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

Municipal Council of Johannesburg

REPORT of the MEDICAL OFFICER OF HEALTH on the PUBLIC HEALTH and SANITARY CIRCUMSTANCES of JOHANNESBURG during the Year, 1st JULY, 1911—30th JUNE, 1912.

TO WHICH IS APPENDED

A REPORT by the MEDICAL ATTENDANT (P. G. STOCK, M.B., D.P.H.), on the HEALTH of the NATIVES EMPLOYED BY THE COUNCIL.

CHARLES PORTER, M.D., D.P.H., *Barrister-at-Law,*
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JOHANNESBURG,
NOVEMBER, 1912.

Adlington & Co., Printers.

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INDEX—(*Continued*).

SUMMARY OF STATISTICS

FOR THE

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 1911-12, £29,266,771.

The Town Council can impose a rate not exceeding 3d. in the £. The rate for 1911-12 was 2½d. in the £.

YEAR 1911-12.

YEAR.	Whites.	Natives.	Eurafricans.	Asiatics.	Total Persons.
1911-12 Government Census (May 7th, 1911)	129,601	104,974	14,300		248,875

	1909-10.	1910-11.	1911-12
MARRIAGES	1,364	1,634	1,632
PERSONS MARRIED	2,728	3,268	3,264
MARRIAGE RATE per 1,000 population (white) ...	24·38	29·21	25·1
BIRTHS (white)	3,789	3,996	4,361
BIRTH RATE per 1,000 population (white)... ...	33·8	35·7	33·6

DEATH-RATES.	Whites.		Natives.	Eurafricans.	Asiatics.	All Persons.
	Crude.	*Corrected for Age and Sex distrib.				
1903-4	17·2	—	32·4		19·5	23·9
1904-5	16·1	21·12	29·3		7·3	20·8
1905-6	18·4	24·3	32·4		11·3	22·9
1906-7	14·0	—	28·6		24·4	20·8
1907-8	13·8	—	29·3		24·1	21·0
1908-9	15·1	—	31·3		14·7	22·1
1909-10... ...	12·5	12·9972	24·5	25·2	18·5	18·3
1910-11... ...	14·4	15·2976	33·6	31·1	19·7	23·4
1911-12... ...	12·5	13·3423	25·5	24·4		18·2

*Factor for correction 1·1502.

To HIS WORSHIP THE MAYOR OF JOHANNESBURG
(W. R. BOUSTRED, Esq.).

Mr. Mayor,—I have the honour to submit my REPORT FOR THE OFFICIAL YEAR 1911-12. Its GENERAL ARRANGEMENT follows that adopted on previous occasions.

At pp. 8 and 9 the CHIEF FACTORS OF THE YEAR'S MORTALITY are indicated and compared with those of 1910-11.

At pp. 18-22 are recorded the circumstances of the somewhat serious outbreak of SMALLPOX IN THE INDIAN LOCATION in January and February, during which the policy of concealment adopted by the Asiatics occasioned considerable anxiety and expense.

A rather widespread PREVALENCE OF DIPHTHERIA in a mild form is discussed at p. 24.

The PRELIMINARY PLAGUE-PREVENTION MEASURES adopted locally in view of the outbreak of Plague in Durban in January last are detailed at pp. 25-29.

At pp. 32-35 certain very instructive results of the second year's WORKING OF YOUR FINE PUBLIC ABATTOIRS are excerpted from the Report of the Director (Mr. J. Irvine Smith, M.R.C.V.S.).

At p. 37 are particulars of a PROSECUTION IN RESPECT OF WEEVIL-INFECTED RICE. There is no similar report on accessible record.

At p. 43 is reproduced an interesting correspondence in regard to the ALLEGED UNHEALTHINESS OF PLANE TREES in public places.

The pressing problems of "SLUM PROPERTY" and the "HOUSING OF NATIVES" are again commended to consideration at pp. 41-2.

Certain interesting points in connection with the DIFFICULTIES OF DESTRUCTOR PRACTICE are summarised at p. 45.

At p. 50 is printed a memorandum (with sketches) of various METHODS OF AMENDMENT OF BACK-TO-BACK, ETC., DWELLINGS.

Acknowledgments.—I wish to place very fully on record my great indebtedness during the past year to the Government Analyst (Dr. John McCrae, Ph.D.) and the Government Bacteriologist (Dr. W. Watkins-Pitchford, M.D.Lond., F.R.C.S.Eng.). The highly-skilled advice and willing support of these gentlemen have repeatedly been of invaluable assistance to my Department, and I am most grateful to them.

I am also much indebted to the Assistant Medical Officer of Health (Dr. P. G. Stock) and the members of my Staff for their excellent and willing co-operation at all times, and especially during the Smallpox outbreak in the Malay Location.

Once again I beg to record my warm appreciation of the unfailing and kindly co-operation of my colleagues the Heads and Sub-Heads of Departments.

I have also to thank you, Sir, and the Council for continued support.

I have the honour to be, Mr. Mayor,

Your obedient servant,

CHARLES PORTER,
Medical Officer of Health.

4th November, 1912.

REPORT

OF

MEDICAL OFFICER OF HEALTH

For Period from 1st July, 1911, to 30th June, 1912.

DENSITY OF POPULATION.

At the Census in 1904 there were about 21 persons per acre within the area actually used for building purposes, as against 60 in London and 12 in Capetown. It varied from 0·76 in Observatory to 89 and 148 in parts of Marshalls and Ferreiras respectively (v. Census p. lxxvi.). Similar figures are not available in 1911 Census.

MARRIAGES.

From 1st July, 1911, to 30th June, 1912, the number of white marriages registered was 1,632, equal to a marriage rate of 25·1 per 1,000. The rate per 1,000 in "London" was 17·8 in 1911, and 16·0 in 1910.*

During the same period 129 coloured marriages were registered.

BIRTHS.

From 1st July, 1911, to 30th June, 1912, the number of white births registered was 4,361.

The white birth-rate was high, being equal to 33·6 per 1,000 for 1911-12. For "The 77 Great Towns" of England and Wales, in 1911 the birth-rate was 25·5.

During the same period 962 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 135 for the year 1911-12, and during this period constituted 3·09 per cent. of all births, as against 4·08 in England and Wales, in 1910, and 3·8 in London, in 1911.

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 1911.

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.
1911 to 1912:					
Whites	1,505	123	12·5	11·6	13·3423
Natives	2,683	66	26·2	25·5	
Eurafricans ...	270	10	25·3	24·4	
Asiatics... ...	80	3			
All Persons ...	4,538	202	19·0	18·2	

In order to neutralize 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:—

In 1909-10: For Whites, 117; for Natives and Eurafricans, 369; for Asiatics, 252.

In 1910-11: For Whites, 110; for Natives and Eurafricans, 326; for Asiatics, 295.

In 1911-12: For Whites, 114; for Natives and Eurafricans, 361, for Asiatics, 194.

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:—

	1911.		1911.
Greater London (i.e., Metropolitan and City Police Districts) ...	15·0	Rome	16·2
"77 Great Towns" of England and Wales	15·5	St. Petersburg	20·8
Edinburgh	16·0	Moscow	27·2
Glasgow	17·7	Cairo	43·2
Dublin	21·5	Alexandria	35·5
Calcutta (including plague deaths)	27·2	Durban	9·9 (1911-12)
Bombay (including plague deaths)	35·7	Capetown	11·4 (,,)
Madras	41·7	New York	15·1
Sydney	10·9	New Orleans	18·9
Brisbane	12·2	Buenos Ayres	16·8
Paris	17·2	JOHANNESBURG—	
Berlin	15·6	Whites	**11·6** (1911-12)
Trieste	24·0	Natives	**25·5** (,,)
Vienna	16·4	Coloured and Asiatics ...	**24·4** (,,)
		Persons	**18·2** (,,)

Except in regard to Durban and Capetown, these figures are taken from the Annual Summary of the Registrar-General for England and Wales, 1911.

CAUSES OF DEATH.

The causes of, and ages at death, and the local distribution appear separately for 1911-12 in the inset Tables A to D for "Whites," "Natives," "Eurafricans" and "Asiatics" respectively.

TABLE A.

Return of Deaths among the White Population for the 12 Months ending 30th June, 1912.

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	Smallpox	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
2	Measles	27	4	22	1	...	...	...	...	...	2	1	1	5	6	3	...	...	6	...	...	...	...	...	3	...	27
3	Scarlet Fever	15	1	9	5	...	...	...	...	...	...	...	...	2	1	5	3	...	1	2	...	...	1	...	...	...	15
4	Epidemic Influenza	3	1	...	...	...	...	...	1	1	...	...	...	...	...	...	...	...	...	...	1	...	2	...	...	...	3
5	Whooping Cough	21	9	9	2	...	...	1	...	...	1	...	3	2	...	4	1	1	4	...	...	...	4	...	1	...	21
6	Diphtheria	16	2	8	5	1	...	...	...	...	...	1	...	2	2	2	6	...	1	...	...	...	...	...	2	...	16
7	Membranous Croup	6	1	4	1	...	...	...	...	...	1	...	...	...	...	1	...	...	...	1	...	1	2	...	...	...	6
8	Enteric Fever	39	...	2	4	10	12	7	4	...	7	...	3	4	5	3	3	2	1	4	1	2	1	...	4	...	39
9	Cholera	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
10	Plague	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
11	Diarrhœa and Dysentery	215	166	35	...	...	2	8	3	1	14	18	13	22	28	26	9	7	24	5	3	2	38	...	6	...	215
12	Epidemic Zymotic Enteritis	1	...	1	...	...	...	...	...	...	...	...	...	...	1	...	...	...	...	...	...	...	...	...	...	...	1
13	Enteritis	17	15	...	...	...	...	1	...	1	1	1	1	1	2	3	1	2	2	...	1	1	...	...	1	...	17
14	Other continued Fevers	1	...	...	...	...	...	...	1	...	...	...	...	...	1	...	...	...	...	...	...	...	...	...	...	...	1
15	Erysipelas	5	1	...	...	...	1	2	1	...	...	...	1	...	...	1	1	...	...	1	...	...	1	...	...	...	5
16	Puerperal Fever	9	...	...	...	6	2	1	...	...	3	...	1	1	1	...	2	...	...	...	...	...	...	...	1	...	9
17	Other Septic Diseases	3	1	...	1	...	1	...	...	...	...	...	2	...	...	...	1	...	...	...	...	...	...	...	...	...	3
18	Acute Rheumatism or Fever	14	1	1	1	2	2	3	3	1	3	1	...	...	2	2	2	...	1	...	...	...	2	...	1	...	14
19	Intermittent Fever	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
20	Malarial Cachexia	9	...	...	...	1	4	...	3	1	...	2	...	...	1	3	1	1	...	...	...	...	...	...	1	...	9
21	Tuberculosis of Meninges	4	1	3	...	...	...	...	...	...	...	1	...	...	...	...	...	...	...	1	...	1	...	...	1	...	4
22	Tuberculosis of Lungs	65	1	1	1	5	21	17	18	1	8	4	6	5	2	8	9	2	2	3	3	1	5	...	7	...	65
23	Other forms of Tuberculosis	9	1	1	...	2	2	...	3	...	...	2	1	1	...	1	...	...	...	1	...	...	...	...	3	...	9
24	Alcoholism	9	...	...	...	...	3	3	3	...	1	1	...	1	...	2	1	...	...	1	1	1	...	...	...	...	9
25	Cancer	67	...	...	...	...	1	13	41	12	2	2	6	6	1	10	9	3	4	1	1	3	5	...	14	...	67
26	Premature Birth	79	79	...	...	...	...	...	...	...	7	7	2	12	6	10	15	4	8	2	...	2	3	...	1	...	79
27	Developmental Diseases	125	108	17	...	...	...	...	...	...	9	12	7	12	19	14	12	6	7	4	1	4	12	...	6	...	125
28	Old Age	26	...	...	...	...	...	...	...	26	3	1	1	7	1	3	...	...	4	...	1	...	5	...	...	...	26
29	Meningitis	34	7	14	1	4	1	5	2	...	3	4	1	4	2	4	2	1	1	4	...	1	5	...	2	...	34
30	Other Diseases of Nervous System	33	2	1	...	2	2	5	15	6	4	3	4	3	...	5	...	3	2	2	2	...	4	...	1	...	33
31	Organic Diseases of Heart	157	12	1	7	16	16	37	51	17	18	16	9	12	9	11	21	10	9	3	4	5	14	...	16	...	157
32	Acute Bronchitis	35	23	9	...	...	1	...	1	1	2	...	3	6	5	4	2	...	8	1	...	1	3	...	...	...	35
33	Chronic Bronchitis	18	...	...	...	2	...	...	7	9	3	...	4	2	...	1	1	...	2	1	...	1	2	...	1	...	18
34	Pneumonia, Lobar or Croupous	117	17	16	3	2	14	33	30	2	14	7	10	18	10	12	9	5	7	6	2	3	4	...	10	...	117
35	Pneumonia, Broncho or Catarrhal	56	30	18	3	1	3	2	...	...	2	1	2	10	17	6	1	1	6	2	...	1	6	...	1	...	56
36	Rockdrill ditto, or Miners' Phthisis	73	...	...	...	...	16	36	20	1	7	2	6	11	2	11	1	...	1	10	9	5	6	...	2	...	73
37	Diseases of Stomach	20	6	...	...	3	4	1	5	1	5	1	3	2	...	...	2	1	2	2	...	...	1	...	1	...	20
38	Obstruction of Intestines	14	3	...	...	1	4	3	2	1	2	...	3	1	1	4	...	...	...	...	...	1	...	...	2	...	14
39	Cirrhosis of Liver	18	...	...	...	...	1	10	6	1	4	4	2	...	...	2	1	...	2	1	...	...	1	...	1	...	18
40	Nephritis or Bright's Disease	41	1	1	3	1	4	10	12	9	4	2	2	4	2	3	5	3	5	3	3	...	...	...	5	...	41
41	Scurvy	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
42	Syphilis	2	2	...	...	...	...	...	...	...	1	...	...	...	...	...	...	...	...	...	...	...	1	...	...	...	2
43	Tumours, etc., Affections of Female Genital Organs	13	...	...	...	...	5	4	4	...	1	...	1	...	1	3	2	2	...	...	...	...	...	...	3	...	13
44	Diseases of Parturition	16	...	...	...	4	11	1	...	...	...	2	...	1	1	3	3	2	1	1	...	...	1	...	1	...	16
45	Accident or Negligence	76	2	6	10	9	19	18	12	...	6	1	1	6	3	5	6	3	3	9	4	5	12	...	12	...	76
46	Suicide or Murder	37	...	...	1	4	9	14	9	...	3	4	8	3	1	1	6	4	2	...	...	...	4	...	1	...	37
47	All other causes	83	2	4	5	11	19	13	26	3	10	6	7	5	5	10	9	4	5	1	3	1	5	...	12	...	83
	TOTALS	1,628	499	183	54	87	179	248	283	95	151	107	113	171	138	186	147	67	121	72	40	42	156	...	123	...	1,628

District No. 1 includes that portion of Johannesburg (farm Randjeslaagte) south of the Railway and north of Commissioner Street.
District No. 2 includes Braamfontein, Hospital Hill and Hillbrow.
District No. 3 includes Marshalls Town and City and Suburban.
District No. 4 includes Ferreiras, Fordsburg and Mayfair.
District No. 5 includes Newtown, Vrededorp, the Cemetery and the Locations.
District No. 6 includes Jeppes, Jeppes Extension, Belgravia, etc.
District No. 7 includes Doornfontein, New Doornfontein, Bertrams, Lorentzville, Judith Paarl, Troyeville, Kensington Estate, Bezuidenhout Valley Township and Fairview.
District No. 8 includes Beres, Yeoville, Bellevue East, and North-Eastern suburban portion.
District No. 9 includes Auckland Park, Richmond, Melville, Newlands, New Clare, and North-Western suburban portion.
District No. 10 includes Paarls Hoop and Mines from Robinson westwards to boundary.
District No. 11 includes Central Mines (from Ferreira to City and Suburban).
District No. 12 includes Prospect Town, Denver and the Mines from Meyer and Charlton to Eastern boundary.
District No. 13 includes Ophirton, Booysens, Turffontein, Rosettenville, etc. (Southern suburban portion).

TABLE B.

Return of Deaths among the Native Population for the 12 Months ending 30th June, 1912.

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. I.	II.	III.	IV.	V.	VI.	VII.	VIII.	IX.	X.	XI.	XII.	XIII.	Hospital.	Non-Resident.	Unknown	Total.
1	Smallpox	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
2	Measles	31	...	2	...	10	18	1	...	...	...	...	...	...	1	...	...	...	...	5	...	2	23	...	...	...	31
3	Scarlet Fever	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
4	Epidemic Influenza	1	...	...	...	...	1	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	1	...	1
5	Whooping Cough	5	4	1	...	...	...	...	...	...	1	...	1	...	...	...	...	...	...	...	...	...	3	...	...	...	5
6	Diphtheria	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
7	Membranous Croup	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
8	Enteric Fever	104	...	1	1	48	44	10	...	...	2	2	...	6	6	...	2	...	1	53	18	3	10	...	1	...	104
9	Cholera	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
10	Plague	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
11	Diarrhœa and Dysentery	177	39	28	1	36	41	28	4	...	1	4	4	2	9	1	4	2	3	22	20	14	88	...	3	...	177
12	Epidemic Zymotic Enteritis	1	1	...	...	...	...	...	...	...	...	1	...	...	...	...	...	...	...	...	...	...	...	...	...	...	1
13	Enteritis	26	8	2	1	2	9	4	...	...	1	...	1	...	...	1	1	...	1	7	2	4	7	...	1	...	26
14	Other continued Fevers	1	...	...	...	...	1	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	1	...	...	...	1
15	Erysipelas	7	1	...	..	2	3	1	...	...	...	...	...	1	...	...	...	...	...	3	...	...	3	...	...	...	7
16	Puerperal Fever	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
17	Other Septic Diseases	2	...	...	...	1	1	...	...	...	...	...	...	...	...	...	...	...	...	...	1	...	1	...	...	...	2
18	Acute Rheumatism or Fever	8	...	1	1	1	2	1	2	...	...	2	...	...	...	...	...	...	...	1	2	...	3	...	...	...	8
19	Intermittent Fever	1	...	...	...	...	1	...	...	...	...	...	...	...	...	...	...	...	...	1	...	...	...	...	...	...	1
20	Malarial Cachexia	8	...	...	...	2	4	2	...	...	...	...	...	...	...	...	...	...	...	1	2	3	2	...	...	...	8
21	Tuberculosis of Meninges	5	1	...	...	1	2	1	...	...	...	...	...	1	...	2	...	...	...	...	1	...	1	...	...	...	5
22	Tuberculosis of Lungs	408	1	4	1	92	170	110	30	...	5	5	4	10	6	2	3	1	2	158	75	78	45	...	13	1	408
23	Other forms of Tuberculosis	68	2	...	1	24	20	17	4	...	...	...	...	2	...	...	...	...	...	28	10	5	21	...	1	...	68
24	Alcoholism	2	...	...	...	...	1	...	1	...	1	...	...	...	...	...	...	...	...	...	1	...	...	...	...	...	2
25	Cancer	13	...	...	...	1	5	3	4	...	1	...	...	1	...	...	...	...	...	3	...	4	4	...	...	...	13
26	Premature Birth	21	21	...	...	...	...	...	...	...	1	2	1	1	4	...	3	...	1	1	...	2	5	...	...	...	21
27	Developmental Diseases	29	27	2	...	...	...	...	...	...	1	2	4	1	3	2	2	...	...	1	1	2	8	...	2	...	29
28	Old Age	3	...	...	...	...	...	...	1	2	...	...	...	...	...	...	...	...	2	...	...	...	1	...	...	...	3
29	Meningitis	193	9	2	2	72	91	14	3	...	1	2	5	...	2	...	2	1	...	31	26	28	95	...	...	...	193
30	Other Diseases of Nervous System	11	...	1	...	...	6	2	1	1	...	...	...	...	...	...	...	...	...	2	2	3	2	...	2	...	11
31	Organic Diseases of Heart	80	2	1	2	10	39	20	5	1	1	2	4	6	1	...	1	...	...	21	19	5	16	...	4	...	80
32	Acute Bronchitis	29	15	11	...	...	2	1	...	...	1	3	4	...	5	1	...	...	2	3	...	1	8	...	1	...	28
33	Chronic Bronchitis	5	...	...	...	...	3	...	1	1	...	...	...	...	...	...	1	...	...	3	...	...	...	...	1	...	5
34	Pneumonia, Lobar or Croupous	901	22	11	7	265	397	163	35	1	7	10	6	16	12	2	2	7	3	159	214	185	257	...	20	1	901
35	Pneumonia, Broncho or Catarrhal	24	12	3	...	3	4	2	...	...	2	1	4	...	1	...	...	...	...	2	3	4	6	...	1	...	24
36	Rockdrill ditto, or Miners' Phthisis	47	...	...	...	4	23	17	3	...	...	3	...	2	2	...	...	...	...	7	4	12	17	...	...	...	47
37	Diseases of Stomach	5	2	...	...	...	2	1	...	...	...	...	1	...	...	...	...	...	...	1	...	...	3	...	...	...	5
38	Obstruction of Intestines	6	...	1	...	1	3	1	...	...	...	...	1	...	...	...	...	...	...	4	1	...	...	...	...	...	6
39	Cirrhosis of Liver	26	...	...	...	7	10	7	2	...	...	...	...	1	1	...	...	...	...	8	1	3	11	...	1	...	26
40	Nephritis or Bright's Disease	32	1	...	1	12	12	5	1	...	2	1	1	1	...	1	...	...	...	6	...	7	12	...	1	...	32
41	Scurvy	19	...	...	...	3	7	8	1	...	1	...	...	...	...	...	...	...	...	12	1	2	3	...	...	...	19
42	Syphilis	2	2	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	1	1	...	...	...	2
43	Tumours, etc., Affections of Female Genital Organs	1	...	...	...	...	...	1	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	1	...	...	1
44	Diseases of Parturition	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
45	Accident or Negligence	307	2	5	2	70	169	55	4	...	2	2	4	4	3	2	3	3	2	112	76	73	14	1	6	...	307
46	Suicide or Murder	24	...	...	...	5	13	5	1	...	...	...	...	...	1	...	1	...	...	5	8	5	3	...	1	...	24
47	All other causes	116	3	1	1	36	49	21	5	...	2	2	1	1	2	1	4	...	2	16	20	14	36	5	6	4	116
	Totals	2,749	175	77	21	708	1,153	501	108	6	33	44	47	56	59	15	29	14	19	676	508	460	710	7	66	6	2,749

District No. 1 includes that portion of Johannesburg (farm Randjeslaagte) south of the Railway and north of Commissioner Street.
District No. 2 includes Braamfontein, Hospital Hill and Hillbrow.
District No. 3 includes Marshalls Town and City and Suburban.
District No. 4 includes Ferreiras, Fordsburg and Mayfair.
District No. 5 includes Newtown, Vrededorp, the Cemetery and the Locations.
District No. 6 includes Jeppes, Jeppes Extension, Belgravia, etc.
District No. 7 includes Doornfontein, New Doornfontein, Bertrams, Lorentzville, Judith Paarl, Troyeville, Kensington Estate, Bezuidenhout Valley Township and Fairview.
District No. 8 includes Berea, Yeoville, Bellevue, Bellevue East, and North-Eastern suburban portion.
District No. 9 includes Auckland Park, Richmond, Melville, Newlands, New Clare, and North-Western suburban portion.
District No. 10 includes Paarls Hoop and Mines from Robinson westwards to boundary.
District No. 11 includes Central Mines (from Ferreira to City and Suburban).
District No. 12 includes Prospect Town, Denver and the Mines from Meyer and Charlton to Eastern boundary.
District No. 13 includes Ophirton, Booysens, Turffontein, Rosettenville, etc. (Southern suburban portion).

TABLE C.

Return of Deaths among the Eurafrican Population for the 12 Months ending 30th June, 1912.

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. I.	II.	III.	IV.	V.	VI.	VII.	VIII.	IX.	X.	XI.	XII.	XIII.	Hospital.	Non-Resident.	Unknown	Total.
1	Smallpox	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
2	Measles	4	...	4	...	...	...	...	...	...	...	...	...	1	2	...	1	...	...	...	...	...	...	...	...	...	4
3	Scarlet Fever	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
4	Epidemic Influenza	2	2	..	...	...	...	...	...	...	1	...	...	...	...	...	1	...	...	...	...	...	...	...	...	...	2
5	Whooping Cough	1	...	1	...	...	...	...	...	...	...	...	1	...	...	...	...	...	...	...	...	...	...	...	...	...	1
6	Diphtheria	1	1	...	...	...	...	...	...	...	1	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	1
7	Membranous Croup	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
8	Enteric Fever	4	...	1	...	2	...	1	...	...	1	...	1	1	...	...	...	...	1	...	...	...	...	...	...	...	4
9	Cholera	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
10	Plague	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
11	Diarrhœa and Dysentery	39	26	12	...	...	1	...	...	...	2	...	3	4	19	...	...	...	5	3	...	...	1	...	2	...	39
12	Epidemic Zymotic Enteritis	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
13	Enteritis	2	2	...	...	...	...	...	...	...	...	...	...	1	...	...	...	...	...	...	...	...	...	...	1	...	2
14	Other continued Fevers	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
15	Erysipelas	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
16	Puerperal Fever	3	...	...	...	1	2	...	...	...	...	...	1	...	1	...	...	...	1	...	...	...	...	...	...	...	3
17	Other Septic Diseases	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
18	Acute Rheumatism or Fever	1	...	...	1	...	...	...	...	...	...	...	...	...	1	...	...	...	...	...	...	...	...	...	...	...	1
19	Intermittent Fever	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
20	Malarial Cachexia	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
21	Tuberculosis of Meninges	1	...	1	...	...	...	...	...	...	1	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	1
22	Tuberculosis of Lungs	36	2	3	...	10	10	7	3	1	1	2	7	1	9	3	...	1	2	1	...	4	1	2	2	36
23	Other forms of Tuberculosis	3	1	...	...	...	2	...	...	...	...	...	1	...	...	...	...	...	...	1	...	...	1	...	...	...	3
24	Alcoholism	1	...	...	...	...	1	...	...	...	...	...	...	...	1	...	...	...	...	...	...	...	...	...	...	...	1
25	Cancer	3	...	...	...	...	...	2	...	1	...	...	...	...	1	1	...	...	1	...	...	...	...	...	...	...	3
26	Premature Birth	18	18	...	...	...	...	...	...	...	2	2	1	2	5	1	3	...	...	...	1	1	...	...	...	...	18
27	Developmental Diseases	26	23	3	...	...	...	...	...	...	1	1	4	1	12	3	1	...	2	...	...	...	1	...	...	...	26
28	Old Age	3	...	...	...	...	...	...	1	2	...	1	1	...	1	...	...	...	...	...	...	...	...	...	...	...	3
29	Meningitis	18	10	6	...	...	2	...	...	...	...	...	4	1	5	...	4	...	1	...	...	...	3	...	...	...	18
30	Other Diseases of Nervous System	3	...	...	...	...	1	1	...	1	...	...	...	...	1	...	...	...	1	...	...	...	...	...	1	...	3
31	Organic Diseases of Heart	14	...	1	...	3	3	...	6	1	1	1	4	...	4	1	1	...	...	...	...	...	2	...	...	...	14
32	Acute Bronchitis	24	13	6	3	...	...	...	1	1	3	...	2	...	12	...	2	...	1	1	...	1	1	...	1	...	24
33	Chronic Bronchitis	2	...	...	...	...	...	...	2	...	1	...	...	...	...	...	1	...	...	...	...	...	...	...	...	...	2
34	Pneumonia, Lobar or Croupous	34	16	9	...	1	2	3	3	...	...	2	6	2	6	2	6	1	1	2	...	3	3	...	...	...	34
35	Pneumonia, Broncho or Catarrhal	9	6	1	1	...	...	...	...	1	1	...	3	...	2	...	2	...	...	...	...	...	1	...	...	...	9
36	Rockdrill ditto, or Miners' Phthisis	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
37	Diseases of Stomach	1	1	...	...	...	...	...	...	...	...	...	...	...	...	...	1	...	...	...	...	...	...	...	...	...	1
38	Obstruction of Intestines	1	...	...	...	1	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	1	...	1
39	Cirrhosis of Liver	1	...	...	...	...	...	1	...	...	...	...	...	...	...	...	...	...	...	...	1	...	...	...	...	...	1
40	Nephritis or Bright's Disease	4	...	2	...	...	...	1	1	...	1	...	1	1	1	...	...	...	...	...	...	...	...	...	...	...	4
41	Scurvy	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
42	Syphilis	2	2	...	...	...	...	...	...	...	...	..	...	...	...	...	...	...	...	1	...	...	1	...	...	...	2
43	Tumours, etc., Affections of Female Genital Organs	3	...	...	...	...	...	3	...	...	...	...	2	...	...	...	1	...	...	...	...	...	...	...	...	...	3
44	Diseases of Parturition	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
45	Accident or Negligence	9	...	2	...	2	4	1	...	...	...	...	...	...	1	...	..	...	...	5	2	...	...	...	1	...	9
46	Suicide or Murder	1	...	...	...	...	1	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	1	...	1
47	All other causes	6	1	...	...	2	2	...	1	...	...	...	3	...	2	...	1	...	...	...	...	...	...	...	...	...	6
	TOTALS	280	124	52	5	22	31	20	18	8	17	9	45	15	86	11	25	2	17	13	4	5	18	1	10	2	280

District No. 1 includes that portion of Johannesburg (farm Randjeslaagte) south of the Railway and north of Commissioner Street.
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TABLE D.

Return of Deaths among the Asiatic Population for the 12 months ending 30th June, 1912.

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. I.	II.	III.	IV.	V.	VI.	VII.	VIII.	IX.	X.	XI	XII.	XIII	Hospital.	Non-Resident.	Unknown	Total.
1	Smallpox	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
2	Measles	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
3	Scarlet Fever	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
4	Epidemic Influenza	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
5	Whooping Cough	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
6	Diphtheria	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
7	Membranous Croup	1	1	...	...	...	...	...	...	...	...	...	1	...	...	...	...	...	...	...	...	...	...	...	...	...	1
8	Enteric Fever	2	...	1	...	...	...	1	...	...	...	...	...	1	1	...	...	...	...	...	...	...	...	...	...	...	2
9	Cholera	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
10	Plague	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
11	Diarrhœa and Dysentery	5	3	2	...	...	...	...	...	...	...	...	...	...	5	...	...	...	...	...	...	...	...	...	...	...	5
12	Epidemic Zymotic Enteritis	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
13	Enteritis	1	1	...	...	...	...	...	...	...	...	...	1	...	...	...	...	...	...	...	...	...	...	...	...	...	1
14	Other continued Fevers	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
15	Erysipelas	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
16	Puerperal Fever	1	...	...	...	1	...	...	...	...	...	...	...	...	1	...	...	...	...	...	...	...	...	...	...	...	1
17	Other Septic Diseases	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
18	Acute Rheumatism or Fever	2	...	...	...	1	...	1	...	...	...	...	...	1	...	...	...	1	...	...	...	...	...	...	...	...	2
19	Intermittent Fever	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
20	Malarial Cachexia	1	...	...	...	1	...	...	...	...	...	...	...	...	1	...	...	...	...	...	...	...	...	...	...	...	1
21	Tuberculosis of Meninges	1	...	1	...	...	...	...	...	...	...	...	1	...	...	...	...	...	...	...	...	...	...	...	...	...	1
22	Tuberculosis of Lungs	6	...	...	...	3	1	2	...	...	...	...	...	...	5	...	...	1	...	...	...	...	...	...	...	...	6
23	Other forms of Tuberculosis	...	...	...	...		...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
24	Alcoholism	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
25	Cancer	2	...	...	...	...	...	...	2	...	...	...	...	...	2	...	...	...	...	...	...	...	...	...	...	...	2
26	Premature Birth	6	6	...	...	...	...	...	...	...	...	...	...	...	4	...	...	2	...	...	...	...	...	...	...	...	6
27	Developmental Diseases	13	10	3	...	...	...	...	...	...	...	...	1	...	10	...	...	2	...	...	...	...	...	...	...	...	13
28	Old Age	2	...	...	...	...	...	...	...	2	1	...	...	...	...	...	1	...	...	...	...	...	...	...	...	...	2
29	Meningitis	2	1	1	...	...	...	...	...	...	...	1	...	...	1	...	...	...	...	...	...	...	...	...	...	...	2
30	Other Diseases of Nervous System	2	...	...	...	...	...	...	2	...	...	...	...	...	1	...	1	...	...	...	...	...	...	...	...	...	2
31	Organic Diseases of Heart	7	...	...	...	...	1	3	2	1	1	...	...	...	2	1	...	...	...	...	...	...	...	...	3	...	7
32	Acute Bronchitis	8	2	2	...	...	2	...	1	1	1	...	...	...	6	...	...	...	...	...	...	...	1	...	...	...	8
33	Chronic Bronchitis	2	...	...	...	...	...	...	1	1	...	...	...	...	2	...	...	...	...	...	...	...	...	...	...	...	2
34	Pneumonia, Lobar or Croupous	7	...	1	...	1	1	2	2	...	...	...	1	...	4	1	...	...	1	...	...	...	...	...	...	...	7
35	Pneumonia, Broncho or Catarrhal	4	2	...	1	1	...	...	...	...	...	...	...	...	3	...	...	1	...	...	...	...	...	...	...	...	4
36	Rockdrill ditto, or Miners' Phthisis	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
37	Diseases of Stomach	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
38	Obstruction of Intestines	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
39	Cirrhosis of Liver	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
40	Nephritis or Bright's Disease	1	...	...	...	...	...	1	...	...	1	...	...	...	1	...	...	...	...	...	...	...	...	...	...	...	1
41	Scurvy	1	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	1
42	Syphilis	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
43	Tumours, etc., Affections of Female Genital Organs	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
44	Diseases of Parturition	...	...	...	...	...	...	...	...	...	...	...	...	...	2	...	1	...	...	...	...	1	...	...	...	...	4
45	Accident or Negligence	4	...	1	...	1	2	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	4
46	Suicide or Murder	...	...	...	...	...	...	...	...	...	...	...	1	...	1	...	...	...	...	...	...	...	...	...	...	...	2
47	All other causes	2	...	...	...	...	...	2	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
	TOTALS	83	26	12	1	9	7	12	11	5	4	1	6	2	52	2	3	7	1	...	...	1	1	...	3	...	83

District No. 1 includes that portion of Johannesburg (farm Randjeslaagte) south of the Railway and north of Commissioner Street.
District No. 2 includes Braamfontein, Hospital Hill and Hillbrow.
District No. 3 includes Marshalls Town and City and Suburban.
District No. 4 includes Ferreiras, Fordsburg and Mayfair.
District No. 5 includes Newtown, Vrededorp, the Cemetery and the Locations.
District No. 6 includes Jeppes, Jeppes Extension, Belgravia, etc.
District No. 7 includes Doornfontein, New Doornfontein, Bertrams, Lorentzville, Judith Paarl, Troyeville, Kensington Estate, Bezuidenhout Valley Township and Fairview.
District No. 8 includes Berea, Yeoville, Bellevue, Bellevue East, and North-Eastern suburban portion.
District No. 9 includes Auckland Park, Richmond, Melville, Newlands, New Clare, and North-Western suburban portion.
District No. 10 includes Paarls Hoop and Mines from Robinson westwards to boundary.
District No. 11 includes Central Mines (from Ferreira to City and Suburban).
District No. 12 includes Prospect Town, Denver and the Mines from Meyer and Charlton to Eastern boundary.
District No. 13 includes Ophirton, Booysens, Turffontein, Rosettenville, etc. (Southern suburban portion).

FACTORS OF MORTALITY, 1911-12.

Deaths.

		July, 1910, to June, 1911.		July, 1911, to June, 1912.	
		Deaths.	Death-Rate.	Deaths.	Death-Rate.
Diarrhœal Diseases	W.	177	1·58	226	1·7
	N.	168	1·7	200	1·9
	E.	40	5·1	37	3·07
	A.	16	3·08	6	
Pneumonia	W.	168	1·5	162	1·2
	N.	1,169	12·2	904	8·6
	E.	43	5·5	43	3·07
	A.	11	2·1	11	
Developmental Diseases *	W.	127	1·13	119	0·91
	N.	34	0·35	27	0·25
	E.	30	3·8	26	2·7
	A.	9	1·7	13	
Tuberculosis	W.	79	0·7	58	0·4
	N.	368	3·8	395	3·7
	E.	17	2·1	34	2·7
	A.	6	1·1	6	
Heart Disease	W.	145	1·2	141	1·0
	N.	73	0·7	76	0·7
	E.	15	1·9	14	1·2
	A.	7	1·3	4	
Enteric	W.	21	0·17	35	0·2
	N.	136	1·4	103	0·9
	E.	3	0·3	4	0·4
	A.	—	—	2	
Accident	W.	91	0·8	64	0·49
	N.	278	2·8	301	2·8
	E.	5	0·6	8	0·8
	A.	2	0·3	4	
Cancer	W.	50	0·4	53	0·4
	N.	10	0·10	13	0·12
	E.	1	0·12	3	0·34
	A.	4	0·77	2	
Miners' Phthisis	W.	40	0·32	71	0·54
	N.	45	0·4	47	0·44
	E.	1	0·12	—	—
	A.	—	—	—	
Meningitis	W.	39	0·34	32	0·24
	N.	263	2·76	193	1·83
	E.	13	1·6	18	1·35
	A.	1	0·19	2	
Measles	W.	67	0·59	24	0·18
	N.	63	0·64	31	0·29
	E.	10	1·26	4	0·27
	A.	2	0·38	—	
Epidemic Influenza	W.	6	0·05	3	0·02
	N.	—	—	—	—
	E.	—	—	2	0·13
	A.	—	—	—	
Smallpox	W.	—	—	—	—
	N.	6	0·06	—	—
	E.	—	—	—	—
	A.	—	—	—	—
Whooping Cough	W.	9	0·08	20	0·15
	N.	2	0·02	5	0·04
	E.	2	0·26	1	0·06
	A.	—	—	—	
Scarlet Fever...	W.	22	0·19	15	0·11
	N.	—	—	—	—
	E.	—	—	—	—
	A.	—	—	—	—
Suicide or Murder	W.	38	0·33	36	0·27
	N.	36	0·37	23	0·21
	E.	1	0·12	—	—
	A.	3	0·56	—	—

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

M.O.H. 1911-12

Deaths.

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

I. That during 1911-12 the Chief Factors of Mortality were:

(a) For Whites: Diarrhœal diseases (226 deaths, 96 per cent. among children under 5); pneumonia (162); heart disease (141); developmental diseases (119); premature birth (78); miners' phthisis (71); accident (64); tuberculosis (58); cancer (53); suicide or murder (36); enteric fever (35); meningitis (32); old age (26); measles (24); whooping cough (20); and diphtheritic disease (20).

(b) For Natives: Pneumonia (904); tuberculosis (395); accident (301); diarrhœal diseases (200); meningitis (193); enteric fever (103); and heart disease (76).

(c) For Eurafricans: Pneumonia (43); diarrhœal diseases (37); tuberculosis (34); developmental diseases (26); premature birth (18); and meningitis (18).

(d) For Asiatics: Developmental diseases (13); pneumonia (11); diarrhœal diseases (6); tuberculosis of lung (6); and premature birth (6).

II. That the comparison with 1910-11 is as follows:—

(a) As regards Whites, deaths from "diarrhœal diseases" rose from 177 to 226, and the "diarrhœal death-rate" from 1.58 to 1.7. Deaths from enteric numbered 35 as compared with 21 in 1910-11, equal to a death-rate of 0·2 as compared with 0·17. The number of cases of enteric notified in 1911-12 also showed a slight increase, being 236 as compared with 208 in the previous year. Whooping cough accounted for 20 deaths as against 9 in 1910-11. On the other hand, there was a material reduction in the mortality from measles, and the death-rolls from tuberculosis, developmental diseases, scarlet fever, pneumonia and heart disease were slightly less. The nominal death-rate from miners' phthisis was 0·54 as against 0·32, but it is possible that the real increase may have been greater than these figures indicate.

(b) With regard to Natives, there was a welcome reduction in pneumonia mortality, the deaths falling from 1,169 in 1910-11 to 904 in 1911-12, and the death-rate from 12·2 to 8·6. A slight improvement in the death-rate from tuberculosis (3·7 as against 3·8) is also recorded. The death-rate from measles was 0·29 as against 0·64.

(c) With regard to Eurafricans and Asiatics, the deaths from tuberculosis numbered 40, as compared with 23 in the previous year. On the other hand, the mortality from "diarrhœal diseases" was slightly lower, namely, 44 as against 56.

THE MORTALITY AMONGST NATIVES EMPLOYED ON MINES AND WORKS IN THE LABOUR AREA OF THE TRANSVAAL.

In February, 1912, a Commission, known as the "Tuberculosis Commission," of which the Medical Officer of Health is a member, was appointed by the Union Government, with the following reference:—

(a) To inquire into and take evidence for the purpose of ascertaining the extent and causes of the prevalence and spread of tuberculosis in its various forms among Europeans, Coloured Persons, Natives and Asiatics in the different areas of the Union; having regard, *inter alia*, to the effect of race, immigration, occupation, housing, and the concentration of persons in compounds, mission stations and locations, and of conditions of life generally, in spreading the disease; and to report as to the steps which can be profitably taken by the Government, local authorities and others for ameliorating the condition of those affected with the disease, and for controlling the disease in those areas in which it already prevails, and for preventing its introduction into fresh areas.

Return of Deaths and Death-Rates (per 1,000) from Certain Causes amongst Natives in Johannesburg during the Year1911-12.

"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.
"Miners' Phthisis" is entered up as "Silicosis."

Origin.	Pneumonia.				Phthisis and Tuberculosis.				Silicosis.				Meningitis.				All Other Diseases.				Average Annual Population (if available).	
	On.		Off.		On.		Off.		On.		Off.		On.		Off.		On.		Off.		On.	Off.
	Deaths	Rate	Deaths	Rate	Deaths	Rate	Deaths	Rate	Deaths	Rate	Deaths	Ra'e	Deaths	Rate	Deaths	Rate	Deaths	Rate	Deaths	Rate		
East Coast	310	13·5	3	1·08	264	11·5	7	2·5	34	1·48 1·52	1	0·36	64	2·78	...	...	300	13·07	10	3·6	22,933	2,773
Cape Colony	39	2·6	10	0·7	35	2·4	17	1·17	...	...	1	0·07	4	0·27	...	...	112	7·7	29	1·9	14,468	14,524
Brit. Basuto	40	11·2	12	5·67	18	5·07	8	3·7	1	0·28	...	...	1	0·28	...	...	39	10·9	26	12·2	3,548	2,116
Transvaal	37	6·5	32	1·3 1·6	11	1·9	17	0·70 0·64	...	...	1	0·05	5	0·88	5	0·20	47	8·3	98	4·05	5,648	24,183
Tropical	371	55·9	1	0·9	76	11·4	...	...	5	0·75	...	...	101	15·68	1	0·9	261	39·3	2	1·97	6,630	1,012
Coloured	...	...	20	...	2	...	18	...	...	...	...	...	...	...	8	...	10	...	76	...	...	...
All others	25	4·9	27	1·12	13	2·5	13	0·54	2	0·39	1	0·04	3	0·59	4	0·16	30	5·9	60	2·5	5,042	23,938
Totals	822	14·1	105	1·2	419	7·1	80	0·90	42	0·72	4	0·04	181	3·16	18	0·14	799	13·4	301	3·28	58,269	68,546

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

(b) To inquire into and take evidence for the purpose of ascertaining the extent and causes of the mortality of natives employed on the Witwatersrand Mines and their susceptibility to pneumonia, with special reference to those coming from tropical areas, and to make recommendations thereon.

On the inset Table opposite this page 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 1911-12. 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.

CALENDAR YEAR.	1905	1906	1907	1908	1909	1910	1911
76 Great Towns of England and Wales	140	145	127	129	118	115	141
141 Smaller Towns of England and Wales	132	138	122	124	111	104	133
Kimberley	125	151	119	106	80	117	106·3
OFFICIAL YEAR.	1905-6	1906-7	1907-8	1908-9	1909-10	1910-11	1911-12
Capetown	129	91	100	89	104	94·4	98·1
Durban	100	69	91	67	46	90·3	98·5
Pretoria	140	99	106	121	76	104	84·8
Johannesburg	177	140	121	134	117	110	114

During 1910-11 there were 3,996 births and 443 deaths; in 1911-12 there were 4,361 births and 499 deaths. These figures correspond to an infantile mortality rate of 110 for the year 1910-11, and of 114 for 1911-12.

Diarrhœal diseases and the effects of malnutrition were responsible for 61 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	30.6.11	340	126	304	84·8
Capetown	30.6.12	186·8 for all Coloured Races.			98·1
Kimberley	31.12.11	370·5 for all Coloured Races.			106·3
Johannesburg	30.6.12	361 for Natives and Cape-Coloured.		194	114

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. 1911-12

APPOINTMENT OF HEALTH VISITORS.

Health Visitors.

Two Health Visitors (Miss Sisterson and Miss Morisse) were appointed in July, 1911.

Their duties were defined generally as follows:—

(1) To visit all houses as soon as possible after the occurrence of a birth, where instructed to do so by the Medical Officer of Health.

(2) To obtain certain information, as to sanitary conditions, etc., as required by the Medical Officer.

(3) In cases where no doctor or properly qualified nurse is in attendance, to volunteer certain advice in regard to the case and the feeding of the infant. If refused in any instance, no further action to be taken, unless the death of the infant occurs.

(4) To re-visit certain selected cases at regular intervals.

(5) To investigate all cases of infantile death—*i.e.*, deaths under the age of twelve years—for the purpose of obtaining certain information when required by the Medical Officer of Health.

(6) To investigate, when specially instructed thereto, the sanitary conditions in shops, workshops, laundries and other places where female workers are employed.

Appended is the joint report of the two Health Visitors for the twelve months 1st July, 1911—30th June, 1912:—

Annual Report of Health Visitors.

During the year July, 1911-12, 3,746 visits were paid by us—viz., 1,071 births, 144 deaths, and 2,531 re-visits. Of the 1,071 infants, 45 have died.

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

We visit all houses in these districts where births occur immediately after registration, but, owing to no Notification of Births Act being in force, many births are not made known until the death of the infant is registered.

On visiting, we report on the conditions under which the families are living, state of the child and mother, methods of feeding and care of infant, etc., and give them any advice which we consider necessary, and encourage them to keep their house and surroundings in a cleanly state. It is pleasing to note in many cases that this advice is taken, and on future visits the home conditions are found to have improved.

We find that mothers are beginning to realise the advantages of regular breast feeding, daily bathing, fresh air, ventilation, and proper clothing, and gradually to understand that an infant only requires milk, and not the food of an adult. We find that most mothers are willing to nurse their infants, but with many others it is impossible to continue owing to lack of nourishment. We feel that this could be to a great extent rectified by the establishment of milk depôts.

As we are becoming better known, mothers look for and appreciate our visits, and notify us when changing their addresses, which is a frequent occurrence.

There have been a number of cases in which mother and child have suffered through the ignorance and negligence of the midwife in attendance, the infants principally suffering from bad eyes. To these and other unsatisfactory cases we have paid daily visits.

Where it has been possible in cases of sickness, we have secured admittance to the General Hospital, both for mothers and babies. But as a rule it is difficult to get immediate admission, therefore the infants often have little chance of recovery.

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.

PNEUMONIA AND BRONCHITIS.

The following are the figures as to pneumonia deaths for the period under review and the two 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

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)

In 1911-12 the rates were as follow: For Whites, 1·2; Natives, 8·6; Eurafricans and Asiatics, 3·7; and for "London," 1·2 (1911).

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.

ENTERIC OR TYPHOID FEVER.

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

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

A large number of imported cases, *i.e.*, persons developing or suffering from enteric, came from outside districts into the hospitals and nursing

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Enteric Fever, Diarrhœal Diseases.

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.
Whites	1·3	·4	·7	·4	·3	·3	0·15	0·18
Natives, Eurafricans	1·4	1·6	1·4	2·0	1·2	1·5	1·42	1·35
Asiatics	·6	·09	·8	·9	·7	·4	—	—
In the 77 "Great Towns" of England... ...	·12	·10	·08	·09	·07	·08	0·06	0·05

In 1911-12, the rates were as follow:—For "*Whites*," 0·2; "*Natives*," 0·9; "*Eurafricans and Asiatics*," 0·419; and in The 77 "Great Towns," 0·06.

DIARRHŒAL DISEASES.

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

	Whites.	Natives.	Eurafricans.	Asiatics.
Diarrhœa and Dysentery	215	177	39	5
Enteritis	18	27	2	1
	233	204	41	6

Death-Rate (Diarrhœal Diseases) per 1,000 of Population Living.

	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

In 1911-12 the rates were as follow:—For "Whites," 1·7; for "Natives," 1·9; for "Eurafricans and Asiatics," 3·076, and for "77 Great Towns" in England, 1·31.

The proportion of the foregoing deaths which took place amongst the children under five years of age of the different races was:—For Whites, 93 per cent.; Natives, 38 per cent.; Eurafricans, 97 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. Diarrhœal diseases are the chief cause of death amongst children under five years.

MENINGITIS.

Meningitis. Tuberculosis.

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—1911-1912.

	All ages.	—1	—5	—15	—25	—35	—45	—65	65
Whites	34	7	14	1	4	1	5	2	—
Natives	193	9	2	2	72	91	14	3	—
Eurafricans ...	18	10	6	—	—	2	—	—	—
Asiatics ...	2	1	1	—	—	—	—	—	—
Totals ...	247	27	23	3	76	94	19	5	—

With regard to the results of bacterial examination of 431 suspected cases of meningitis from 1st July, 1906, to 30th June, 1912, the Government Bacteriologist has kindly furnished the following figures:—Meningococcus present in 134 cases; pneumococcus in 79; meningococcus and pneumococcus in 0; streptococcus in 20; pneumococcus with streptococcus in 1; none of the foregoing in 197.

Age Incidence.—(a) *Amongst Whites.*—Of the 34 deaths, 22 were amongst persons under 15 years, 21 being very young children.

(b) *Amongst Eurafricans.*—16 of the 18 deaths were those of children under five.

(c) *Amongst Natives* the age-incidence was just the reverse of that amongst Whites and Eurafricans, 180 out of 193 being deaths of persons over 15 years of age.

(d) *Amongst Asiatics.*—Both cases were children under five years.

TUBERCULOSIS.

Appended is a statistical summary of the mortality from Tuberculosis in Johannesburg for the two years 1910-11 and 1911-12:—

DEATH-RATE PER 1,000.

	Pulmonary Phthisis.		Tubercular Meningitis.		Other Forms of Tuberculosis.	
	1910-11.	1911-12.	1910-11.	1911-12.	1910-11.	1911-12.
Johannesburg—						
Whites	·680	0·449	·017	·023	·094	·046
Natives	3·852	3·762	·010	·047	·680	·638
Asiatics and Eurafricans ...	1·778	2·797	—	·0139	—	·209
	1910.	1911.	1910.	1911.	1910.	1911.
London	1·14	1·34	·166	·176	·209	·199
England and Wales	1·015	—	0·152	—	·099	—

M.O.H. 1911-12

Tuberculosis.

A. Amongst Whites:—

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

(a) the proportion of fatal cases which may be regarded as "imported," *i.e.*, in which the infection was contracted before the deceased person came to South Africa;

(b) the proportion in which the disease was acquired during residence in South Africa; and

(c) the effect of occupation.

During the period in question, 497 whites died from tuberculosis. Of these, 267 were British-born, 60 hailed from other European countries, and 170 were Afrikanders, including 84 of English and 86 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.

Deaths from Tuberculosis of Oversea Immigrants in Johannesburg.

1st July, 1907, to 30th June, 1912.

B = Infected before arrival in South Africa. A = Infected after arrival in South Africa.

	Years of Residence in South Africa.																			
	—1		—2		—3		—4		—5		—10		—15		—20		+20		Total.	
	B	A	B	A	B	A	B	A	B	A	B	A	B	A	B	A	B	A	B	A
British Born	9	3	10	5	8	1	4	2	6	8	19	41	17	46	9	30	7	15	89	151
Other Europeans ...	—	—	2	1	—	1	—	—	3	2	1	12	2	10	1	4	1	6	10	36
Totals	9	3	12	6	8	2	4	2	9	10	20	53	19	56	10	34	8	21	99	187

In addition there were 27 deaths of British-born persons and 14 of other Europeans, the length of whose residence in South Africa was unknown.

The proportion of fatal cases which may be regarded as "imported" is as 99: 398, or about 19 per cent.

The proportion in which the disease appears to have been contracted in South Africa is made up of deaths of immigrants infected after arrival, viz., 187, plus deaths of Afrikanders, viz., 170, and is therefore 357: 240, or about 71 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	All Ages.	Unknown.
	3ms	6ms	12m																
MINERS—																			
Machine Drillers ...	3	9	21	22	5	6	7	3	4	1	2	1	1	—	1	1	1	88	—
Other Underground ...	9	13	22	19	9	7	4	3	3	—	2	1	1	1	2	1	1	98	6
Surface ...	3	2	3	4	—	—	2	—	—	1	—	—	—	—	—	1	—	16	2
Engine Drivers and Fitters...	1	—	1	5	3	3	2	2	1	—	3	1	—	—	1	—	1	24	—
Clerks & Salesmen	6	9	6	10	7	7	2	4	4	2	1	2	—	1	4	1	—	66	3
Housewives ...	5	8	1	11	6	1	6	2	1	1	1	—	—	—	3	1	2	49	3
Painters ...	—	2	—	—	1	—	—	—	—	—	—	—	—	1	—	—	—	4	—
Carpenters ...	1	1	—	—	—	1	—	—	—	1	1	1	—	—	—	—	—	6	—
All others ...	28	11	20	25	13	5	7	4	3	4	2	3	1	1	—	1	1	129	3
Total ...	56	55	74	96	44	30	30	18	16	10	12	9	3	4	11	6	6	480	17

192 deaths, or 38·6 per cent. of the total mortality from tuberculosis, occurred amongst miners employed underground, and in the majority of cases was no doubt associated with silicosis, 88, or nearly one-half, being those of machine-drillers. In 37·2 per cent. of cases death occurred during the first year of illness, and in another 19·3 per cent. before the end of the second year; in five years 77·4 per cent. were dead.

It is clear that the registered deaths from tuberculosis amongst miners (210), 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.

Clerks and salesmen furnish the next largest number of deaths (69) 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 72 per cent. of this class died within five years of infection.

Housewives contributed 52 deaths, and 73 per cent. of these sufferers succumbed before the end of the fifth year of illness.

B. AMONGST NATIVES:—

Of the 481 deaths registered during 1911-12, 335 were those of persons from the East Coast (chiefly Portuguese "boys"), 4 from British Central Africa, 17 from Transvaal, 9 from Orange Free State, 13 from Natal, 37 from Cape Colony, 12 from Rhodesia, 23 from Basutoland, 25 from Zululand, whilst 6 were classed as "unknown."

472 of the deceased persons were males and 9 females. The great majority of the males were mine boys (433) and labourers (48), including house and stable boys. Practically all of these were between the ages of 15 and 40 years.

The duration of illness was as follows:—31 died in less than one month; 106 under three months; 270 under six months; 26 under twelve months; 5 under eighteen months; 5 under two years; 14 after illness of more than two years. In 24 cases the duration of illness was unknown.

M.O.H. 1911-12

Tuberculosis.
Heart Disease.
Rheumatism.
Cancer.

Voluntary Notification commenced in July, 1907. Appended are results to 30th June, 1912:—

	1906-7.		1907-8.		1908-9.		1909-10.		1910-11.		1911-12.		Total.	
	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	351	417
Coloured -	—	299	166	280	44	258	97	326	226	385	249	481	782	2,029
Asiatics - -	—	14	7	12	1	12	—	9	5	6	5	40	13	53
Totals -	1	386	263	353	71	336	165	395	335	470	316	599	1,151	2,539

ORGANIC DISEASES OF HEART AND ACUTE RHEUMATISM.

These heart affections include pericarditis, endocarditis, valvular disease and hypertrophy. The deaths recorded during the year July 1st, 1911—June 30th, 1912, were 141 for Whites, 76 for Natives, 14 for Eurafricans, and 4 for Asiatics.

Of the White deaths, 102 were those of males and 39 those of females, indicating a considerably greater proprotionate incidence on males. Twenty died under 15 years of age and 121 at later periods.

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 0·100 for Whites, 0·07 for Natives, 0·20 for Eurafricans and Asiatics, as against 0·054 in England and Wales in 1909.

MALIGNANT DISEASE OR CANCER.

Whites—

The deaths from cancer were 67 for the year 1911-12. Of the total 43 were males and 24 females, and 66 (43 males and 23 females) occurred at ages over 35. Stated in terms of the 1911 census population, the mortality was 0·55 per 1,000 for males and 0·46 per 1,000 for females, as against 0·85 for males and 1·07 for females in England and Wales in 1910.

The English Registrar-General points out, however, that cancer-rates are most correctly estimated by comparing the total deaths at ages above 35 years with the number then living, and as the matter of cancer death-rates is one of some general interest, Dr. G. D. Maynard has kindly worked out the following comparative rates:—

EUROPEAN CANCER DEATH-RATES PER MILLION.

	T.	M.	F.
Johannesburg— Crude Annual Death-rate for 1911-12	516	564	460
Johannesburg— Corrected Annual Death-rate for 1911-12 ... ... Correction Factors obtained from Census Report, 1910 ...	838	827	768
Cancer Death-rate, England and Wales, 1910	967	856	1,070
Corrected Cancer Death-rate, England and Wales, Urban Areas, 1910	1,026	935	1,111
Comparative Mortality of Local Corrected Death-rates, putting England Urban Rates=100.	82	88	69
Johannesburg— Crude Death-rates for ages 35 and over	1,385	1,287	1,618
England and Wales— Crude Death-rates for ages 35 and over as (1891-1900) ...	2,316	1,870	2,715

In 6 cases the seat of the disease was not stated; in 22 the stomach was affected; in 12 the liver; in 5 the breast; in 5 the womb, etc.; in 5 the mouth or tongue; in 3 the jaw; in 4 the abdomen; in 2 the neck; and in 1 each the lungs, eye and rectum.

Natives—

13 deaths were recorded, 4 being at ages under 35 and 9 at later periods. The parts affected are recorded as follows: Liver, 4; stomach, 2; abdomen, 1; tongue, 1; not stated, 5. The death-rate per 1,000 living was 0·12, 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, one female and two males, all over 35. In the female case the womb was affected, and in the male cases the stomach and kidneys.

Asiatics—

Two deaths (one male and one female) occurred, both at ages above 35. The part affected was the stomach.

MINERS' PHTHISIS, ROCKDRILL PNEUMONIA OR SILICOSIS.

The 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	—	—

SYPHILIS.

Two infant Europeans, two infant natives, and two infant Eurafricans are registered as having died from this disease between July 1st, 1911, and June 30th, 1912.

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 1906-12:—

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

SMALLPOX AND VACCINATION.

A rather serious outbreak of smallpox commenced in the Malay Location in January, 1912. In all, 35 cases came to light, of which the last was notified on 6th February, 1912.

In the appended table particulars as to race, sex and condition as to vaccination of the sufferers are set forth:—

	Vaccinated in Infancy.		Unvaccinated.		Doubtful.		Total.		
	M.	F.	M.	F.	M.	F.	M.	F.	P.
Indians ...	—	—	8	6	—	—	8	6	14
Malays ...	1	—	4	6	—	—	5	6	11
Eurafricans ...	—	—	4	4	—	1	4	5	9
French Creole..	—	—	—	—	—	1	—	1	1
	1	—	16	16	—	2	17	18	35

M.O.H. 1911-12

Smallpox.

Deaths.—Of the 35 persons attacked, four died, viz., two Malays and two Eurafricans. None of these four victims had at any time been vaccinated.

The history of the outbreak is briefly as follows:—On the 4th January, a Malay, named Eksteen, was notified to be suffering from an advanced and very severe attack of small-pox, was removed to Rietfontein Lazaretto and died on the following day. Although the attack apparently commenced on December 26th, no doctor was called in till the 4th January. So far as could be gathered from the sufferer, he was engaged up to Christmas in masonry work for a Fordsburg property owner. In consequence of this case, a house-to-house visitation of the fifteen streets of the Malay Location was made on 5th January, between 7 and 9.30 a.m., by the whole staff of inspectors under the direction of the Medical Officer of Health and Assistant Medical Officer of Health. This search was entirely without result, for certain cases subsequently discovered were successfully concealed.

At 10 p.m. on the 6th January, the Medical Officer of Health was medically notified that a child was lying dead from small-pox in a house in 16th Street. No doctor was called in till twelve or thirteen hours after death. This house, as well as the outside room in which the child lay, had been thoroughly searched on the 5th January. Through the courtesy of the Police authorities, a Police guard was stationed outside the house for the night to prevent anyone entering or leaving until the arrival of the Council's officials.

Commencing at 7 a.m., on the 7th January, a second house-to-house inspection of the fifteen streets of the Location was made by the Medical Officer of Health with a large staff of inspectors. At a house in 22nd Street entry was refused until force was threatened. The householder stated that there were no children on the premises, and that there was no illness in his dwelling. On entering, however, two children were found covered with the eruption of small-pox. These children were sent to the Lazaretto and disinfection was carried out in what were believed to be all the rooms of the dwelling.

In the meantime, the Medical Officer of Health met, by arrangement, a large number of leading Indians and Malays, and addressed them on the importance of prompt notification of cases of smallpox, assuring them that their religious customs would be respected—which, it appears, was what they seemed to be afraid of—and warned them of the serious consequences to the Indian community in sickness, prosecution and interference with business which continuance of the policy of concealment would entail. Several prominent residents promised their assistance and undertook to form an Indian Health Committee to help the sanitary officers.

The Medical Officer of Health then returned to 22nd Street and told the occupant of the infected house that he would be prosecuted. The latter thereupon confessed that other sick persons were still concealed in the place, and led the Medical Officer of Health to a small room opening by a concealed door off one of the rooms which had already been disinfected. In this room the Medical Officer of Health found three more children in different stages of smallpox, making in all five concealed cases in this house.

It was then ascertained that this family had returned to South Africa from India early in December, arriving in Johannesburg a few days later. Whilst in India, one of its members suffered from smallpox, and there had apparently been a subsequent chain of unreported cases between the date of their return and the discovery of the disease.

The policy of concealment adopted by the Indians occasioned much anxiety.

A daily house-to-house visitation and thorough searching of the 1,100 houses in the location was organised, and carried out at first by your inspectors and afterwards by men specially engaged for the purpose. Their instructions from the Medical Officer of Health were to enter every house, thoroughly search every room, cupboard and outhouse on the premises, and to use such force as might be necessary for the purpose.

On the 8th January another case of ten to twelve days' duration was discovered and sent to the Lazaretto. The following particulars in regard to this case will illustrate the difficulties with which the Council's officials had to contend:—

During the day it became known that a case existed in the family of an Indian in 20th Street. In the forenoon the house was suddenly surrounded and unsuccessfully searched, the Indian stating that his wife had gone to Potchefstroom. During the afternoon, Mr. Gandhi and the members of the Indian Voluntary Health Committee were unremitting in their efforts to trace the case. In the evening the Medical Officer of Health was asked to

meet the Committee. It was then stated that the father of the sufferer had agreed to give him up if certain assurances were given as to the child's general treatment and his own exemption from prosecution. The former was at once agreed to and the latter refused. Eventually, the Medical Officer of Health was taken by the father to a room in an otherwise empty house in 17th Street where the child and its mother were concealed.

Without the willing assistance of the Indian Committee, and especially of Messrs. Cachalia, Bawazia and Kamaldeen, it is fairly certain that this case would not have been traced at all, unless death had occurred.

During the course of the outbreak complaints were received from Indians *re* the forcing of doors, and in one case *re* breaking of glass. Inquiry was made whether the Council would pay therefor. The Medical Officer of Health replied that this forcible searching had been rendered necessary by the Indians themselves, and that before laying the matter of payment for damage before the Public Health Committee, the Medical Officer of Health would be glad to know whether it was the intention of the Indians to indemnify the Council against the heavy cost which the outbreak occasioned by their criminal negligence had involved. No further action has been taken in the matter.

THE COST OF THE OUTBREAK was £526 19s. 3d., made up as follows:—

Payments to Vaccination Officers	£284	2	0
Salaries of six Searchers and one Temporary Additional Sanitary Inspector	242	17	3
	£526	19	3

The outbreak imposed much additional work on the Council's permanent staff of inspectors, and it is due to those officials to state that, as usual, they undertook this extra work cheerfully, energetically and very successfully.

SMALLPOX PROSECUTIONS.

Appended are particulars of the prosecutions to which this outbreak gave rise:—

NAME.	CHARGE.	RESULT.
1. Ahmud Jhagbai	(a) Giving false answers as to existence of Infectious Disease	Conviction and fine £10.
	(b) Failure to notify smallpox	Conviction and fine £10.
2. Ali Manam	(a) Giving false answers ...	£10.
	(b) Failure to notify ...	£10.
3. Gafi Manam	Giving false answers ...	£10.
4. Moosa Salejee Coovadia ...	(a) Failure to notify smallpox	£10.
	(b) Giving folse anwers to Inspectors as to existence of Infectious Disease	Withdrawn.
5. Ahomed Salejee Coovadia ...	Failure to notify that his daughter Mariam was suffering from smallpox	Discharged, owing to inability of prosecution to prove legally that accused was the father of his daughter.
6. Ebrahim S. Coovadia ...	(a) Giving false answers to Inspectors as to existence of Infectious Disease	Discharged, because Inspectors inquired as to existence of "*any illness*" or "*sick person*" on premises, but did not use the words "*infectious disease*."
	(b) Three charges of failure to notify smallpox in three inmates of his house	Conviction and fine of £10 in each case, or £30 in all.

E. Coovadia and M. Coovadia appealed from the Magistrate's decision, and on 4th March, 1912, these appeals were taken before Sir J. Wessels, Mr. Justice Bristowe and Mr. Justice Curlewis.

Both appeals failed, and in view of the importance of the matter, the judgments, as reported in "The Rand Daily Mail" of March 12th, 1912, are reproduced verbatim:—

"*E. COOVADIA v. JOHANNESBURG MUNICIPALITY.*

"In giving a considered judgment in this matter, Sir John Wessels said "the question was whether the appellant knew or had become aware of the fact "that his children were suffering from a notifiable infectious disease, and whether "he failed to give notice to the Medical Officer of Health.

"There was no doubt that the three persons found upon the premises were "the children of Coovadia. The evidence on that point was uncontradicted.

"It was impossible for the State to do more than *prima facie* show what "the mental state was of the appellant. It was the duty of the State to bring "before the Court such evidence as would lead the Court to the belief that Ebrahim "was aware that the children were suffering from a notifiable infectious disease— "namely, smallpox. To dive into his mind was quite impossible, and only such "extraneous facts need be brought before the Court as to justify it in coming to "the conclusion that he was aware of the fact that his children were suffering from "smallpox.

"Dr. Porter stated that the children were suffering from smallpox at least three "and on the 7th he went searching. He saw several cases, and gave instructions "that the house should be disinfected; and after the disinfection had taken place, "and before the disinfectants were quite dry, he came back to the house, had a "conversation with appellant, the upshot of which was that the latter opened a "door in the wall and took out from a back room several cases of smallpox.

"Dr. Porter stated that the children were suffering from small-pox at least three "weeks old, that they were very marked cases, that the Inspectors, who were not "medical men, could diagnose the cases at once, and that there was no difficulty "in saying they were smallpox.

"On the 5th there had been an inspection at the Malay Location for small-"pox. It was not clear that Ebrahim knew of the inspection, but at any rate there "was such an inspection. Dr. Porter stated that smallpox was very common in "India. Taking all those facts into consideration, it was impossible to come to "any other conclusion than that he was aware of the fact that his children were "suffering from smallpox. At the third week, or later stage, the disease was "so marked that it was difficult to conceive that a person would not know that he "was dealing with a very serious disease. Moreover, there were a number of cases "in that particular house, and no one who saw a serious disease of that kind, and "who saw any case of a similar disease appearing in the same place, could be heard "to say that he did not know it was an infectious disease. Under the circum-"stances, there was a *prima facie* case that the children were suffering from "smallpox. The appellant had not come forward and stated that he was ignorant "that it was smallpox, or that it was a notifiable disease, and the Magistrate was "justified in finding him guilty.

"A fine of £10 for each case was inflicted, and there was no reason why it "should be reduced. It was a very serious matter to suppress any infectious "disease, especially one so terrible as smallpox. It was probably due to religious "reasons, but if Indians chose to live in a community such as Johannesburg, they "must abide strictly by the Public Health By-Laws of that community, and if they "at any time failed to notify, they must suffer the penalty."

"*M. COOVADIA v. JOHANNESBURG MUNICIPALITY.*

"In this case also a considered judgment was delivered. The appellant was "convicted of a contravention of the Public Health By-Laws, in that he failed to "report a case of notifiable infectious disease—namely, smallpox—in the case of "his daughter.

"The house of the accused was searched for the second time on the 7th, and "the girl was then discovered in the house suffering from well-marked smallpox, "probably in the second week stage.

"In giving judgment, his Lordship said it was clear that the father must "have known his daughter was suffering from a very severe illness, and he must "have known from the nature of it that it was infectious, because not only was "that child affected, but several of the other children in the house. Under the "circumstances, it would have been impossible for him to come forward to say he "knew nothing of it—and, in fact, he had not come forward and attempted to "do so. There was ample evidence to justify the Magistrate in coming to the "conclusion that he knew perfectly well that the child was suffering from a serious "infectious disease, and that it was his duty to have notified it."

SPECIAL SMALLPOX REGULATIONS.—In the meantime, however, namely in the interval between the conviction of the Coovadias in the Lower Court and the Supreme Court's decision on their appeals, the following Regulation to compel notification was drafted by the Medical Officer of Health, approved by the Council, and duly gazetted by His Honour The Administrator:—

9. (a) Where any person on any premises within the Municipality of Johannesburg is suffering from smallpox or the following symptoms, namely, general feeling of illness, accompanied by pain in the back or loins, followed in the course of a few days by the appearance of hard pimples on the forehead, face, about the wrist and elsewhere, then any relative of such sufferer present on the premises or being in attendance on such sufferer, or any person in charge of or in attendance on such sufferer, or the head of the household to which such sufferer belongs, or the occupier of the said premises shall forthwith, on becoming aware of such sufferer's condition, give notice thereof to the Medical Officer of Health at his office, Municipal Buildings.

(b) Such notice shall not be deemed to have been given unless it be sent by registered post, or unless it be delivered by hand during ordinary office hours, and a receipt therefor obtained from the office of the Medical Officer of Health.

(c) "Ordinary office hours" shall mean from 9 a.m. to 12.45 p.m. and from 2 p.m. to 4.45 p.m. on any weekday, not being a public holiday, except Saturday, in regard to which it shall mean from 9 a.m. to 12.45 p.m.

(d) The term "premises" shall mean any building, room, tenement, hut, shed, booth, tent, van, cart, or wagon, and any yard or land in connection therewith used or capable of being used for human habitation.

(e) Provided that any person upon whom this Regulation imposes the duty of such notification shall be deemed to be aware of the nature of the disease from which the sick person is suffering, unless he can prove that he was not aware, and that he could not by obtaining the advice of a medical practitioner and taking any other reasonable precaution, have ascertained the nature of the disease or symptoms which such sufferer presented.

(f) Any person failing to comply with the requirements of this Regulation shall be liable to a penalty not exceeding fifty pounds, and, in default of payment, to imprisonment with hard labour for a period not exceeding three months.

The same Regulations also provide as follows:—

"8. (a) If it shall come to the knowledge of any person who is the employer "of a native or coloured person that such native or coloured person is suffering "from any such symptom as is mentioned in Regulation No. 9, it shall be the duty "of such employer to cause such native or coloured person to be immediately "examined by a duly qualified medical practitioner."

The routine measures adopted by the Department in dealing with smallpox will, no doubt, prevent any extensive spread of the disease, provided the notification is early, concealment does not take place, and contacts are readily traced.

On the other hand, if any of the above conditions are not complied with, the factors are present for a very serious outbreak, especially in a community where vaccination and re-vaccination are not compulsory for Whites.

Natives are fairly well protected, because vaccination is compulsory at the Pass Office. If, however, a community is to be efficiently protected, Public Vaccinators should be appointed and an adequate supply of reliable lymph provided.

Unfortunately, during the above outbreaks, complaints were received from many quarters that the lymph provided was almost useless, and it was necessary for the Council to make strong representations to Government in regard to the matter.

SCARLET FEVER.

	1909-10.		1910-11.		1911-12.	
	Cases.	Deaths.	Cases.	Deaths.	Cases.	Deaths.
WHITES	610	33	668	22	534	15
NATIVES	1	—	1	—	—	—
EURAFRICANS	5	—	5	—	1	—
ASIATICS	2	2	1	—	1	—

In 1911-12 the mortality was equal to 0·11 per 1,000 persons living. In 1910-11 there was a welcome drop to 0·17, but even this is much higher than the 1911 rate for the 77 Great English Towns, namely, 0·05. On the other hand, individual English towns suffered more severely than Johannesburg, the rate for Coventry being 0·29; for Stoke-on-Trent, 0·26; and for Norwich, 0·21.

The *preventive* value of the isolation in hospital of scarlet fever cases has for a good many years been a debateable question. Personally, your Medical Officer of Health is of opinion that if cases can be removed, as is sometimes possible during outbreaks in public institutions, at the first sign of illness, such prompt removal has a distinct preventive effect. But this preventive effect diminishes, often almost to vanishing point, when 48-72 or more hours are allowed to elapse between the onset of illness and the receipt

M.O.H. 1911-12

Scarlet Fever. Diphtheria.

of notification, a delay which is generally unavoidable in ordinary practice, owing to the impossibility of very early diagnosis. The questionable value of removing well-established scarlet fever cases to hospital is clearly indicated by figures carefully compiled in Birmingham, and set out at pp. 19-22 of the 1911 Report of the Medical Officer of Health for that city:—"The results for "1911 were as follows:—Where the primary case was removed to hospital, "the number of secondary cases per 1,000 susceptible persons remaining was "75.0; where the primary case was treated at home, the number of cases per "1,000 susceptible persons remaining was 71.3."

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.

Inclusion Bodies in the Blood as a Means of Differential Diagnosis of Scarlet Fever.

At p. 117 of *The Monthly Bulletin* (May, 1912) *of the Department of Health of the City of New York*, the following very interesting statement is made:—

> "In the *Centralblatt für Bacteriologie* of November 23, 1911, Professor "Döhle, of Kiel, reported that he had found, in thirty cases of scarlet fever blood "examined, certain inclusion bodies, principally in the polymorphonuclear "leucocytes, which to his knowledge had not been previously described, and which "were absent, with a few exceptions, in a large number of other pathologic con- "ditions used as controls. He is inclined to regard them as pathognomic of scarlet "fever.
>
> "Kretschmer, in the *Berliner Wochenshrift* of March 11, 1912, confirmed "these findings in an equal number of cases.
>
> "The Research Laboratory of the Department of Health has carried on "this work during the past few months, and is able to report that such bodies "are found in scarlet fever generally throughout the first week of the disease, "and always up to the fourth day. Furthermore, that they have not been found "in measles, German measles, various toxic rashes, including that due to horse "serum, and probably not in tonsillitis. They may, therefore, be regarded as a "valuable method of differentiation between scarlet fever and these conditions. "Further work is now being carried on in order to determine in what other patho- "logic conditions they may be found. At present it seems probable that some "septic conditions will show the same bodies as are found in scarlet fever, and, "therefore, scarlatinaform rashes, due to the former, cannot be thus distinguished "from scarlet fever. This point needs further elucidation.
>
> "A report of the work of the Research Laboratory on this subject, together "with the literature, will be found in the May issues of *The Archives of Pediatrics*.
>
> "The method of examination is as follows:—Make a thin, smooth blood "smear, so that the leucocytes will not be contracted; fix in methyl alcohol and "wash thoroughly; stain for one-half minute or less by Manson's method (one gram "methyl blue (Koch) to fifty c.c. boiling 5 per cent. borax solution); wash "thoroughly again and examine. The bodies are thus stained a lighter blue than "the nucleus of the polymorphonuclear cell; they vary in size from that of a "coccus to rather large irregular masses. The number of such bodies vary in each "cell, and in the number of cells involved. In fresh cases they are usually found "in large numbers and in practically all of the cells. Stained by Giemsa overnight, "the bodies take on a robin's egg blue colour, and may be readily distinguished "from the normal granulations of the cell and nucleus."

Dr. Pratt Johnson, who is at present the Acting Assistant Medical Officer of Health for Johannesburg, has obtained similar results from the blood of Kaffirs, in whom, hitherto, the diagnosis of scarlet fever has been a very doubtful matter. Dr. Pratt Johnson will, in due course, communicate his results to the Transvaal Medical Society.

DIPHTHERITIC DISEASE, INCLUDING MEMBRANOUS CROUP.

The mortality per 1,000 living was 0·18 in 1911-12, against 0·15 in the 77 Great Towns of England in 1911.

If the number of notifications can be taken as a guide, diphtheria has in the past been an uncommon though very fatal disease in Johannesburg.

The number of cases notified and the deaths attributed to this disease are set forth in the subjoined table:—

	1904-5.		1905-6.		1906-7.		1907-8.		1908-9.		1909-10.		1910-11.		1911-12.	
	Cases.	Deaths.	Cases.	Deaths.	Cases.	Deaths.	Cases.	Deaths.	Cases.	Deaths.	Cases.	Deaths.	Cases.	Deaths.	Cases.	Deaths.
Whites	22	10	34	17	16	11	31	11	46	18	40	22	60	20	125	22
Natives	2	4	4	2	2	4	3	2	2	—	4	1	3	1	7	—
Eurafricans ...	—	—	—	—	—	—	—	—	—	—	2	3	—	3	1	1
Asiatics	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	1

It will be noticed that there is a marked increase in the number of cases notified during the period under review, but the mortality for Whites per 1,000 living was 0·17, as against 0·19 in 1909-10, and 0·16 in 1910-11. In the 77 Great Towns in England in 1910 the mortality per 1,000 was 0·12.

While these figures show a slight increase over the preceding year, the mortality per 1,000 is less than in 1909-10, and it is obvious that the case mortality is also considerably lower. Whether, however, this is due to a milder type of the disease or to better notification it is difficult to say, but from the analysis of the returns it would appear that there was a marked and continued prevalence of the disease during the first six months of 1912, and it will be remembered that the summer was an unusually dry one.

In this connection, it is worth noting that Dr. Newsholme, Medical Officer of the Local Government Board in England, has pointed out that diphtheria is most prevalent in years in which the rainfall is deficient. When the increased prevalence of the disease was first noticed, a circular letter was addressed to the medical men in the town, drawing their attention to the existence of the disease and asking them in any case to which suspicion attached to have swabs taken from the throat or nose and sent to the Government Laboratories for examination. Dr. Watkins-Pitchford, the Government Bacteriologist, kindly made arrangements for the necessary examinations, and outfits containing the necessary apparatus for taking these swabs were supplied free of charge. Swabbing has since been resorted to much more generally, with the result that many cases have undoubtedly been notified which would otherwise have escaped attention.

Diphtheria is more or less endemically prevalent in all large towns, but Dr. Davies, of Bristol, has pointed out that periods of fatal prevalence, known as epidemics, recur, not like measles, in tidal waves of fairly constant and somewhat short intervals, but at long and uncertain intervals after a prolonged period of comparative and often remarkable quiescence. This he attributes to the importation into a district of a new and relatively more virulent type of diphtheria bacillus.

Possibly, the larger number of cases notified may mark the commencement of such an epidemic period, though the low mortality figure and the fact that the apparent increase may be partly due to more accurate methods of diagnosis afford reason for hope that such is not the case.

The disease was widely distributed throughout the town generally, and early in May a circular was sent to the principal of every school in Johannesburg, drawing attention to the procedure to be adopted with regard to the exclusion of individual children from school on account of diphtheria. No child is now allowed to return to school until at least two negative swabs have been obtained.

A certain grouping of cases occurred at the Marist Bros.' College, which the School Authorities closed on this account. A few cases also occurred in the infant department of the Twist Street School, which, after consultation with the headmaster, was closed from the 12th June until the end of the term. At the beginning of June there was a similar small outbreak

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Diphtheria.
Erysipelas.
Measles.
Plague.

in one of the boarding-houses at King Edward VII. School, and, as two cases of scarlet fever were also notified from the other boarding-house, the governors, after discussing the matter with Dr. Welchman, their School Medical Officer, and the Acting Medical Officer of Health, decided, in view of the short time which remained before the end of the term, to close the school on the 17th June.

In connection with this outbreak, representations were made to the Governors of the advisability of providing a proper isolation block, and as the result of a meeting with His Honour the Administrator on the subject, it is understood that this will be done.

ERYSIPELAS.

	1909 10.		1910-11.		1911-12.	
	Cases.	Deaths.	Cases.	Deaths.	Cases.	Deaths.
Whites	38	1	82	8	77	5
Natives	22	11	45	8	44	7
Eurafricans ...	2	—	1	—	3	—
Asiatics	—	—	2	—	—	—

The death-rate per 1,000 was 0·038 in 1911-12, against 0·023 in England and Wales and 0·066 in Johannesburg in 1910-11. As in former years, however, the majority of cases were facial, and about 61 per cent. of the White cases were not associated with any visible wound.

MEASLES.

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

	1909 10.	1910 11.	1911-12.
Whites ...	0·107	0·556	0 185
Natives ...	0·090	0 610	0 295
Eurafricans ... / Asiatics ...	0·230	0 830	0 278
77 English Towns	·031 (1910)	0·47 (1911)	

PLAGUE PREVENTION.

No case of plague occurred during the period under review. The usual precautionary measures were, however, continued. These included the destruction of 27,746 rats, the bacterial examination of 4,119 rat carcases, the bacterial examination of pneumonia sputum in certain cases, and supervision for ten days of Malays and Indians arriving from plague-infected centres.

On the 25th January, 1912, the Medical Officer of Health reported to the Public Health Committee that in view of the occurrence of plague in Durban, and the fact that the sufferer was a man who was engaged in unloading goods from a ship into trucks for Johannesburg, he had visited Rietfontein Plague Camp on the 18th January to satisfy himself that facilities existed for dealing promptly with any plague patients whom it might be necessary to send out on short notice.

With the knowledge of Dr. Mehliss (Superintendent of the Lazaretto), who kindly offered every facility for inspection, the Medical Officer of Health asked that representations be made to His Honour the Administrator as to the desirability of placing the Plague Camp in a state of complete readiness, providing a suitable bath for each of the four bath-houses, and of having immediately accessible ten tents, measuring 14 feet by 28 feet, in order to provide for ten white patients, twenty Indians and ten natives.

The Medical Officer of Health also reported that he had discussed informally, but in considerable detail, with the Medical Officer of Health of the Union the arrangements and plans of campaign in case plague should occur; also that he had circularised local practitioners as to the importance of getting sputum from suspected cases of pneumonia amongst Indians promptly examined at the Government Laboratory.

The proposals in this report were approved, and it was also decided that the delegates of representative public bodies be invited to a Conference *re* the general question of plague prevention.

Local Conference re *Plague Prevention.*—This Conference was held in the Council Chamber on February 2nd, 1912, and the following is a report of what occurred:—

Present: Mr. W. H. Barret (Assistant Traffic Manager, S.A.R.), Major Douglas, D.S.O. (Deputy Commissioner, Police), Drs. Slater and Visser (H.M. Prison), and representatives of public bodies, as follows: Dr. G. A. Turner (Chamber of Mines), Mr. R. Hamilton (President, Chamber of Commerce), with Messrs. A. Rogaly, J. Halsall, J. C. Lucas, W. L. Downing, C. H. Leek, J. Pattison, C. Gray, J. E. Howes, J. Holdcroft, and W. Smale Adams; Sir Kendal Franks and Dr. R. P. Mackenzie (Transvaal Medical Society), together with the Chairman of the Public Health Committee (Mr. W. R. Boustred), the Deputy Town Clerk, and the Medical Officer of Health.

The Chairman of the Public Health Committee, having thanked the delegates for their attendance, briefly referred to the object of the meeting, and requested the Medical Officer of Health to explain in detail the points which it was desired to lay before them.

The Medical Officer of Health stated that the cause of bubonic plague is the conveyance of the plague germ from infected rats by rat-fleas to man, in the same way as the mosquito conveys the germ of malaria from malaria-infected persons to the healthy, and that it has been found that when rat infection exists to the extent of 2 per cent. of the rats examined, a very serious outbreak of human plague is likely to occur. At present there is no rat plague in Johannesburg, but, as is well known, rat plague exists in Durban, and three human plague-deaths have occurred there. Rat-carrying forage and foodstuffs are constantly being sent by rail from Durban into Johannesburg, and, since the 8th January, sugar, oats, fodder and linseed have been sent from a rat-plague-infected store in Durban to four separate stores in Marshalls Town, Johannesburg. In addition, rats have been observed even in passenger trains from Durban.

To safeguard Johannesburg as far as possible against invasion by rat plague, the Health Committee has already instituted in the Malay Location a daily removal of the house refuse on which rats live, and has resolved on the provision at the earliest possible moment of a similar service for the rest of the town. Special attention is paid to rat-catching at the Kazerne, Malay Location, and in forage stores, and, by the bacterial examination at the Government Laboratories of the rats from these various sources, a sharp lookout is kept for the earliest indication of rat plague.

Further, the Council has decided to enforce, as soon as possible, the rat-proofing of the Malay Location, forage stores, and of such other buildings as the Medical Officer of Health may advise.

There remains the additional urgent necessity of a vigorous general rat campaign, on the lines of (a) preventing rats getting here, (b) attacking those that are here, (c) rat-proofing of buildings, and (d) reporting dead or sick rats.

The prevention of diseased rats getting into Johannesburg depends on the co-operation of the Railway Authorities, both at Durban and at the Kazerne.

For the destruction of rats, it is first of all essential to create a famine amongst rats, as otherwise they will neither enter traps nor take poison bait. When this famine has been created by an effective daily removal of house refuse, then poisoning (including the use of various preparations of Danyz' virus) and trapping of rats become practicable, and should be associated with a vigorous search for rat-runs and their destruction when found.

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Rat-proofing may be effected by laying impervious floors, and, in the case of temporary buildings, by raising them on buttresses above the ground, or by applying a V-shaped guard of galvanised iron around and outside the footings. In forage stores, where rats exist in hundreds, there should be provided, in addition to impervious floors, special raised platforms, on which the forage can be placed, and under which cats and dogs can get at the rats.

It will be easily understood, however, that this rat campaign is too huge an undertaking to be successfully tackled by the Public Health Department alone. It is, therefore, necessary that the co-operation of the citizens be secured and the public temper kept sweet, and it is specially with this object that the various public bodies represented at this meeting can give invaluable assistance. The value of such co-operation was very clearly demonstrated in 1907 at San Francisco, upon which city the continuance of plague brought an ultimatum from the Federal Government that unless the disease had disappeared, or was well on the way to disappear, before the expiration of ninety days, the city would, regardless of its commercial interests, be strictly quarantined. As the result of a public meeting, no less than forty-two different committees were formed throughout the city, representing the various lines of professional and commercial industry. These committees raised nearly 180,000 dollars to provide effective assistance to the Health Board in its fight, and, in addition, the members of each sub-committee undertook to "spread the propaganda from the director of the campaign into kitchens and yards "of the city by creating a famine amongst the rats and a clean bill of health for "San Francisco. The main item of the committees' problem was to influence the "housewife; the obvious way to influence the housewife was through the man of "the house; the best way to reach him was through his employer; and the way to "reach the employer was to send a warning to him from the sub-committee of the "leading men in his line of business. The first charge laid upon them was to visit "every man in their business, make him clean up and kill rats, call a meeting of "his employees, tell them what threatened, and make them, their families and "their household servants, enlist for the rat war."

Now, there is, of course, no doubt that the position in San Francisco was exceedingly critical, both commercially and otherwise. On the other hand, there is not even rat-plague at present in Johannesburg, so far as one is aware. But there may be at any time, and it may, as in 1904, become a most serious matter, which will cost the town tens of thousands of pounds, unless steps be taken at once to minimise the risk.

The Public Health Committee, therefore, ask each of the various public bodies to do their share in this work.

As regards the Chamber of Mines, the proximity of forage stores to the mine fence makes the danger a real one for them, and, therefore, it is most important that they should get to work at once: (a) by warning their Managers to enforce constant and special care in the conservation and destruction of refuse, and (b) the reduction of rats by the use of traps, poison, cats, dogs, ferrets, etc.

Exactly the same steps should be taken by persons engaged in the sale of food, *e.g.*, butchers, bakers, hotel and restaurant proprietors.

Forage dealers, whose rat-infected stores are sources of special danger, are asked to co-operate by rat-proofing their premises, raising their forage on platforms, and attacking rats by means of traps, poison, and cats.

The Medical Society would, in turn, be asked to aid by getting its individual members to warn their patients and the homes they visited against the danger of rats, and the necessity for creating famine amongst them by conserving house refuse in suitable covered receptacles inaccessible, and of using traps and cats. In addition, if the position became more serious, they might be asked to lecture in different parts of the town on the methods of conveyance of rat plague to man and the prevention of this infection.

In conclusion, the Medical Officer of Health apologised for not having prepared a formal report, and thanked the delegates for listening to his remarks. There was no desire on the part of the Health Committee to create alarm, but, just as preparation for war is the best security for peace, so preparation for plague will lessen our danger of being over-run by it, and incurring an enormous direct and indirect financial loss.

In this preparation the help of the delegates would be invaluable, and the Public Health Committee felt sure that it would be willingly accorded.

Mr. A. Rogaly asked whether Danyz' virus had been tried for rat destruction, and thought that not only forage stores, but large wood and iron buildings, like the Municipal Offices, harboured rats.

Mr. W. H. Barrett promised the co-operation of the Railway Administration, said he believed every precaution was being taken at Durban to prevent rats getting up here, and that he would wire at once for details. He had found a preparation of Danyz' virus very effective in destroying rats.

Mr. J. Halsall had also found Danyz' virus of value, and suggested that the other local authorities along the Reef should be asked to co-operate.

Mr. Lucas asked whether raising forage on platforms would not suffice as a rat preventive measure in forage stores.

Mr. Hamilton, Dr. Turner, and Sir Kendal Franks promised the co-operation of their respective associations.

The Medical Officer of Health said that preparations of Danyz' virus would be tried, but the degree of success attending its use was uncertain and variable. Raising forage on platforms would not interfere with the nests and runs of the myriads of rats harboured beneath the wooden floor of the ordinary forage store. He hoped forage dealers would recognise the necessity for protecting themselves and the community in this matter, and asked that when starting to rat-proof they should warn his office, so that rats should first be hemmed in and destroyed. He emphasised the preventive value of work such as that of the various citizen committees in San Francisco in 1907.

The meeting terminated with a vote of thanks to the Chairman.

On 10th February the Medical Officer of Health presented to the Public Health Committee the appended *Special Report* re *Prevention of Plague and Disposal of House Refuse*:—

As already officially reported to the Council, bubonic plague exists in Durban, and its appearance in Johannesburg is possible—not to say probable—at any time within the next few months. Like most other large towns, Johannesburg is infested with rats. Rats and their fleas are the vehicles of plague infection. Rats live largely on refuse food and garbage. There is throughout the town much refuse and garbage. Up to the present it has not been practicable to render an efficient refuse removal service, owing to an insufficiency of boys, plant and animals, which was duly reported to the Public Health Committee. The resulting conditions of untidiness and dirt in backyards are those which favour the spread of plague by providing food for rats. These conditions have also been the subject of repeated recent complaint to the Medical Officer of Health and the Manager, Scavenging Department, by Councillors themselves. But without the necessary boys and plant the Manager, Scavenging Department, the Medical Officer of Health and Sanitary Inspectors are practically powerless to keep the town clean.

In November, 1911, with a view to a greatly improved service, the Manager, Scavenging Department, recommended the purchase of two motor refuse vans, to carry four tons each, and that the Council provide, free of cost, two thousand bins of such a pattern that they can readily be placed in the gutter by the householder, to facilitate rapid collection of the contents. Tenders for these motors were called for in January, but they can hardly be delivered before the end of June. Quotations for the bins were asked for on the 8th February, 1912.

Under ordinary circumstances, the Medical Officer of Health would have been willing to wait for the improved service till June, but the occurrence of plague in Durban entirely altered the position. Accordingly, on the 25th January, the Medical Officer of Health recommended, and the Public Health Committee resolved, to enforce an immediate and sustained cleaning of backyards, involving a daily refuse removal service in the thickly populated districts of the town.

The Committee further recommended that, as a matter of urgency, quotations be invited for the supply of five motor vans and two thousand rubbish bins. On the 8th inst. this recommendation was considered by the Finance Committee, who resolved to call for tenders in the ordinary way, which means that effect cannot, in all probability, be given to the Medical Officer of Health's recommendations for a good many months.

The Medical Officer of Health now begs respectfully to place it officially on record that his recommendation of the 25th ult., as to the necessity of an immediate and sustained cleaning-up of backyards, involving a daily refuse removal service in the thickly populated districts of the town, is unaltered, and is hereby repeated.

From the point of view of the Medical Officer of Health, it is immaterial whether this service is effected by means of the requisite extra number of ordinary carts or whether motor traction is employed. The point is that the improved service should be instituted with the least possible delay.

On consideration of this report on 13th February, 1912, the Medical Officer of Health was instructed to furnish a further report, specifying in detail the measures necessary in order to give a satisfactory refuse removal service to the town, including particularly a return showing the number of overseers, number of natives, number of carts, number of animals, etc., required in addition to the present establishment, together with an estimate of the extra cost involved.

Pursuant to this instruction, the Medical Officer of Health presented a Special Report, dated March 11th, 1912. This Report included the following recommendations:—

"I. That a daily domestic refuse removal service be instituted as soon as "practicable in the following districts: (a) All districts south of the railway line "from Mayfair on the west to Wolhuter on the east down to the mine boundary; "(b) Malay Location; (c) Vrededorp; (d) Braamfontein, west of Hospital Street; "(e) New Doornfontein and Doornfontein, south of Beit Street; (f) south side of "Bezuidenhout Valley; (g) Fairview; (h) Jeppes and Jeppes Extension, south of "tramline; (j) Ophirton and Booysens.

"II. That a tri-weekly domestic refuse removal service be rendered to the "other districts as far as and including Parktown, Melville, Richmond, Auckland "Park, Norwood, Orchards, Gardens and Orange Grove; and in all the southern "and western districts.

"III. That a weekly domestic refuse removal service be rendered to the "remaining outlying districts.

"IV. That the estimated capital expenditure involved in creating this "service, namely £5,600, and the annual estimated working cost, £6,637 10s., be "sanctioned; that the necessary additional plant, animals and natives be "sanctioned; and that five white extra overseers and three scavenging supervisors, "as recommended by the Manager, Scavenging Department, be appointed.

"VII. That, in order to facilitate the rapid and economical provision of the "approved type of refuse bin, arrangements, if possible, be completed with the "present contractor, or any other person whom the Council approve to supply "such receptacles to anyone presenting an order therefor from the Public Health "Department, which order shall only be issued after payment has been made to "the Council of the contract price for each receptacle required."

The work of giving effect to these proposals was in active progress during the closing weeks of the year under review.

PUERPERAL SEPTICÆMIA, ETC.

	1909-10.		1910-11.		1911-12.	
	Cases.	Deaths.	Cases.	Deaths.	Cases.	Deaths.
Whites	10	10	20	12 (including 1 outside)	12	9 (including 1 outside)
Natives	—	1	1	1	2	—
Eurafricans	—	—	1	1 outside	2	3
Asiatics	—	—		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 17 cases reported was brought for treatment into Johannesburg after confinement. Of the 16 cases which arose in Johannesburg, 6 were medically attended during confinement, 3 were looked after by certified nurses or midwives, and 7 by unqualified persons.

The death-rate from puerperal febrile conditions per 1,000 persons living was 0·39 in England and Wales in 1909. In Johannesburg, in 1911-12, it was 0·061. In considering these figures, it should be borne in mind that the birth-rate in Johannesburg was 33·6, against 24·8 for England and Wales. 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.

A more reliable comparison of the relative prevalence of puerperal septicæmia, etc., than the "death-rates per thousand of persons living," is the "death-rate per thousand births."

TABLE E.

Monthly Return of Infectious Disease notified in Johannesburg from 1st July, 1911, to 30th June, 1912.

	Race.	Totals.	July, 1911.	Aug., 1911.	Sept. 1911.	Oct., 1911.	Nov., 1911.	Dec., 1911.	Jan., 1912.	Feb., 1912.	Mar. 1912.	April, 1912.	May. 1912.	June, 1912.	Number of District. I.	II.	III.	IV.	V.	VI.	VII.	VIII.	IX.	X.	XI.	XII.	XIII.	Hospital.	Non-Resident.	Unknown	Total. E.	C.
Smallpox	W.	1	1	...	...	...	...	...	...	...	...	...	...	...	...	...	1	...	...	...	...	...	...	...	...	...	...	...	...	1	...
	N.	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
	E.	10	...	...	...	...	...	...	7	3	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
	A.	25	...	...	...	...	...	...	25	...	...	...	...	...	...	...	...	10	...	...	...	...	...	...	...	...	...	...	...	...	10
Typhoid or Enteric Fever	W.	310	3	12	10	11	32	44	54	35	35	37	20	17	23	20	14	40	11	23	20	12	12	18	10	16	17	...	74	...	310	...
	N.	365	17	17	11	20	35	46	49	45	44	27	38	15	2	9	4	1	18	1	42	...	3	205	38	17	...	...	22	3	...	365
	E.	12	...	...	...	1	1	2	2	2	3	...	...	1	2	...	1	...	2	...	1	...	...	1	...	4	...	...	1	...	...	12
	A.	6	...	...	...	1	...	...	...	...	2	2	1	...	1	...	...	2	2	...	...	...	...	...	...	...	...	...	1	...	...	6
Scarlet Fever or Scarlatina	W.	543	39	55	74	84	64	31	37	18	26	39	54	22	66	76	17	34	27	38	118	58	16	10	9	15	56	...	3	...	543	...
	N.	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
	E.	1	...	...	...	...	1	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
	A.	1	...	...	...	...	...	...	1	...	...	...	...	...	...	...	...	...	...	...	...	1	...	...	...	...	...	...	...	...	...	1
Puerperal Fever or Puerperal Septicæmia	W.	12	3	2	...	1	1	...	...	2	...	...	...	...	...	...	...	...	1	...	...	...	...	...	...	...	...	...	...	...	...	1
	N.	2	...	1	...	1	...	...	...	...	...	...	2	1	2	...	2	1	...	1	3	...	2	...	...	...	...	...	1	...	12	...
	E.	2	1	...	1	...	...	...	...	...	...	...	...	...	...	...	...	1	...	...	...	...	1	...	...	...	...	...	...	...	...	2
	A.	1	...	...	...	...	...	...	...	...	...	...	...	...	...	...	1	...	1	...	...	...	...	...	...	...	...	...	...	...	...	2
Diphtheria	W.	125	4	2	4	6	4	2	7	7	17	16	28	28	11	23	4	3	10	10	28	13	10	3	2	1	6	...	1	...	125	...
	N.	7	1	2	...	...	1	1	...	...	...	...	1	1	...	...	...	...	2	...	1	...	1	...	...	3	...	...	...	...	...	7
	E.	1	...	...	1	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	1	...	...	...	...	...	...	...	...	1
	A.	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	1	...	...	...	...	...	...	...	...	1
Membranous Croup	W.	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
	N.	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
	E.	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
	A.	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Erysipelas	W.	77	11	9	9	14	9	4	3	3	2	3	5	5	11	8	4	6	5	9	14	2	1	3	2	2	8	...	2	...	77	...
	N.	44	4	5	2	6	10	2	...	5	4	...	3	3	1	1	...	2	...	1	...	...	...	8	14	17	...	...	...	...	...	44
	E.	3	...	...	...	...	...	...	1	...	2	...	...	...	...	...	2	...	...	...	...	1	...	...	...	...	...	...	...	...	...	3
	A.	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Leprosy	W.	2	...	...	...	2	...	...	...	...	...	...	...	...	...	...	...	2	...	...	...	...	...	...	...	...	...	...	...	...	...	...
	N.	4	...	...	2	...	...	2	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	2	...
	E.	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	1	...	3	...	...	...	...	...	4
	A.	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Phthisis	W.	62	5	4	11	7	9	1	3	1	2	12	7	...	16	5	6	5	1	3	5	1	...	5	3	1	4	...	7	...	62	...
	N.	249	22	31	31	25	28	25	23	17	8	13	22	4	9	2	1	6	3	2	1	...	1	217	...	3	1	...	7	...	...	5
	E.	5	...	...	...	3	1	...	...	...	...	1	...	...	1	1	...	1	1	...	...	...	...	...	...	...	1	...	3	...	...	249
	A.	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	1	...	...	5
Anthrax	W.	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
	N.	1	...	...	...	...	...	...	...	1	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
	E.	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
	A.	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	1	...	...	1
Total of all Diseases	W.	1,132	66	84	108	125	119	82	104	66	82	107	116	73	129	132	48	91	54	84	188	86	41	39	26	35	91	...	88	...	1,132	...
	N.	672	44	56	46	52	74	76	72	69	56	40	64	23	12	12	5	10	23	4	44	...	6	431	52	43	1	...	26	3	...	672
	E.	34	1	...	2	4	3	2	10	5	5	1	...	1	3	1	4	1	14	...	1	2	1	1	...	4	...	...	2	...	...	34
	A.	33	...	...	...	1	...	...	26	...	2	2	1	1	1	...	...	2	28	...	...	1	...	...	...	...	...	...	1	...	...	33
TOTALS		1,871	111	140	156	182	196	160	212	140	145	150	181	98	145	145	57	104	119	88	233	89	48	471	78	82	92	...	117	3	1,132	739

District No. 1 includes that portion of Johannesburg (farm Randjeslaagte) south of the Railway and north of Commissioner Street.
District No. 2 includes Braamfontein, Hospital Hill and Hillbrow.
District No. 3 includes Marshalls Town and City and Suburban.
District No. 4 includes Ferreirns, Fordsburg and Mayfair.
District No. 5 includes Newtown, Vrededorp, the Cemetery and the Locations.
District No. 6 includes Jeppes, Jeppes Extension, Belgravia, etc.
District No. 7 includes Doornfontein, New Doornfontein, Bertrams, Lorentzville, Judith Paarl, Troyeville, Kensington Estate, Bezuidenhout Valley Township and Fairview.
District No. 8 includes Berea, Yeoville, Bellevue, Bellevue East, and North-Eastern suburban portion.
District No. 9 includes Auckland Park, Richmond, Melville, Newlands, New Clare, and North-Western suburban portion.
District No. 10 includes Paarls Hoop and Mines from Robinson westwards to boundary.
District No. 11 includes Central Mines (from Ferreira to City and Suburban).
District No. 12 includes Prospect Town, Denver and the Mines from Meyer and Charlton to Eastern boundary.
District No. 13 includes Ophirton, Boeysens, Turffontein, Rosettenville, etc. (Southern suburban portion).

M.O.H. 1911-12

Puerperal Septicæmia. Malaria. Leprosy. Anthrax. Notifiable Disease. Isolation Hospital.

The following figures (except those for Johannesburg) are taken from the Registrar-General's latest Annual Report (1910):—

DEATH-RATE FROM PUERPERAL SEPTICÆMIA AND DISEASES AND ACCIDENTS OF PREGNANCY AND CHILDBIRTH.

Johannesburg,	1909-10	17	equal to	4.4	per 1,000	births.
,,	1910-11	28	,,	7.0	,, ,,	,,
,,	1911-12	23	,,	5.2	,, ,,	,,
England and Wales,	1910	—	,,	3.5	,, ,,	,,
London	,,	—	,,	2.7	,, ,,	,,
Huntingdonshire ...	,,	—	,,	1.9	,, ,,	,,
Surrey	,,	—	,,	3.4	,, ,,	,,
Sussex	,,	—	,,	3.9	,, ,,	,,
Lancashire	,,	—	,,	4.1	,, ,,	,,
Cornwall	,,	—	,,	4.0	,, ,,	,,
W.R. Yorkshire ...	,,	—	,,	4.6	,, ,,	,,
Carmarthenshire ...	,,	—	,,	5.6	,, ,,	,,
Carnarvonshire ...	,,	—	,,	3.9	,, ,,	,,
Radnorshire	,,	—	,,	2.5	,, ,,	,,
Denbighshire	,,	—	,,	7.2	,, ,,	,,

MALARIA.

Appended are the statistics of this disease:—

	1909-10.	1910-11.	1911-12.
	Deaths.	Deaths.	Deaths.
WHITES ...	6	5	9
NATIVES ...	9	6	8
EURAFRICANS ...	1	—	—
ASIATICS ..	1	—	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.

Two Whites and four Natives were notified in 1911-12. All the native cases were East Coast boys.

ANTHRAX.

This case (a native girl) was sent from Krugersdorp to Johannesburg Hospital on 23rd February, 1912, by the Resident Magistrate of Krugersdorp. The hospital staff were unable to elicit from her any history or suggestion as to the source of infection.

NOTIFIABLE INFECTIOUS DISEASES.

These included smallpox, plague, typhus, enteric, scarlet fever, puerperal fever, diphtheria, erysipelas, leprosy, ankylostomiasis, anthrax, phthisis, and, for four months, measles.

During the year under notice, 1,871 cases were notified, viz.: 1,132 amongst Whites, 672 amongst Natives, 34 amongst Eurafricans, and 33 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) under the heading "Disinfection."

1,372 houses, 33 schools, 4 mine compounds, and 128,680 articles of clothing, bedding, etc., were disinfected; 5 stables were disinfected for glanders, and 1 dairy for anthrax.

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

M.O.H. 1911-12

Isolation Hospital. Receiving Hospital. Ambulance. Bacteriological Diagnosis.

by Dr. Mehliss (1911-12) 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.	Erysipelas.	Diphtheria.	Laryngitis.	Mumps.	Rheumatism.	Impetigo.
Whites, 1911-12	Admissions -	58	7	2	5	1	—	7	—	—
	Recovered -	55	7	2	4	1	—	7	—	—
	Not Discharged	3	—	—	1	—	—	—	—	—
Coloured, 1911-12.	Admissions -	2	15	62	2	2	1	1	1	1
	Recovered -	2	13	62	2	1	1	1	1	1
	Not Discharged	—	2	—	—	1	—	—	—	—

Total Cases:—Whites, 80, with no deaths; Coloured, 87, with no deaths.
Average length of isolation:—Whites, 29.21 days; Coloured, 34.4 days.
Cost per head per day:—Whites, 10s. 6d.; Coloured, 2s.; *Total cost*, £1,779 8s.
Payments by patients, £576 17s.; *amounts still due by patients*, £248 11s. 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 two well-fitted modern two-horse ambulances for Whites and a suitable covered four-wheeled vehicle, with stretcher, for Natives. 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 outbreak of smallpox in January-February, 1912, a motor-van for removing infected linen, etc., was purchased at a cost of £470.

During the period under review, 112 White cases and 208 Coloured were removed to Rietfontein by the above transport. In addition, 56 White patients were removed to the Johannesburg Hospital, and transport for 23 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.

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.
Typhoid ...	57	1	—
Tuberculosis ...	226	3	—
Diphtheria ...	136	203	—
Plague ...	—	1	—
—	419	208	—

These figures do not include rats examined for suspected plague (v. p. 25).

CURATIVE SERA.

Curative Sera. Nursing Homes. Abattoirs.

The Public Health Committee, on September 15th, 1902, sanctioned an arrangement by which the supply of therapeutic sera is obtained from Messrs. Burroughs, Welcome & Co., of London, and issued at cost price to medical practitioners, or gratuitously in necessitous cases. The amount of each serum obtained and distributed between 1st July, 1911, and 30th June, 1912, is as follows:—

Antitoxin.	*Phials obtained.*	*Phials distributed.*
Anti-diphtheritic	60	19
Anti-streptococcal	—	—
Anti-dysenteric	—	—
Anti-pneumonic	—	5

NURSING HOMES.

There are 17 registered nursing homes in Johannesburg. These places are inspected and licensed by the Public Health Department, and the Council can withdraw the licence if nuisance arise.

In January, 1904, the Transvaal Medical Society recommended "that "the space requirements for Nursing Homes should be as follows:—(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 ABATTOIRS.

The Abattoirs were opened on the 24th October, 1910, and, with the Stock Yard and Cattle Market, are under the direction of Mr. J. Irvine Smith, M.R.C.V.S., who has had very considerable experience of meat inspection.

The following extracts from the Annual Report for 1911-12 of the Director (Mr. James Irvine Smith, M.R.C.V.S.) are of quite exceptional interest:—

> . . . . the year's work . . . . from every view-point has been very satisfactory, revealing as it does a sound financial position, rapidly increasing and expanding trade, and the further establishment of necessary safeguards for the production of a wholesome meat supply.

Comparison with Glasgow and Manchester.

	Population.	No. of Abattoirs.	Animals slaughtered in 12 months.
Glasgow	884,520	4	432,849
Manchester	716,354	3 and Private Slaughter Houses	378,816
Johannesburg	237,220	1	453,736

Financial Position.

During 1911-12 the Abattoir, with the Live Stock Market, has yielded a nett profit of 9.5 per cent. on the capital invested, in addition to interest, depreciation, redemption and assessment rate.

The profits were thus disposed of:—

Capital Expenditure, Abattoir	£4,009	0	0
Contribution towards Relief of Rates	4,361	4	7

Particulars as to Animals Slaughtered.

Description.	Number.	Weight in lbs.
Cattle	62,705	37,375,239
Sheep, Lambs and Goats...	361,865	13,604,084
Calves	3,109	177,417
Pigs...	26,057	1,834,600
Totals	453,736	52,991,340

M.O.H. 1911-12

Abattoirs.

The Falling-off in Quantity of Imported Meat, as compared with 1910-11, was 1,091,441 lbs., chiefly beef.

Condemnation of Meat.—283¼ tons were condemned, made up as follows:—Beef, 130,216 lbs.; mutton, 83,957 lbs.; veal, 230 lbs.; pork, 347,253 lbs.

Tuberculosis.—The procedure laid down by the Royal Commission on Tuberculous Milk and Food, 1898, is closely adhered to.

The statistics show 305 cases of tuberculosis found during the year. Prior to the opening of the Johannesburg Abattoir the information relating to tuberculosis amongst animals throughout South Africa was most meagre. It was generally believed that tuberculosis was of rare occurrence amongst our domesticated animals. Occasional cases appeared here and there in milch cows, and it was generally thought that dairy stock was almost free from the disease, but since the opening of the Abattoir, which has entailed the inspection of all meat within and imported into the Municipal Area, we are able to gauge more accurately to what extent cattle are infected.

Cattle.—The Statistics reveal that oxen and Africander cows are rarely infected with the disease (about one case in 10,000). This, however, does not apply to pedigree stock and cows from heavy milch strains, such as Frieslands, Devons, Jerseys, Shorthorns, Ayrshires, etc., which are either imported or the progeny of imported stock, and the cases found at the Abattoir have led to the testing with tuberculin herds from which these infected animals have come, and this test has revealed an infection amongst this class of milch cow ranging from 5 per cent. to 87 per cent. *Udders Infected.*—Three cases in cows showed tubercular infection of the udder, clearly proving that during life they had been producing tubercular milk. *Pharyngeal Glands.*—Infection of the pharyngeal glands is a common lesion in infected cattle.

Sheep and Goats.—So far no cases have been found in sheep, and only one case amongst goats.

Pigs.—Prior to the opening of the Abattoir the writer was not aware of any South African cases of tuberculosis in pigs being on record. During the year 285 cases have been found in pigs. The principal seat of the disease in pigs is localised in the sub-maxillary glands. Occasionally we get generalised tuberculosis in a pig carcase; when this is present the disease is of an extensive nature, involving the glands of the pleural and peritoneal cavities.

Human and Bovine Infection.—We receive pigs from all over South Africa, and inquiries have revealed that the cause of the disease may have a double origin—*i.e.*, human or bovine—and, as the common seat of the disease is the sub-maxillary glands and glands of the neck, this seems to point to infected ingesta being the common cause of the disease in pigs. One case in point was that of eight pigs, all of which were infected with tuberculosis. On making inquiries, it was found that they were milk-fed pigs, which seemed to show that this was a case of bovine origin. Large numbers of the pigs slaughtered are known as Kaffir pigs, and the infection in this class of pig is probably derived from infected Kaffir sputum and excrement. Speaking generally, the Kaffirs do not feed their pigs on milk, and the Kaffir pig can be regarded as a scavenger.

Cysticercus Bovis (Measles in Beef).—During the year 84 cases of cysticercus bovis were discovered. The procedure adopted is as follows: Carcases of cattle (including the viscera) infested with tape-worm cysts, known as cysticercus bovis, are condemned if the infestation is excessive, or if the meat is watery or discoloured. Carcases are considered to be excessively infested if incisions in various parts of the musculature expose on the cut surfaces a number of cysts. Carcases (including the viscera) showing a slight infestation, viz., not exceeding ten cysts, as determined by a careful examination of the heart, muscles of mastication, diaphragm and its pillars, and of portions of the carcase, such as cuts into the shoulder and loin, are passed for food after removal and condemnation of the cysts and surrounding tissues, provided the carcase and parts thereof are placed in cold storage and frozen hard for one month. At the end of this period the carcases are thawed out and cut up into commercial joints, and, failing the discovery of any further cysts, are passed out. Carcases which show no cysts except on the heart are also detained in cold storage and frozen hard for one month and treated in a similar manner. The freezing of the carcase completely destroys the life of the cyst.

During the year a number of experiments have been conducted on dogs fed with frozen beef measle cysts, and we have failed to produce tape-worm in these animals.

Cysticercus Cellulosæ (Pork Measles).—From the Statistics, Appendix "E," it will be seen that 3,023 cases of cysticercus cullulosæ have been found, or 11¼ per cent. of the pigs slaughtered during the year.

It will therefore be seen that infestations of cysts in pigs are more extensive than in cattle. This fact is sufficiently explained by their nature as omnivorous animals, and points to the necessity for improved methods in sanitary handling, breeding, and feeding of pigs in this country.

The invasion varies in degree from slighter cases to very extensive infestations, where the parasites lie closely together, almost obliterating the muscular substance.

Measly pork may produce autoinfection, and the cysts may become located in the human muscles and vital organs, more especially the brain and the eyes.

The pork measle is more resistant to heat than beef measle, and remains alive after the death of the pig, while beef measles are killed with freezing.

Action Taken.—Measly pork, therefore, cannot, like measly beef, be rendered harmless by refrigeration, and all cases of cystic infection of pork, no matter whether it be slight or severe, are seized and condemned.

Emaciation.—It will be seen from the statistics that 137 carcases were condemned on account of emaciation and dropsy.

Frequently the terms "poorness" and "emaciation" are confused, although they refer to entirely different conditions.

Poorness is a physiological condition present in perfectly healthy animals. The organs are normally developed, but the presence of fat is relatively small.

Emaciation is a pathological condition, in which the ordinary nutritive condition of the tissues sinks below normal, and is accompanied by atrophy of the organs, including the muscular system, which takes on a soft and flabby condition. In extreme cases we get a serious infiltration of the sub-cutaneous and intermuscular connective tissues and the replacement of fat tissues with a gelatinous tissue.

Chill-Rooms and Refrigeration.

The Director emphasises the necessity for equipping with refrigerating machinery (at an estimated cost of £6,400) the chill-rooms, which have been provided at a cost of £2,000. He states that without cold storage the whole scheme is incomplete. The Transvaal Farmers' Association entirely approve of the proposal, which is, however, combated by the owners of cold storage premises and by the Chamber of Commerce, on which these owners are represented.

The Director states that this cold storage would prevent violent fluctuations in price of meat, would make for cheap food, and would assist the country's agricultural development by increasing facilities for a meat-export trade.

The Director observes that "bone-taint" in refrigerated beef has been shown to be the result of postponing the process of chilling or freezing until all the animal-heat has left the meat as the result of natural cooling. "Bone-taint" can, therefore, be prevented by freezing or chilling the meat directly after slaughter.

As regards the alleged deterioration in meat produced by freezing and thawing, the Director quotes the following conclusions from a recent report to the United States Senate by Dr. Richardson, whose experiments were carried out at 15 degrees F.:—

> Beef is just as wholesome and just as palatable at the end of the longest period of freezing as it was originally. There is no change in the chemical constituents of the beef. Thawing should be slow, and with slow thawing there is no drip out of the meat. The tissues assume their original condition. If thawing is carried out rapidly, the individual tissues do not quite come back to their original appearance.

Transportation of Meat.—The Director emphasises the necessity for cleanliness of vehicles and methods, the previous disinfection of railway trucks which have been used for other purposes, the necessity for better ventilation of the present type of refrigerator car, and for the provision both of an improved type of refrigerator car and of special meat trolleys for distributing meat only throughout the town.

Compensation by Insurance for Condemned Animals and Carcases.—In Continental countries it is universally recognised that compensation in the case of condemned animals is not only reasonable but a necessary proceeding, though at the same time the method of securing it varies greatly in different places. In some cases the Government undertakes the insurance; in others it is undertaken by the purchasers of the cattle; and in some few instances it is carried out at the instance of insurance companies. Whichever method be adopted, it is essential for the success of the system that the insurance should be compulsory, and it should be paid for by the person or parties who in the absence of insurance would sustain the loss; otherwise if the insurance was State-aided it might lead to abuses by unscrupulous dealers in diseased animals. The two years' working has furnished sufficient data upon which the trade risks can be based.

Some such system whereby the seller, the buyer, and the auctioneer each contribute, say, 3d. per head of cattle sold towards a general insurance fund, from which compensation is paid for animals condemned, is worthy of the consideration of auctioneers and butchers.

It would be advisable to limit this scheme, so that no insurance should be paid for any animal valued at less than, say, £5, and that premiums on cows, owing to the greater risk, should be 2s. per head.

Edinburgh Scheme.—In Edinburgh such a scheme of mutual insurance has been worked satisfactorily for the past nine years. There the arrangement exists between the auctioneers and the meat purveyor, and each contribute 6d. per head for heifers and bullocks. The fund thus provided is used for compensation.

Identification.—An arrangement can be made where the identification of the carcases is proved by means of marking.

M.O.H. 1911-12

Abattoirs.
By-Product Plant.
Milk Supply.

Special Premium for Pigs.—As 13 per cent. of the pigs are seized and condemned for various diseases, a special premium would require to be worked out for pigs.

No Insurance for Veal or Mutton.—Owing to the small quantity of mutton and veal seized and condemned, no insurance is necessary for sheep and calves.

By-Product Plant.

The by-product plant started work in October, 1911, and up to the end of June, 1912, the following quantities of fertiliser and tallow have been manufactured from the condemned and waste materials:—

Meat Meal	151,923 lbs.
Blood Meal	31,827 ,,
Tallow	82,955 ,,

The plant consists of a complete pumping, cooking, pressing and drying apparatus, tallow separators, meal and bone sifters, bone grinding mill, and the necessary steam boiler.

The fertiliser during the processes of manufacture is thoroughly sterilised at a temperature of 300 degrees Fahr.

The following are the analytical results by the Government Analyst:—

	Blood Meal.		Meat Meal.
Nitrogen	12.04 per cent.	...	7.56 per cent.
Phosphoric Oxide ...	.31 per cent.	...	8.66 per cent.

Price.—After careful consideration, the Public Health Committee decided that the fertilisers should be disposed of at cost price to the public, and the price was fixed at £7 10s. per ton of 2,000 lbs. for Blood or Meat Meal.

In arriving at the above decision the Committee was guided by the facts that the benefits of fertilisation have not yet been fully appreciated throughout the Union of South Africa, and that a desire still exists to test all fertilisers before launching out into a big expenditure.

Uses of Fertiliser.—It may be of some interest to Councillors to know that Germany, with 83 million cultivated acres, consumes 3 million tons of fertiliser annually; and Belgium, with 4,000,300 acres under cultivation, consumes 400,000 tons of fertiliser yearly, and it is on record that the Belgium farmer uses more fertiliser yearly per acre and gets more produce out of his soil than any other country.

It will be seen from the above analytical report that the fertilisers are particularly rich in phosphoric oxide and nitrogen.

Phosphoric Oxide in this form stimulates the early development of the young seedling to a remarkable extent, and farmers are well acquainted with the good start that any crop gets when manured with a super-phosphate.

Crops of turnips, mealies and barley respond most to phosphoric manuring. The Meat Meal is therefore recommended for such crops.

It is well known Nitrogen is the most expensive of the three fertilising elements. Both phosphoric oxide and nitrogen are contained in the fertilisers in a form which is directly and immediately available as a plant food.

Blood Meal is considered an excellent fertiliser for roses, carnations, strawberries and fruit of all kinds, and also constitutes a valuable poultry and ostrich food, greatly improving the quality of the eggs and the feathers of ostriches and poultry. It is considered that four ounces of fertiliser to the square yard is ample.

Another Digester.—By the addition of another digester the by-product plant would be capable of dealing with all dead animals collected throughout the Municipal Area.

The Director asks for the following increased provision in connection with the Abattoirs:—(a) The erection of permanent fire-proof offices; (b) increased railway siding accommodation for Live Stock Market; (c) roofing of all pens, Live Stock Market; (d) additional digester for by-product plant to treat all carcases collected in town; (e) installation of chill-rooms.

MILK SUPPLY.

Dairies and Milkshops.

298 Dairies and 94 milkshops are licensed and, as far as practicable, kept under observation. As stated in the Medical Officer of Health's previous Reports, the cleanliness of dairies and of methods still leaves much to be desired.

New By-laws for the regulation of the milk supply will be drafted under the Transvaal Local Government Ordinance, 1912.

Milk Analysis. Inspection of Foodstuffs. Analysis of Foods.

MILK ANALYSES.

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

	1906 7.	1907-8.	1908 9.	1909 10.	1910 11.	1911-12.
No. of Samples taken ...	235	264	244	342	292	311
No. examined bacterially ...	—	—	—	—	—	23 (all negative)
No. deficient Solids not Fat ...	31	33	27	11	3	7
No. do. Fat ...	5	7	3	15	5	2
No. with Preservatives ...	4	—	—	—	—	—
No. of Prosecutions ...	15	7	6	7	6	6
Amount of Fines	£105	£25	£22	£15/10/-	£14	£30

It is estimated that about 3,500 gallons of milk arrive daily in Johannesburg from rural districts in the Transvaal, Natal, and the O.F.S. As regards the production and handling of the major part of this source of supply, the Council has practically no control; and, by reason of the great distances involved, effective reformation in this respect will, it is feared, long remain a matter of considerable difficulty.

INSPECTION OF FOODSTUFFS.

The following goods were condemned by the Food and Drugs Inspector:—Fish, 205 cases and 600 lbs.; fruit, 21 cases; ox-tongues, 72 tins; brawn, 96 tins; cheese, 1; meat, 1,936 lbs.; hams and bacon, 17 tins.

A special inspector examines foodstuffs arriving at the Kazerne.

During the period under review he passed 1,538,106 lbs. of bacon, etc., 6,832,041 lbs. of fish, and 74,485 lbs. poultry.

He condemned 27,947 lbs. and 54 boxes fish, 28 barrels and 19 boxes herrings, 48 boxes haddocks, 22 cases hams, 60 lbs. shrimps, 1,370 lbs. soles, 2,300 lbs. groceries, 298 boxes fillets, 13 boxes sprats, 182 lbs. bacon, 7 dozen potted meat, 1,100 tins sardines and 493 boxes eggs.

ANALYSIS OF FOODS, 1911-12.

In addition to the 469 water examinations (see page 39), some 416 articles of food were examined during 1911-12 at the Government Laboratories. Details are appended:—

Number and Description.	Genuine or Pure.	Adulterated or Impure.	Doubtful.
311 Milk	303	8	—
59 Butter	59	—	—
3 Cocoa	3	—	—
22 Coffee (for chicory)	21	1	—
13 Rye Flour (for ergot) ...	13	—	—
7 Rice (weevils)	4	3	—
1 Brawn (fit for consumption) ..	1	—	—

This gives an average of 416 samples per year, or 3·454 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.*

† "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).

M.O.H. 1911-12

Rice Prosecution.

Prosecution in Respect of Weevil-Infected and Mouldy Rice.

(*MUNICIPAL COUNCIL* v. *KAROODIA.*)

In November, 1911, a consignment of 500 bags of "brown coolie-rice," imported by Mr. M. A. Karoodia, was refused by Messrs. Frenkel & Seehof for whom Mr. Karoodia had ordered it, on the ground that it was dirty and badly infected with weevils, and was therefore unfit for food. This view was endorsed by the Government Analyst, and the suggestion was then made on behalf of Mr. Karoodia that the rice should be cleansed by screening, winnowing and steaming. This proposal was assented to, but was subsequently withdrawn, and, at the request of Mr. Karoodia, a friendly prosecution for being in possession of rice unfit for the food of man was instituted against him, to decide whether it could be properly sold without previous cleaning.

In view of the fact that no similar case is accessibly recorded, and that none of the professional witnesses on either side could trace in any text-book on Public Health or on Food Analysis any pronouncement as to the fitness for food of rice infected with weevils, the following summary of the chemical, medical and trade evidence adduced is appended:—

John McCrae, Ph.D., Government Analyst for the Transvaal, examined four samples of this rice: No. 1 contained dead weevils and some fungoid growths; No. 2, dead and live weevils and a few moulds; No. 3, many dead insects, many moulds, and a large amount of fine material. Weevils produce excrement, and there must have been some in the rice, but did not see any. The rice was unfit for human food, but could be rendered fit by efficient cleaning. Cross-examined: The rice was unfit because it contained moulds, growths and insect life, which produces harmful compounds. Samples were not fair specimens of commercial brown rice. Detected the moulds by microscope. Culture test inconclusive unless positive. The characteristic mycelium made mistake impossible. Both live and dead material of moulds can give rise to gastric trouble. Had not heard of anyone being affected by eating mouldy rice. Under circumstances of very advanced decomposition, fungoid growth in cheese may be deleterious. Fungoid growth in cheese differs greatly from that in rice. Was unaware that every cargo of rice contains weevils.

Wilfred Watkins-Pitchford, M.D.(Lond.), F.R.C.S.(Eng.), D.P.H., Government Bacteriologist for the Transvaal, agreed that the samples described by Dr. McCrae were unfit for the food of man. Many things—*e.g.*, maggots and grubs—though not deleterious to health, are unfit for human food. Moulds and weevils in rice are calculated to be detrimental to health. Many varieties of cheese may depend for their virtue upon the presence of moulds, but rice does not. Moulds taken in any quantity with food produce dyspepsia and diarrhœa.

C. Porter, M.D., D.P.H.(Camb.), Medical Officer of Health, Johannesburg, considered the rice unfit for food in its present condition, because it was dirty. It was not good to have to eat dirt, even if boiled. Was prepared to consider any reasonable suggestion as to cleansing, which he thought might easily be effected.

Mr. A. S. Benson, Solicitor, for the defence, produced a distful of this rice, which had been cooked after washing. He and his wife partook freely of it, and suffered no ill-effects.

T. Kerr-Bell, M.B., D.P.H., said that weevily cereals are sold every day and eaten. Boiling would kill any weevils. No deleterious effects would follow eating this rice boiled. Samples were fair commercial specimens. Had himself bought worse rice. Found no moulds under microscope, and thought Dr. McCrae was mistaken in his belief that he had seen moulds. Only agreed with "Parkes & Kenwood's" statement that "moulds and fungi, such as *mucor mucedo*, "*penicillium* and *aspergillus* are apt to produce dyspepsia and diarrhœa," if such growths were ingested constantly and over a long period.

Alexander Heymann, M.A., Mast.Chem. (Moscow), Analytical Chemist, Johannesburg, had thoroughly searched these samples for moulds and fungi with Dr. Kerr-Bell and Mr. Gray, F.I.C., but had found none. The rice was not injurious to health. Moulds may occasionally cause digestive disturbance. Boiling the rice would prevent this, and rice is always boiled before eating.

James Gray, F.I.C., Analytical Chemist, Johannesburg, admitted that he had advised that "should this rice be cleaned, a sample quite fit for human con-"sumption would be obtained." Everyone who eats rice cleans it first, and even if boiled without washing the weevils would float to the top. Had found no moulds in the samples he examined.

John Patterson and J. R. Doig, with long and large commercial experience in regard to rice, said samples produced were quite up to the standard of coolie rice, and quite merchantable.

A. F. Cama, of Durban, testified to same effect, and said it was well known that Indians washed the rice at least three times before cooking it.

Israel Mahomed Barruk, a wholesale merchant in Durban for twenty years, said this rice was part of a consignment of 4,700 bags which he had imported. He sold it as brown rice. There was no other complaint.

The Court held that, in view of the evidence adduced, the rice was merchantable and of good commercial standard, that the Indian practice was to wash the rice several times before cooking it, that, therefore, the Court would not be justified in condemning the consignment, and the accused was not guilty.

WATER SUPPLY.

The various sources from which the town supply is drawn have been referred to in some detail in previous reports, and it is only necessary, therefore, to mention the more important circumstances which have occurred during the period under review.

The length of mains within the Municipal area is now 337·48 miles, no less than 36·30 miles having been added during 1911-12, while during the same period 810,703,200 gallons of water were supplied to consumers connected to same.

These figures show a very large increase over former years, and, as pointed out by the Chief Engineer of the Rand Water Board, in his Annual Report for the year ending 31st March, 1912, the demands on the Board for domestic and health requirements have increased by nearly 20 per cent., as compared with the demands during the year ending 31st March, 1911. At the same time, unfortunately, the sources of supply from Zwaartkopjes have decreased by 2·8 million gallons per day or 46·6 per cent. The maximum consumption by the Municipality on any one day was nearly 3¼ million gallons. The approximate quantity supplied per head per day during the year, based on the White population only, was 22 gallons, or 11 gallons when the whole population of the town is taken into consideration.

Reservoirs.—The draw-off from the Yeoville Reservoir has been very varied, and at times, when only a few inches of water have been left in the Reservoir, caused considerable anxiety.

It is understood that the Rand Water Board propose to get over the difficulty by laying a new 18-inch main to the Yeoville Reservoir from the Village Main Reef Pumping Station and erecting a pump capable of raising a further 3 million gallons per day.

The Council also intend raising the walls of the reservoir six feet, which will provide storage for an additional million gallons of water, making the total storage at the Yeoville Reservoir four million gallons. This work will shortly be put in hand and will, together with the provision of the additional pumping main, effect very considerable improvement.

Zuurbekom.—In the last report, reference was made to the additional supply of 2 million gallons per day which the Rand Water Board proposed to obtain from Zuurbekom. It was expected that this scheme would be completed by the end of 1911, but, owing to strikes in Europe and other unforeseen causes, it will probably not be in working order until the middle of September. The total quantity to be raised from Zuurbekom when the new scheme is completed will be about 4 to 4½ million gallons per day; and, while it is to be regretted that the town will not obtain the whole of its supply from this source, the Chief Engineer thinks that, roughly speaking, Johannesburg will get at least 2½ million gallons, instead of about 1½ as at present.

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.

In December, 1911, following heavy rains, a rapid rise of three feet occurred in the boreholes at "A," the water in consequence becoming considerably discoloured and necessitating warning notices again being issued.

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

It cannot, however, be said that up to the present finality has been reached with regard to the various methods and processes designed for the sterilisation of drinking water supplies. Possibly the work of Dr. Houston, of the Metropolitan Water Board, on what he terms "the Excess Lime Process" (referred to in his Eighth Report on Research Work), may be found applicable to the conditions existing in Johannesburg, and his further results will be awaited with interest.

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.

469 Samples of water were taken for examination during the year 1911-12, namely, 171 chemical and 298 bacteriological.

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, 1912, there were 77·18 miles of sewers completed, chiefly in the following districts:—Johannesburg (south of Railway), Braamfontein, Ferreiras, Fordsburg, and western portion of Marshallstown.

On the same date, 6,410 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, which is, in the opinion of the Medical Officer of Health, exceptionally good, was worked out by Mr. Councillor J. A. Moffat, and, as the result of experience, has since been improved in certain respects. Particulars are appended of the daily work done by each intake between 1st July, 1911, and 30th June, 1912:—

Intake at	Used since.	Approx. average quantities disposed of daily.			
		Nightsoil.	Urine.	Slopwater.	Clean water for Flushing purposes.
Main Compound	Nov. 14th, 1908 ...	5,700	1,600	21,200	20,000
Natal Spruit	Jan. 19th, 1909 ...	6,450	2,000	89,200	27,000
Springfield	May 25th, 1909 ...	3,450	1,200	—	8,500
Wolhuter	April 26th, 1909 ...	4,050	1,600	24,800	6,500
Shanks Street	August, 1907 ...	—	1,200	13,600	800
Gaol	Before the War	—	—	76,000	1,000
Ophirton	May 18th, 1908 ...	—	—	6,400	—
Bezuidenhout Valley ...	October 6th, 1911 ...	1,950	—	8,400	8,000
Totals		21,600	7,600	239,600	71,800

Total Gallonage daily—all kinds—340,600.

SEWAGE DISPOSAL.

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 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 million gallons. The estimated average daily infiltration of ground water to the sewers was about 200,000 gallons.

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, was appointed.

Attached is the Mine Sanitation Report for 1911-12:—

27th July, 1912.

The Medical Officer of Health,
Johannesburg.

Sir,

I have the honour to submit the following general statement regarding Mines Sanitation Inspection within the Municipal Area during the year ended the 30th June, 1912.

Surface Sanitation.—Careful and systematic mine-to-mine inspections continue to be carried out, and in this way detailed reports, dealing with the sanitary arrangements and conditions prevailing at the various mines, are regularly submitted to and dealt with by the Medical Officer of Health. These sanitary survey reports on the mining properties, emphasising as they do the good as well as the bad points, are, I believe, fully appreciated by Mine Managers, who realise thereby that their earnest endeavours in the direction of carrying out sanitary improvements, often at a considerable expenditure of money, are fully recognised, and, in consequence, any outstanding defects are invariably taken in hand at once, and remedied in accordance with the specified requirements of the Medical Officer of Health.

The work of inspection in connection with the maintenance of proper sanitary conditions at Kaffir Eating Houses, Mine Boarding Houses, etc., occupies a good deal of the time of your Inspectors, as there is a considerable number of these licensed premises on the mines.

Apart from the constant routine work of inspection and re-inspection, several special investigations and reports have been called for during the year by the Medical Officer of Health and Assistant Medical Officer of Health, and all notifications and complaints received from the Scavenging Department or the general public have been satisfactorily dealt with forthwith.

Underground Sanitation.—Underground inspections are undertaken on the same systematic lines as pertain to the surface, and the detailed reports submitted to the Medical Officer of Health and the Inspector of Mines show steady improvement in the underground sanitary conditions. Here again re-inspections reveal the fact that notices calling for abatement of nuisances and sanitary improvements generally meet with a ready response in the way of compliance. The introduction of special sanitary buckets, with close-fitting lids to prevent spillage during removal to the surface, is being gradually extended to all the mines.

As the Medical Officer of Health is aware, the work of mines sanitation inspection, both surface and underground, has increased considerably of late, and, moreover, continues to increase, owing to the opening up of the deeper level mines and the extension of the underground workings of the outcrops and deep levels. On this account, if the necessary and important work of mine-to-mine and house-to-house inspection is to continue to be carried out systematically at fairly regular and frequent intervals, an additional Inspector should be appointed to the mines, considering the large white and native population resident thereon.

M.O.H. 1911-12

Mines Sanitation. Slum Property.

In conclusion, I have to record the good work carried out energetically and faithfully during the year by the Assistant Mines Sanitation Inspector, Mr. R. Beattie.

I have the honour to be, Sir,

Your obedient servant,

ALEXANDER COWIE,

Mines Sanitation Inspector.

SLUM PROPERTY.

This matter is of much importance. Its circumstances and bearings in Johannesburg were discussed at some length in the Medical Officer of Health's Report 1909-11, and, as the position is unaltered, the observations made on that occasion are now reproduced.

There are in certain quarters of Johannesburg, especially in Fordsburg, Ferreirastown, Marshalls, City and Suburban, and Old Doornfontein, a considerable number of squalid dwellings which were mostly erected before the present By-laws came into force, are of very poor construction, dilapidated in condition and crowded on area. At the same time, if tested by considerations such as sufficiency of lighting, ventilation, water-tightness, closet accommodation and yard space, most of these places, in spite of their unsightly appearance and the other drawbacks already indicated, are of such a nature that it would be difficult to get from any Magistrate (even if the Council had the power to proceed in that way) an order for their closing, much less for their demolition.

Further, the fact has undoubtedly to be borne in mind that in calling upon these people to patch up and more or less to renovate these essentially undesirable dwellings, the Council would simply be prolonging the life of structures which, in the Medical Officer of Health's opinion, should be swept away. This statement is not, however, made in extenuation of any insanitary conditions which may exist or arise therein.

On the other hand, the fact that they are old and dilapidated induces a certain class of property owner to acquire and let them promiscuously at very remunerative rents to mean whites, coloured people and Asiatics, whose filthy habits make it a matter of very great difficulty to secure conditions of even passable cleanliness as regards yards, closets, etc. For instance, the Medical Officer of Health recently saw about noon a certain Armenian yard in Ferreirastown. About 8 a.m. on the same day this yard had been cleaned up in the presence of the Scavenging Overseer, and yet at noon it was in such a filthy condition as to justify prosecution of those responsible.

In the absence of adequate legal powers to deal with these conditions, no efficient steps are being, or can be, taken towards the eradication of such places.

The necessary measures would, however, include—

1. Legislation on the lines of Sections 17 and 18 of the Housing, Town Planning, etc., Act of 1909. Section 17 of this Act makes it the duty of every Local Authority to ascertain what dwelling-houses in its district are unfit for human habitation, and if on the representation of the Medical Officer of Health any dwelling-house appears to them to be in such a state, it becomes the duty of the Local Authority to make an Order prohibiting the use of the dwelling-house for human habitation until, in the judgment of the Local Authority, the dwelling-house is rendered fit for that purpose. Any owner aggrieved by such an Order may appeal to the Local Government Board within fourteen days of service of the notice. Section 18 provides that if a Closing Order has remained operative for a period of three months, the Local Authority must then take into consideration the question of demolition of the dwelling-house, and may, under certain specific conditions, order such demolition, the owner having the right of appeal as before to the Local Government Board.

It will be observed that in this matter the Local Authority is, subject to the Local Government Board, the sole judge as to the fitness or unfitness of such dwellings, and the Authority is not hampered by or dependent upon the decision of any Magistrate.

The Medical Officer of Health would point out that in drafting, in 1903, the Public Health By-laws, Chapter II., Section I., Article 4, para-

graph (1), he anticipated by six years this method and procedure under the Town Planning Act, but, unfortunately the By-law has been declared *ultra vires*.

Slum Property. Location. Government School. Licensed Places.

II. The establishment of conveniently situated Locations for Natives, Coloured people, and Asiatics. Upwards of 10,000 natives, other than domestic servants, are at present living on premises in town, some of which are owned or rented by their employers, whilst others are rented to them by third parties. During 1911-12 some 1,746 permits were given by the Medical Officer of Health, owing largely to the distance from town of the Klipspruit Location.

III. The power to compel Coloured people and Asiatics to live in such Locations.

This is a most important matter from the Public Health point of view, but the Medical Officer of Health understands that for high political reasons it is hopeless to expect to get it.

Incidentally, it may be stated that more than half of the dwellers in the Malay Location are Cape people, which indicates to some extent their willingness to live in such places.

PROPERTY CONDEMNED.—During the year under report, 75 premises, comprising 451 dwellings, were reported by the M.O.H. for closure under the Municipal (Private) Ordinance No. II. of 1906, Section 30, which was drafted and intended to deal with plague-infected premises. A test case is about to be brought before the Courts.

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.

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, 1911, to 30th June, 1912, 2,307 applications for licences of various kinds have been dealt with, the premises in question being in all cases carefully examined as to sanitary requirements.

	1911.12.		
	Granted.	Refused or not taken out.	Total.
1. Tea Shops, Eating Houses, Restaurants, etc. ...	675	24	699
2. Dairies	392	39	431
3. Butchers' Shops	327	20	347
4. Bakers	82	7	89
5. Kaffir Eating Houses	133	18	151
7. Laundries	100	7	107
8. Ice Creameries	218	2	220
9. Noxious or Offensive Trades ...	74	5	79
10. Asiatic Eating Houses	1	1	2
11. Aerated Water Factories	22	1	23
12. Hairdressers and Barbers	157	2	159
	2,181	126	2,307

ALLEGED UNHEALTHY PROPERTIES OF THE PLANE TREE.

On the 23rd October, 1911, in connection with the question of tree-planting in streets, the Superintendent of Parks brought to the notice of the Parks Committee the following statement (*from "Notes on the Riviera," by "C. C.," page 265, Second Edition, published by Bernard Quaritch, 15, Piccadilly, W., 1903*) regarding the plane tree:—

"The tree is not suited to a health resort. The hairs from the hanging "globular clusters of fruit are a serious drawback at certain seasons of the year. "the roads are lined with these, and whenever there is wind they are carried "into the eyes, nose and throat. There is no avoiding these spicules, and they "are peculiarly irritating.

"The plane is not only a source of great discomfort, but of actual danger "to those who suffer from the throat and lungs. The bark is said to be "poisonous."

The Parks Committee resolved that the Medical Officer of Health be asked to submit a report in connection with the matter.

Pursuant thereto, the Medical Officer of Health reported that he had no personal knowledge of the matter, and had, therefore, communicated with the following authorities:—

1. The Conservator of Forests, Union of South Africa.
2. The Curator, Royal Botanic Gardens, Kew, London.
3. The Professor of Botany and Agriculture, University College, Cork, Ireland.

The letter of the Union Conservator of Forests (Mr. Legat) is dated 27th November, 1911, and is to the following effect:—

"I have never before heard of the hairs on the fruit of the plane tree being "deleterious to health, but Messrs. Elwes and Henry, who are great arbori-"culturists, in a recent publication, state that the *stellate tomentum* which covers "the young leaves of planes is gradually cast off, and, floating in the air, has "been found in some parts of Europe to produce serious bronchial affections. No "complaints of this have ever been heard in England, though plane trees are "commonly planted in the streets of London.

"In Alsace Lorraine the planting of plane trees is forbidden in the vicinity "of schools, and workmen in nurseries on the Continent where young trees are "raised are often affected.

"As young trees do not usually bear fruit, this last would seem to indicate "that the author of the note you refer to is possibly mistaken in ascribing the "alleged noxious nature of the trees to the fruits.

"Plane trees are planted very largely in Paris and other Continental towns "and also in Madeira.

"The above are the only authentic records I have of plane trees being con-"sidered unhealthy."

The letter, dated 27th December, 1911, from the Curator (Mr. W. Watson), Royal Botanic Gardens, Kew, London, is as follows:—

"In reply to your inquiry as to the safety of the plane as a town tree, "I can only say that, while there may be some truth in the story of the harmful "properties of this tree, I do not think it need prevent its being planted in the "streets of Johannesburg, as proposed.

"As you no doubt are aware, the "London Plane" is by far the best of "all trees for towns, and you cannot do better than plant it in the streets of "Johannesburg for shade, etc."

The letters from the Professor of Botany and Agriculture (Major H. A. Cummins, M.D., C.M.G.), University College, Cork, are dated December 3rd, 1911, and February 17th, 1912, and are as follow:—

(1)

"With reference to your letter regarding the desirability or otherwise of "planting plane trees, we desire to say that in 'Baillon's Natural History of "Plants' it is stated that 'detrimental effects have been ascribed to the plane "trees through the introduction of the down that comes off the shoots in spring "or the long hairs accompanying the fruits into the air passages of man.'

"In the British Isles, as far as we are aware, no injurious effects have been "reported. We are making further inquiries, and hope to let you have further "information."

(2)

"We have been making further inquiries regarding the information you "desired in your letter of December 2nd, 1911, and, though in our English climate "the planes appear to cause no serious or noticeable inconvenience, this is not "the case in France, and probably in your drier climate matters would be much "worse.

"The hairs of the young leaf buds cause much irritation to workers in the "nurseries in the spring; and, besides this, in the autumn the ball-like masses "of fruit, in scattering seed, free hairs which irritate the lungs, and are apt to "do more damage when they contaminate merchandise, notably food, linen, etc.

"*Populus pyramidalis* and various elms (*ulmus montana* especially), planted "alternately, are suggested by our correspondent, who is a French authority on "town arboriculture; but, of course, it is hard to say how they will thrive with "you. *Ailanthus glandulosus* is a fine early tree in Europe, but, as the male "flowers stink, no trees should be planted out until they have flowered and proved "their feminity."

The Committee directed that an official letter of thanks be sent to each of the experts who kindly furnished the above-quoted information.

PROSECUTIONS.

Prosecutions. Scavenging. Street Sweeping.

180 persons were prosecuted for various breaches of the Sanitary Regulations; 153 were convicted, and fines aggregating £398 were imposed. Particulars are appended:—

By-laws Infringed.	Race of Accused.			Totals.
	Whites.	S.A. Coloured	Asiatics	
Prevention of Nuisances	43	1	3	47
Infectious Disease	—	—	15	15
Sale of Food and Drugs	14	—	—	14
Dairies and Milkshops	3	—	—	3
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	—	—	—	—
Farber's Shops	—	—	—	—
Native Location	—	96	—	96
Traffic By-laws	2	—	—	2
Totals	65	97	18	180
Results—				
Convicted and Fined	54	72	14	140
Convicted and Cautioned	4	9	—	13
Dismissed	5	13	—	18
Charge Withdrawn	2	3	4	9
Amount of Fines	£193 10 0	£106 5 0	£98 5 0	£398 0 0

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

Important prosecutions are conducted by the Council's solicitors, Messrs. Lance and Hoyle, to whose courtesy and help the Medical Officer of Health is much indebted.

SCAVENGING.

This matter is fully dealt with in the Annual Reports 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 9,308 mule loads were removed by 85 Scotch carts each month. The expenditure under this head for 1911-12 was £20,628 10s. 4d., but, subject to financial considerations, this service might with great advantage be considerably increased.

House-Refuse Removal and Disposal.

House Refuse Removal and Disposal. Carcase Removal.

House-refuse is removed in 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 Manager of the Scavenging Department, after considering various types of covered dustcart, prefers this tarpaulin arrangement, as it admits of the cart taking a larger load, and saves the considerable weight of a wooden cover.

An average of 714 Scotch cart-loads per day of house-refuse was collected; some of it was burnt at the destructors and some deposited at tips.

The Natal Spruit Destructor was closed down from the 1st February to the middle of May, 1912.

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.

Rubbish has also been deposited in excavations in Norwood, Ophirton, Lakeview, Village Deep, Forest Hill and Rosettenville. A new two-celled destructor of the "Meldrum" type was opened in Norwood on 31st July, 1911, for the service of the northern and north-eastern districts. Further destructors for both the southern and north-western suburbs will before long be necessary.

At times, for various reasons, including unavoidable shortage of natives, animals and plant, as well as lack of sufficient supervision, the refuse-removal service has left much to be desired.

This matter has, however, recently received very careful attention from the Public Health Committee. As stated at p. (*vide supra*), the Medical Officer of Health presented on March 11th, 1912, a Special Report on this subject, and the work of giving effect to the proposal adopted by the Health Committee was in active progress during the closing weeks of the year under review.

Action re *Norwood Destructor*.—In May, 1912, an action was commenced against the Council by a resident in the neighbourhood of the Norwood Destructor, who claimed £1,000 damages on account of depreciation of value of property, dust, smoke, smell, noise, and annoyance occasioned by the presence of some forty natives in the Destructor Compound. During the hearing of this action, in August and September, 1912, the following interesting points were raised in connection with Destructor practice:—(1) Whether the tipping platform should be wholly or partly covered in? (2) What method of charging should be employed, and what should be the thickness of the charge? (3) To what extent is the raking out of imperfectly consumed refuse unavoidable during clinkering and drawing? (4) What is the best method of dealing with clinker after it has been drawn, in order to prevent annoyance from smoke therefrom? (5) Should the clinker dumped be covered in? (6) Does the term "clinker" include ash, or is it confined to fused or vitrified matter only? (7) What should be the proportion of hard clinker to ash? (8) What should be the production of clinker *plus* ash to refuse burned? (9) What is the best method of removing dust from the destructor flues without causing offence? (10) What records should be kept as to temperature, quantity and character of refuse consumed, and proportion of CO_2 in flue gases? (11) Is it usual or advantageous to use an automatic CO_2 Recorder in connection with a destructor? (12) Should there be any material portion of unconsumed organic material, pieces of rag, paper, leather, etc., in the clinker dump? (13) Can dust from a clinker dump give rise to follicular tonsilitis or other illness? (14) Has the presence of a destructor any marked effect on the activity of bees in its neighbourhood?

Carcase Removal.

497 horses, mules, donkeys and foals, 1,673 pigs, 2,466 dogs and 180 cattle, 77 sheep and 3 ostrich carcases were removed, and either buried at the depositing sites or burned at the destructor.

Removal of Night Soil and Disinfection of Pails.

Removal of Night Soil Pails. Veterinary Branch.

The average number of pails removed per night for the twelve months ending 30th June, 1912, has been 15,875. Every pail, before being sent out, is washed, tested for leakage, dipped in boiling creosote in steamjacketed 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 1909-12:—

Year ended 30th June.	Service.	Cost.	Revenue.	Surplus.	Deficit.
		£	£	£	£
1909	Night Soil Service	73,264	161,045	87,781	—
	Refuse and Carcase ...	25,946	9,222	—	16,724
	Slop and Bathwater ...	47,961	2,156	—	45,805
	Total	147,171	172,423	25,252	—
1910	Night Soil Service	62,902	155,262	20,245	—
	Refuse and Carcase ...	27,690			
	Slop and Bathwater ...	44,425			
	Total	135,017	155,262	20,245	—
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	—

VETERINARY BRANCH.

From the 1st July, 1911, the whole of the Municipal veterinary duties were transferred to Mr. F. C. Gavin, M.R.C.V.S., Manager of the Scavenging Department.

In connection with this transfer, the Medical Officer of Health reported to the Public Health Committee on 23rd February, 1911, that placing this extra burden on the shoulders of the Manager of the Scavenging Department was, in the Medical Officer of Health's opinion, merely transferring the overload from one willing horse to another; and that the Manager of the Scavenging Department, a particularly competent official, had a task before him, in the scavenging of the town, which is of the first importance to the public health, and calls for a continuance of his best efforts, as the

M.O.H. 1911-12

Veterinary Branch. Expenditure. Staff.

diminution of cartage removal of slopwater and night soil in the centre of the town (owing to sewering) was fully counterbalanced by the needs of the rapidly extending suburbs.

EXPENDITURE OF PUBLIC HEALTH DEPARTMENT.

(This does not include Scavenging Expenditure.)

	1909-10.	1910.11.	1911-12.
Salaries	£11,925	£13,587	£13,603
Native Wages, Food and Passes ...	165	190	165
Locomotion	572	667	804
Miscellaneous Expenses	2,778	3,662	3,057
Cartage	376	602	401
Isolation Hospital	2,729	2,222	1,898
Disinfecting Station	463	324	420
Plague Expenditure	349	--	—
Rents, Rates and Insurance ...	116	126	186
Depreciation	42	261	42
Smallpox	—	—	1,056*
	£19,515	£21,661	£21,632

*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.	1904-6.	1906-9.	1909-10.	1910.11.	1911-12.
Chief Inspector	1	1	1	1	1	1
District Inspectors ...	16	17	14	15 (1 relief)	16 (1 relief)	16 (1 relief)
Native Constables with District Inspectors	16	3	2	3	2	2
White Constable	1	—	—	—	1	1
Mines Sanitation Inspector ...	—	1	2	2	2	2
Infectious Disease Inspector ...	—	2	2	2	2	2
Disinfecting Inspector ...	—	1	1	2	2	2
Licensing Inspector ...	1	1	—	—	—	—
Food Inspectors	2	1	1	1	1	2
Food Inspector at Kazerne ...	—	1	1	1	1	—
Ratcatchers	—	6	2	2	2	2
Slaughterhouse Inspector ...	1	1	1	1	—	—
Health Visitors	—	—	—	—	—	2

Of the 27 White Inspectors, 22 possess the certificate of the Royal Sanitary Institute.

It is, further, to be noted that since the British Occupation, 37,939 plans of new houses were approved to 30th June, 1912, and that the area of supervision during 1911-12 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.

II.—Number and Districts of District Sanitary Inspectors.—There are fifteen District Sanitary Inspectors, whose districts were, during 1911-12, 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, and especially for their ready, energetic and very successful assistance during the smallpox outbreak of January-February, 1912.

During the official year, 7,386 written notices were served by the inspectors in the course of their work.

The work of the Health Visitors is referred to at p. 11.

B.—Clerical Staff.—This consists of a chief clerk (Mr. F. Thompson), a typist-correspondent, a licensing clerk and an office boy. Apart from the usual statistical records of such an office (which in Johannesburg are laboriously increased by the necessity of differentiating between Whites, Natives, Eurafricans, and Asiatics), and attending to the complaints of a very sensitive public, no less than 6,656 letters—not including circulars and formal acknowledgments—were written during 1911-12. In addition, the whole of the clerical work required in connection with the issue of 1,746 permits for natives to live in town, with 2,307 applications for trading licences, and with 180 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 warm appreciation of their willing and effective assistance.

IMPORTANT MATTERS REQUIRING SPECIAL ATTENTION.

Matters requiring Council's attention.

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:—

1. The closing and demolition of Slum Property;
2. The satisfactory Housing of Natives;
3. 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.

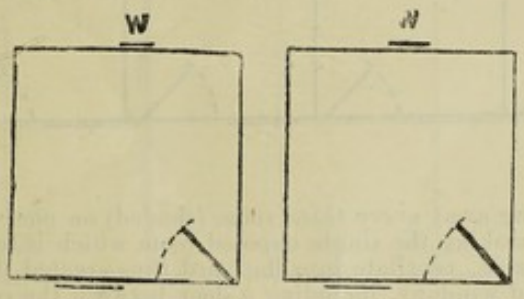
4*th November*, 1912.

MUNICIPAL COUNCIL OF JOHANNESBURG.

MEMORANDUM BY THE MEDICAL OFFICER OF HEALTH
ON THE
METHODS OF AMENDMENT OF ROOMS NOT PROVIDED WITH THROUGH OR DIAGONAL VENTILATION, AND OF ROWS OF BACK-TO-BACK ROOMS.

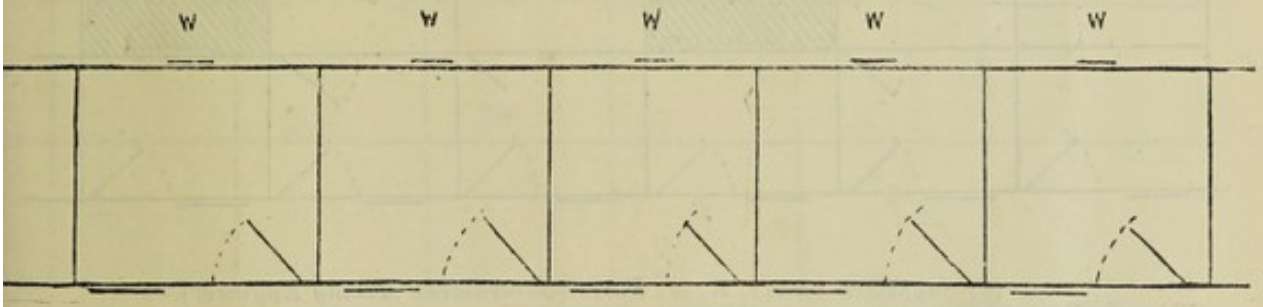
5th July, 1912.

I. Single Room, as used for watchmen's huts, builders' offices, etc. By providing in the wall opposite the door an opening window (W) of not less than two feet super. in size.



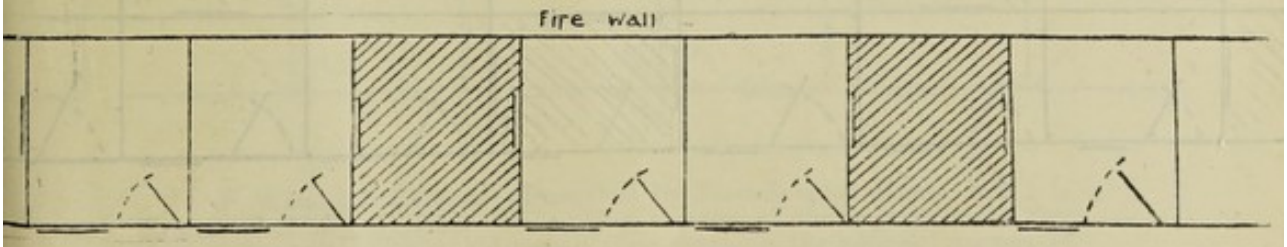
II. Single Rows of Rooms.—(1) Where the wall opposite the door is not a fire-wall and where the rooms have not been built up to the boundary of the stand on which they are situated:—

by fixing an opening window (W) of not less than two feet super. in the wall of each room opposite the door of that room.



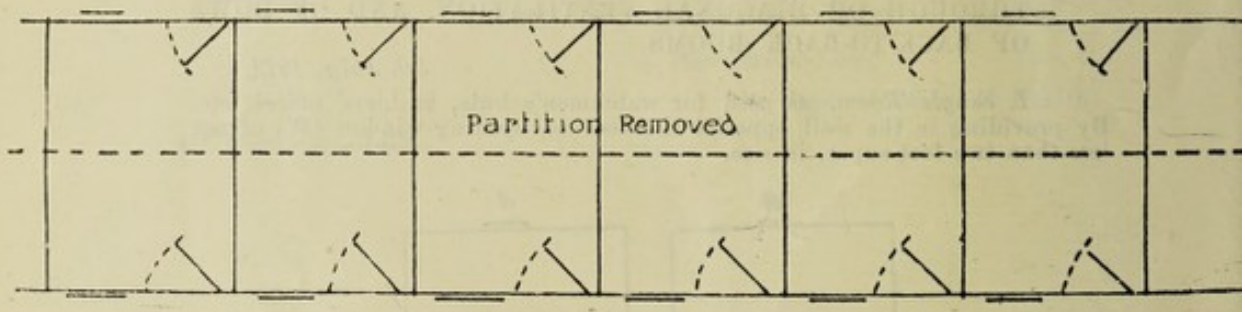
(2) Where the wall opposite the door is a fire-wall, or where the rooms are built up to the boundary of the stand on which they are situated:—

by doing away with every *third* room in the row, and making of the space which it occupied an open yard on to which the lateral wall of the room on each side opens by means of a window.

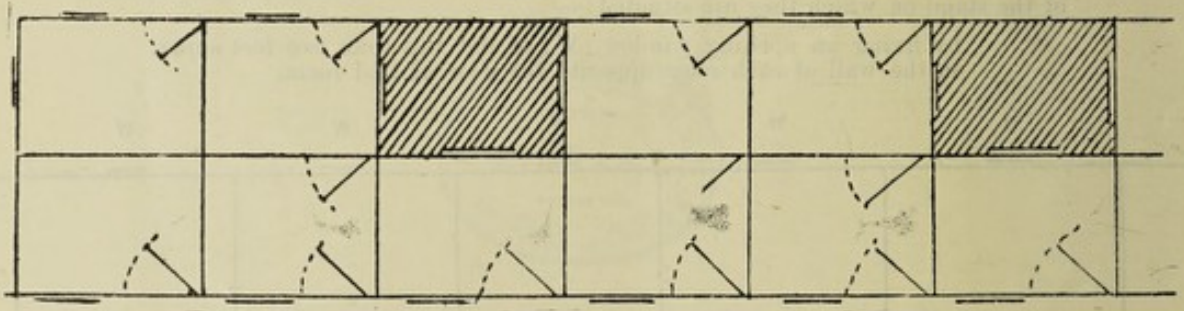


NOTE.—In rows of single rooms, the rooms at each end of the row can, of course, be easily provided with side or diagonal ventilation.

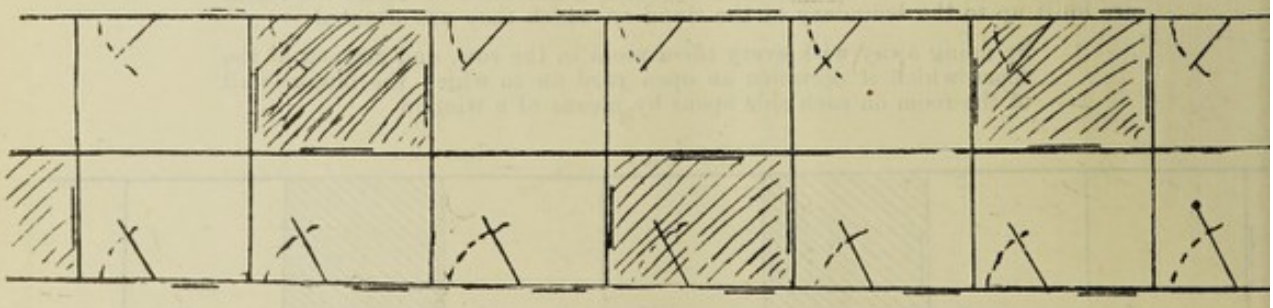
III. Rows of Back-to-back Rooms.—(1) By taking away the mesial partition which divides the component rooms of each back-to-back pair, these two rooms being thus converted into one large apartment, with a door and window front and back.



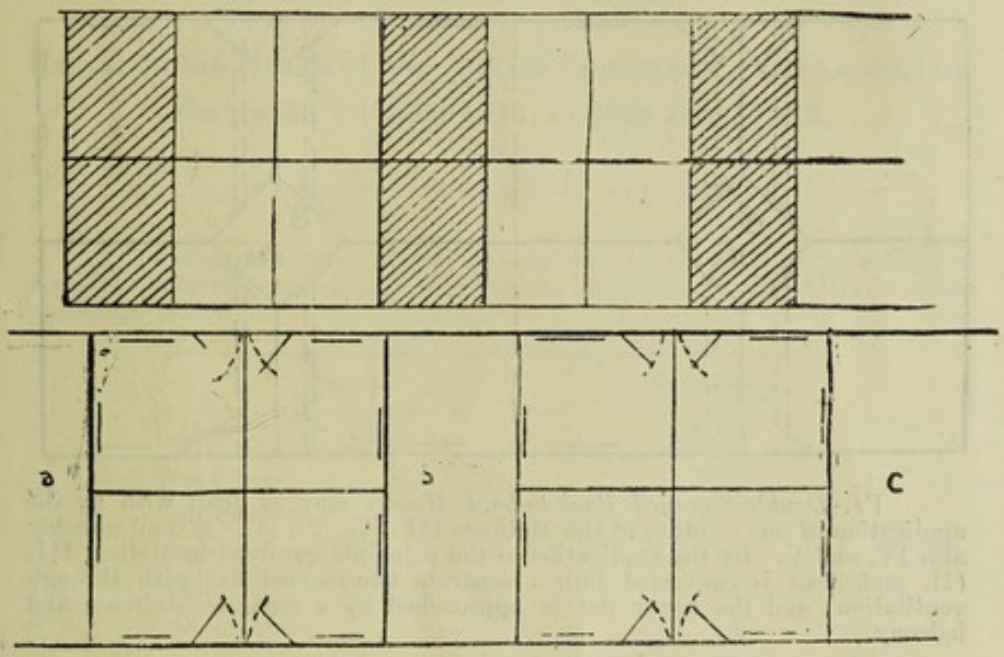
(2) By taking away every *third* room (shaded) on one side of the back-to-back row, and making the single opposed room which is left, and the pair of rooms on each side, ventilate into the yard thus created, by means of the necessary doors and windows, including a door between the component rooms of each lateral pair.



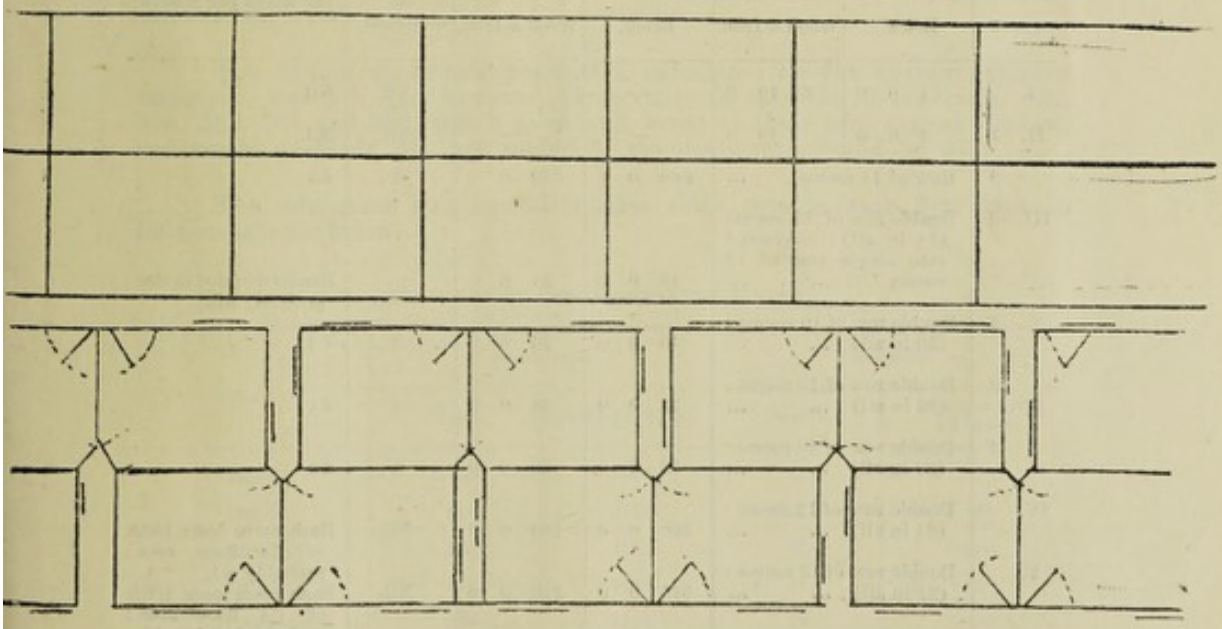
(3) *Suggested by Mr. R. N. Kotzé (Government Mining Engineer).*—By taking away every *fourth* room on each side.



(4) By taking away every *third* pair (shaded) of back-to-back rooms, and leaving the site occupied thereby as an open space into which the rooms on each side can open by means of windows diagonally opposite the door.



IV. Messrs. Baker and Fleming's Proposal.—By cutting off two feet from the width of every room, forming a four feet open-ended passage to give access to each pair of rooms.



V. Hamburg Method.—(Described by Fleet-Surgeon Hume, R.N., in *Lancet*, 13-9-1910, p. 505).—By sinking a series of shafts some eight feet square at points which would permit their reaching the adjacent corners of four rooms. Each room thus loses sixteen super. feet out of the corner, and

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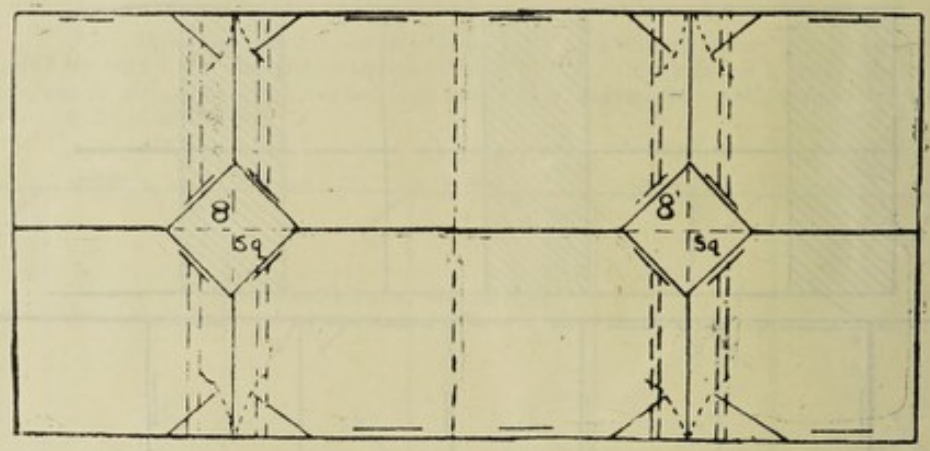
a wall is built up here with a window or door into the shaft to allow perflation. The floor of the shaft or small yard is provided with a grated opening and a drain passing therefrom underneath the floor to carry off rain which falls into the yard.



VI. Double-Storeyed Back-to-back Houses may be dealt with by the application of one or other of the Methods III. (1), (2), (3), (4), and possibly also IV. and V. By the application of the principle involved in Method III. (1), each floor is converted into a separate two-roomed flat with through ventilation; and the upper flat is approached by a separate staircase and balcony.

In the appended table, which has kindly been prepared by Mr. G. S. Burt Andrews, M.I.C.E., Town Engineer, Johannesburg, the cost of each method of alteration of single-storey dwellings is set out:—

		Per Room.		Per Set of Rooms.		No. of Rooms de-molished.	Loss of Rent Basis 20/- per Room per Month.
		Brick.	Wood & Iron.	Brick.	Wood & Iron.		
I.		£4 0 0	£3 10 0	—	—	Nil.	Nil.
II.	1	4 0 0	3 10 0	—	—	Nil.	Nil.
	2	Row of 11 rooms ...		£60 0 0	£40 0 0	-3	£3
III.	1	Double row of 12 rooms (24 in all): converted into single row of 12 rooms		48 0 0	24 0 0	—	Rooms doubled in size; probably nil.
	2	Double row of 10 rooms: (20 in all)		40 0 0	26 0 0	3	£3
	3	Double row of 10 rooms: (20 in all)		54 0 0	36 0 0	4	£4
	4	Double row of 10 rooms: (20 in all)		86 0 0	60 0 0	6	£6
IV.		Double row of 12 rooms: (24 in all)		360 0 0	180 0 0	Nil.	Each room loses 1/6th of its floor area: probably £4.
V.		Double row of 12 rooms: (24 in all)		345 0 0	210 0 0	Nil.	Each room loses 1/9th of its floor area: probably £2 13s. 4d.

CHARLES PORTER, M.D.,

Medical Officer of Health.

Report on the Health of the Natives Employed by the Council for the period 1st July, 1911, to 30th June, 1912.

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	1,785
Town Engineer	1,009
Light and Power	488
Tramways	287
Water	202
Parks and Estates	6
Other Departments	63
TOTAL...	3,840

The total number of admissions to hospital was 506, and the total deaths 23. The admissions represent an annual ratio of 131·7 on the average number employed.

The annual death-rate per 1,000, calculated on the average number employed, was 5·9. (If, however, three cases of tubercle of the lung, viz., Nos. 122, 265 and 396, which were sent home at their own urgent request, and would probably die, are included, the death-rate would be 6·7.)

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	439	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

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

CHIEF CAUSES OF DEATH.

Disease.	1904-5.	1905-6.	1906-7.	1907-8.	1908-9.	1909-10.	1910-11.	1911-12.	Total.
Pneumonia ...	12	20	22	8	5	5	15	11	98
Enteric Fever ...	21	6	29	12	3	3	5	6	85
Injuries ...	—	4	1	9	4	2	1	1	22
Tubercle of Lung and other parts ...	4	2	—	6	5	2	1	1	21
Dysentery ...	—	3	5	5	—	2	—	—	15
All Other Causes ...	6	6	9	4	2	4	8	4	43
Totals ...	43	41	66	44	19	18	30	23	284

Enteric fever, pneumonia, injuries and influenza have been responsible for the greatest number of admissions, and enteric fever 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 accompanying table.

I. GENERAL DISEASES.

Enteric Fever.

Appended are the statistical particulars of this disease:—

ENTERIC FEVER.

Year.	Admission.	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

There has been a marked increase in this disease, though fortunately the cases have been of a mild type.

The greatest number of cases occurred amongst the Scavenging natives, who, as pointed out in previous Reports, are always more or less exposed to the "occupation" risk. The largest number of cases occurred at Van Beek Street Compound, where it was thought the infection was largely conveyed by the agency of the latrines, which are close to the kitchen.

About the same time as the outbreak at Van Beek Street, cases occurred in the Tramway Quarters adjoining and in the Water Department's Compound across the road. A number of white cases also were notified from the locality, for which no satisfactory explanation was forthcoming. The summer was an unusually hot one, and there is a possibility that fly infection may have been partly responsible. It is hoped that before the next hot weather it will have been possible to give effect to the recommendation that the water carriage system should be extended to the localities and compounds affected.

For prophylactic purposes urotropin is now being administered to convalescent patients as a routine measure.

Tubercular Disease.

Thirteen admissions and one death occurred during the period under review. Of these, nine were due to tubercle of the lungs, the remainder to

Summary of Cases Admitted into the Native Hospital, 1st July, 1911, to 30th June, 1912.

No. in International Classification.	DISEASE.	Total.	Compounds From Which Admitted.													Results.					TOTAL.
			Main Compound.	Van Beek St.	Newlands.	Smit Street.		Barberton Destructor.	Natal Spruit.	Water Dept.	Tramways.	Light and Power.	Wolhuter.	Springfield.	All other Compounds.	Cured or Relieved.	Still Ill.	Transferred to other Hospital.	Discharged unfit or to Convalesce at Home.	Died.	
						T.E.	M.S.D														
1	Enteric Fever	77	13	23	—	9	2	—	2	9	10	1	4	—	4	52	5	—	14	6	77
1b	Simple Continued Fevers ...	15	—	3	—	5	—	—	—	3	—	1	3	—	—	14	—	—	1	—	15
4	Malaria	6	—	—	—	2	1	—	—	1	—	2	—	—	—	6	—	—	—	—	6
6	Measles	4	—	—	—	1	—	—	—	1	—	—	—	—	—	—	—	3	—	1	4
9	Diphtheria	1	1	—	—	—	—	—	—	—	—	—	—	—	—	1	—	—	—	—	1
10	Influenza	61	11	15	—	12	8	—	—	4	1	4	5	1	2	61	—	—	—	—	61
14	Dysentery	1	—	—	—	—	—	—	1	—	—	—	—	—	—	1	—	—	—	—	1
18	Erysipelas	1	—	—	—	1	—	—	—	—	—	—	—	—	—	1	—	—	—	—	1
19b	Chickenpox...	11	4	2	—	1	—	—	—	—	3	1	—	—	—	11	—	—	—	—	11
28	Tuberculosis of Lungs ...	9	1	1	—	2	—	—	1	—	1	2	—	1	—	1	—	—	7	1	9
34	Other Tubercular Diseases ...	4	—	3	—	1	—	—	—	—	—	—	—	—	—	2	—	—	2	—	4
37-38	Venereal	3	1	—	—	—	2	—	—	—	—	—	—	—	—	2	—	1	—	—	3
47-48	Rheumatism	14	2	3	—	3	1	—	—	—	1	2	—	2	—	13	1	—	—	—	14
73-74	Diseases of Nervous System ..	3	—	—	—	1	1	—	—	—	1	—	—	—	—	1	—	—	1	1	3
75	Diseases of Eye	4	2	—	—	1	1	—	—	—	—	—	—	—	—	4	—	—	—	—	4
76	Diseases of Ear	1	—	—	—	1	—	—	—	—	—	—	—	—	—	—	—	—	1	—	1
77 81	Diseases of Heart and Blood-vessels	3	1	—	—	1	—	—	—	—	—	1	—	—	—	1	—	—	2	—	3
89	Bronchitis	24	7	4	—	5	3	—	—	—	—	4	1	—	—	23	1	—	—	—	24
92	Pneumonia	75	15	15	—	15	8	—	3	7	5	2	—	3	2	59	2	—	3	11	75
93	Pleurisy	1	—	—	—	—	1	—	—	—	—	—	—	—	—	1	—	—	—	—	1
98	Silicosis	6	2	1	—	2	—	—	—	—	—	—	—	—	1	5	—	—	—	1	6
100	Tonsillitis... ...	15	4	2	—	4	2	1	—	—	1	1	—	—	—	15	—	—	—	—	15
103	Gastritis and other Disorders of Digestion	12	1	1	—	3	3	—	—	2	—	1	—	—	1	12	—	—	—	—	12
105	Diarrhœa	5	1	1	—	1	—	—	—	—	—	—	—	2	—	4	—	—	1	—	5
106-7	Diseases due to Animal Parasites	3	—	2	1	—	—	—	—	—	—	—	—	—	—	3	—	—	—	—	3
110	Diseases of the Intestines ...	1	1	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	1	1
144	Inflammation of Connective Tissues	3	2	1	—	—	—	—	—	—	—	—	—	—	—	3	—	—	—	—	3
144	Abscesses	4	4	—	—	—	—	—	—	—	—	—	—	—	—	4	—	—	—	—	4
145	Diseases of Skin	2	—	1	—	—	—	—	—	—	—	—	—	1	—	2	—	—	—	—	2
147	Diseases of Joints	2	1	—	—	1	—	—	—	—	—	—	—	—	—	2	—	—	—	—	2
166-186	Injuries and Burns	68	13	9	—	9	12	—	7	2	5	2	4	4	1	59	—	2	6	1	68
189	Ill-defined & Minor Ailments	35	6	4	—	5	8	—	6	—	1	2	1	1	1	32	—	—	3	—	35
189a	Debility	2	1	1	—	—	—	—	—	—	—	—	—	—	—	1	—	—	1	—	2
	All Other Causes	30	2	6	—	9	8	—	—	2	1	—	1	1	—	27	3	—	—	—	30
	TOTALS	506	96	98	1	95	61	1	20	31	30	28	17	16	12	423	12	6	42	23	506

tubercle of other parts of the body. Three of the cases of tubercle of the lungs which were sent home at their own urgent request would probably not have lived for any length of time, and reference has been made to these in estimating the annual death-rate. Two of these cases, who came from Smit Street, were brothers living in the same room, and it seemed possible that one may have infected the other.

II. LOCAL DISEASES.

Diseases of the Respiratory System.

There were 106 admissions and 12 deaths. The admissions include:—

Bronchitis	24
Pneumonia	75
Pleurisy	1
Silicosis	6

The deaths, with the exception of one due to silicosis, were all caused by pneumonia.

Pneumonia.

Pneumonia still accounts for the largest number of deaths. During 1911-12, nearly half the total mortality was due to this disease.

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

PNEUMONIA.

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

III. MINOR AILMENTS.

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

IV. GENERAL AND SANITARY CIRCUMSTANCES.

In previous Reports, more detailed remarks have been made on the various diseases, but the figures for one year only are now under review, and as in drawing conclusions it is always an advantage to have as large a number of cases as possible on which to base deductions, no further comments are at present submitted.

A Report has recently been made on the condition of the Municipal Compounds, and it is unnecessary again to enter into details. It is hoped, however, that where possible the recommendations then made will be given effect to as soon as possible.

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