenas, indictments and charge sheets are prepared and handed to the Assistant Public Prosecutor in the Magistrate's Court.



## EXPENDITURE OF PUBLIC HEALTH DEPARTMENT.

M.O.H. 1913-14

(This does not include Scavenging Expenditure.)

Expenditure.  
Staff.

	1911-12	1912-13	1913-14
	£	£	£
Salaries ... ..	13,603	14,471	14,973
Native Wages, Food and Passes ...	165	172	169
Locomotion ... ..	804	990	1,064
Miscellaneous Expenses ... ..	3,057	2,964	2,936
Cartage ... ..	401	618	1,450
Isolation Hospital ... ..	1,898	2,826	2,819
Disinfecting Station ... ..	420	252	278
Rents, Rates and Insurance ... ..	186	181	525
Depreciation ... ..	42	33	—
Smallpox ... ..	1,056*	980	—
	£21,632	£23,487	£24,214

\* Including purchase of Motor Van.

## STAFF OF PUBLIC HEALTH DEPARTMENT.

A.—INSPECTORS.—The following statement shows the number of Sanitary Inspectors employed during the year under notice as compared with the number before the war:—

	Before War.	1906-9	1909-10	1910-11	1911-12	1912-13	1913-14
Chief Inspector ... ..	1	1	1	1	1	1	1
District Inspectors ... ..	16	14	15 (1 relief)	16 (1 relief)	16 (1 relief)	15	15
Native Constables with District Inspectors ... ..	16	2	3	2	2	2	2
White Constable ... ..	1	—	—	1	1	1	1
Mines Sanitation Inspector ...	—	2	2	2	2	3	4
Infectious Disease Inspector ...	—	2	2	2	2	2	2
Disinfecting Inspector ... ..	—	1	2	2	2	2	3
Licensing Inspector ... ..	1	—	—	—	—	—	—
Food Inspectors ... ..	2	1	1	1	2	1	1
Food Inspector at Kazerne ... ..	—	1	1	1	—	1	1
Ratcatchers ... ..	—	2	2	2	2	2	2
Slaughterhouse Inspector ... ..	1	1	1	—	—	—	—
Health Visitors ... ..	—	—	—	—	2	2	2

Of the 29 White Inspectors, 23 possess the certificate of the Royal Sanitary Institute.

It is, further, to be noted that since the British Occupation, 44,503 plans of new houses were approved to 30th June, 1914, and that the area of supervision during 1913-14 included Berea, Yeoville, Bellevue, Bellevue East, Lorentzville, Judith Paarl and Jeppestown Extension districts, besides the numerous townships and mines included within the Municipality as the result of the Extension Scheme sanctioned by Ordinance 13 of 1902, and 36 of 1903.

M.O.H. 1913-14

Sanitary  
Districts.

II.—NUMBER AND DISTRICTS OF DISTRICT SANITARY INSPECTORS.—There are fifteen District Sanitary Inspectors, whose districts were, during 1913-14, as follow:—

District.	Townships included in Districts.	No. of Houses in District.	No. of Licensed Places.
1	Fordsburg, Burghersdorp and Newtown ... ..	2,238	145
2	City and Suburban, Marshalls and Ferreiras, between Mine Fence and Main Street ... ..	1,280	124
3	City and Suburban, Marshalls and Ferreiras, between Main and President Streets ... ..	1,202	232
4	Johannesburg, between President Street and the Railway on south and north, and End Street and Kazerne on east and west ... ..	1,216	232
5	Braamfontein to Hospital Hill ... ..	2,548	126
6	Hillbrow, Berea, Yeoville, Parktown, Forest Town and part Houghton Estate ... ..	1,387	25
7	Old and New Doornfontein ... ..	1,651	113
8	Troyeville, Bertrams, Lorentzville, Judith Paarl and Highlands ... ..	1,889	25
9	Jeppes, Fairview and Wolhuter ... ..	2,530	143
10	Belgravia, Jeppes Extension, Malvern, Denver, Cleveland and New Heriot ... ..	1,461	92
11	Vrededorp, Mayfair, Paarlshoop and Langlaagte ... ..	2,148	76
12	Malay Location ... ..	1,251	18
		Native Constable provided in Malay Location.	
13	Kensington, Bezuidenhout Valley, Observatory, Bellevue and Bellevue East ... ..	2,275	37
14	"Northern Suburbs"—from New Clare on west, through Auckland Park and Parktown North and Rosebank to Riviera, Houghton, Oaklands, Melrose, Orchards, etc.	1,513	76
15	"Southern Suburbs"—all Townships south of Mines ... ..	2,286	219

A.—INSPECTORIAL STAFF.—The Medical Officer of Health has again to thank Mr. Thomas Manion (Chief Inspector) and the District Inspectors for continued efficient work.

During the official year, 4,711 written notices were served by the inspectors in the course of their work.

The work of the HEALTH VISITORS is referred to at p. 13.

B.—CLERICAL STAFF.—This consists of a chief clerk (Mr. F. Thompson), a typist-correspondent, a licensing clerk and two office boys. Apart from the usual statistical records of such an office (which in Johannesburg are laboriously increased by the necessity of differentiating between Whites, Natives, Eurafrians, and Asiatics), and attending to the complaints of a very sensitive public, no less than 7,979 letters—not including circulars and formal acknowledgments—were written during 1913-14. In addition, the whole of the clerical work required in connection with the issue of 689 permits for natives to live in town, with 2,526 applications for trading licences, and with 172 prosecutions undertaken by the Department, has been dealt with. The Office Staff has worked thoroughly well, and again the Medical Officer of Health wishes to record his indebtedness to their willing and effective assistance.



## IMPORTANT MATTERS REQUIRING SPECIAL ATTENTION.

M.O.H. 1915-14

In concluding this Report, the Medical Officer of Health begs to direct the Council's attention to the following important matters, which should be dealt with as promptly as possible:—

Matters  
requiring  
Council's  
attention.

1. The closing and demolition of Slum Property;
2. The satisfactory Housing of Natives;
3. The better Control of the Milk Supply;
4. The continued extension of the water-carriage system of Sewage Disposal.

CHARLES PORTER, M.D., M.R.C.S., D.P.H.,

*Barrister-at-Law,*

Medical Officer of Health.

24th February, 1915.

**Report on the Health of Natives Employed by the Council for  
the period 1st July, 1913, to 30th June, 1914.**

The average number of natives employed by the Council, as computed from the returns received from the various Departments, is set forth in the subjoined table:—

Department.	No. of Natives.
Sanitary ... ..	1,812
Town Engineer ... ..	910
Light and Power ... ..	633
Tramways ... ..	348
Water ... ..	153
Other Departments ... ..	73
TOTAL ... ..	3,929

The total number of admissions to hospital was 324, and the total deaths 12. The admissions represent an annual ratio of 82·4 per 1,000 on the average number employed.

The uncorrected annual death-rate per 1,000, calculated on the average number employed, was 3·05.

The admission and mortality-rates since records were first kept in 1904 are shown below:—

ADMISSION AND MORTALITY-RATES.

Year.	Admissions.		Mortality.	
	Total.	Ratio per 1,000.	Deaths.	Rate per 1,000. All Causes.
1904-5	430	86·8	48	9·6
1905-6	511	112·6	41	9·0
1906-7	555	117·2	66	11·8
1907-8	572	163·6	44	12·8
1908-9	376	118·6	19	5·9
1909-10	294	90·7	18	5·5
1910-11	458	122·6	30	8·03
1911-12	506	131·7	23	5·9
1912-13	385	94·9	24	5·9
1913-14	324	82·4	12	3·05

It is satisfactory to note that the death-rate is one of the most favourable yet recorded.



Summary of Cases admitted into the Native Hospital, 1st July, 1913, to 30th June, 1914.

No. in International Classification.	DISEASE.	Total.	COMPOUNDS FROM WHICH ADMITTED.											RESULT.				TOTALS.	
			Main Com- pound.	Van Beek St.	Norwood.	Bezuidenhout Valley.	Smit Street.		Burgbersdorp Destructor.	Natal Spruit Destructor.	Water Depl.	Tramways.	Light and Power.	Volunteer.	Springfield.	Cured or Relieved.	Transferred to other Hospitals.		Discharged Unfit or to Convalesce at Home.
1	Enteric Fever	33	4	2	..	2	5	1	1	1	10	1	1	3	52	1	..	1	32
4	Malaria	1	..	..	..	..	..	..	..	..	..	..	..	..	1	..	..	..	1
6	Measles	3	1	..	..	..	1	1	1	..	..	..	..	..	..	..	..	..	3
7	Scarlet Fever	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
10	Influenza	48	5	4	..	1	11	1	6	4	4	1	8	46	..	..	..	..	48
14	Dysentery	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
18	Erysipelas	1	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	1
19a	Mumps	1	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	1
19b	Chickenpox	1	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	1
28	Tuberculosis of Lung	2	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	2
34	Other Tubercular Diseases	2	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	2
37	Syphilis	3	1	..	..	..	1	1	1	1	1	1	1	2	3	3	..	..	3
38	Gonorrhoea	13	5	..	..	..	1	1	1	1	1	1	2	17	13	13	..	..	13
47-48	Rheumatism	27	5	1	..	1	5	5	..	..	..	..	3	17	..	..	..	..	27
49	Scarvy	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
61	C. S. Meningitis	1	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	1
73-74	Diseases of Nervous System	3	2	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	3
75	Diseases of Eye	2	1	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	2
89	Bronchitis	7	1	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	7
92	Pneumonia	59	12	15	..	2	8	2	2	6	1	..	8	46	..	..	..	..	59
93	Pleurisy	3	1	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	3
99a	Gingivitis	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
100	Tonsillitis	11	1	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	11
103	Gastritis and Other Disorders of Digestion	4	1	..	..	..	2	..	..	..	..	..	..	..	..	..	..	..	4
105	Diarrhoea	2	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	2
110	Diseases of Intestines	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
119	Nephritis	1	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	1
144	Inflammation of Connective Tissues	2	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	2
144	Abscesses	6	1	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	6
145	Diseases of Skin	2	1	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	2
166-186	Injuries and Burns	46	10	3	..	1	9	9	9	2	2	2	..	42	3	1	1	..	46
189	Ill-defined and Minor Ailments	10	2	3	..	..	..	..	..	..	..	..	..	5	1	4	..	..	10
189a	Debility	3	1	..	..	..	1	..	..	..	..	..	..	3	3	..	..	..	3
..	All other causes	26	8	2	..	..	1	1	4	2	2	2	4	17	3	5	..	..	26
..	Totals	324	63	35	..	8	55	36	2	22	10	28	28	93	235	36	41	12	324

## CHIEF CAUSES OF DEATH.

The chief causes of death are set out in the following table:—

Disease.	1904-5	1905-6	1906-7	1907-8	1908-9	1909-10	1910-11	1911-12	1912-13	1913-14
Pneumonia ...	12	20	22	8	5	5	15	11	10	9
Enteric Fever ...	21	6	29	12	3	3	5	6	3	1
Injuries ...	—	4	1	9	4	2	1	1	—	—
Cerebro Spinal Meningitis ...	—	—	—	—	—	—	—	—	—	1
Tubercle of Lung and other parts	4	2	—	6	5	2	1	1	5	—
Dysentery ...	—	3	5	5	—	2	—	—	1	—
All other causes	6	6	9	4	2	4	8	4	5	1
TOTALS ...	43	41	66	44	19	18	30	23	24	12

Pneumonia, influenza, enteric fever and rheumatism have been responsible for the greatest number of admissions, and pneumonia for the largest number of deaths. Minor ailments and injuries have, as in former years, been treated at the Dispensary, the more serious cases being admitted into the Compound Hospital. The reason for their admission and their disposal are shown in the table inset opposite this page.

## I. GENERAL DISEASES.

Enteric Fever.

Subjoined are the statistical particulars of this disease:—

Year.	Admissions.	Deaths.	Case-Mortality per cent.	Mortality per 1,000.
1906-7	82	29	35.4	6.1
1907-8	50	12	24	3.4
1908-9	24	3	12.5	.9
1909-10	17	3	17.6	.9
1910-11	24	5	20.8	1.3
1911-12	77	6	7.7	1.5
1912-13	25	3	12	.7
1913-14	33	1	3.3	0.25

Tubercular Disease.

Four admissions and no deaths occurred during the period under review. Of these, 2 were due to tubercle of the lungs, the remainder to tubercle of other parts of the body.

## II LOCAL DISEASES.

Diseases of the Respiratory System.

There were 69 admissions and 9 deaths. The admissions include—Bronchitis, 7; pneumonia, 59; and pleurisy, 3. The deaths were all caused by pneumonia.

Pneumonia.

Pneumonia accounts for 75 per cent. of the total number of deaths.



In the subjoined table are set forth the admissions and deaths per thousand during the past nine years :—

Year.	Admissions per 1,000.	Mortality per 1,000.		Percentage of Total Mortality.
		Amongst Municipal Natives.	Amongst Natives in Town as a whole.	
1904-5	10.5	3.4	7.5	35.4
1905-6	14.1	4.4	8.8	48.8
1906-7	10.9	4.6	6.6	39
1907-8	14.9	2.2	9.3	17.1
1908-9	8.2	1.5	9.6	25.4
1909-10	12.3	1.5	6.8	27.2
1910-11	21.4	4.0	11.0	49.8
1911-12	19.5	2.8	18.6	47.8
1912-13	18.7	2.4	11.36	40
1913-14	15.01	2.2	3.09	75

### III. MINOR AILMENTS.

There were the usual number of minor cases treated at the Dispensary, none of which call for special remark.

Faint, illegible text at the top of the page, possibly a title or header.

Faint, illegible text in the middle section, possibly a list or table of contents.





