Medical Officer's annual report [to] Durban Corporation.

Contributors

Durban (South Africa). Public Health Department.

Publication/Creation

[Durban] : [The Corporation], [1912]

Persistent URL

https://wellcomecollection.org/works/wchja78n

DURBAN CORPORATION

MEDICAL OFFICER'S

REPORT

FOR THE

Municipal Year ended 31st July, 1912.

DURBAN:
P. Davis & Sons, Printers, West and Savills Streets.
1912.

MEDICAL OFFICER'S REPORT

Municipal Buildings,
Town Hall, Durban.
1st August, 1912.

To His Worship the Mayor
and Councillors of the Borough of Durban.

Gentlemen,—

I have the honour to submit to you the Annual Report of the Health and Sanitary Conditions of the Borough of Durban for the year ended 31st July, 1912.

I have the honour to be, Gentlemen,
Your obedient Servant,
P. MURISON, M.D., B.Sc., D.P.H.,
Medical Officer of Health.

VITAL STATISTICS.—POPULATION.

A Government Census of the population of the South African Union was made in May, 1911. As the results of this Census of the population as regards Durban, had not come to hand at the time of writing last year's report I had to submit an estimate of population on which to base calculations of Birth Rates, Death Rates, etc. I regret that owing to the non-arrival in time for this year's report of anything more than summaries from the Census Commissioner, I have to estimate what that population of Durban was likely to have been at the middle of our Municipal Year.

The estimated population of the Borough of Durban, Municipal Year 1911-12, is:—

Europeans	33,600
Coloured	2,800
Natives	18,400
Indians	17,500
Total	72,300

From the summaries to hand it appears that the term "Coloured," as used by the Census Commissioner, includes not only what are usually known as Mauritians, St. Helenas, and Cape Coloured, but also our entire Indian population, the Chinese and Japanese, and in fact any person not falling under the headings of European or Native.

However suitable such a classification may be for the other Provinces it is obviously unsuitable for Natal where such a well-defined race as Indians forms such a large group of the inhabitants.

It is therefore necessary to wait until the complete census returns are available before we are in a position to deal with vital statistics accurately.

As these returns will be two and a half years old by the time the next Annual Report is framed, I would suggest the return to an annual census enumeration of the Borough by the Chief Constable. In my opinion the best date for taking this census would be in the first week in March.

BIRTHS.

Regarding this subject a condition of affairs is revealed that is hardly credible. The register of births shows that a less number of births of infants whose parents are domiciled in the Borough has been registered during the past year than for many years previously. In order to eliminate the possibility of error the register has been carefully checked, and the result has been to show that during the past Municipal Year 883 births were registered, giving a birth-rate of 24.3, as compared with 27.7 per 1,000 for the previous year. It should be noticed in this connection that births of infants taking place in Durban, of which the parents are not domiciled in the Borough, are not included in the above return. Of such births there were 147.

An additional check was afforded by obtaining the number of infants under one year in Durban on the night of the Government census, which was found to have been 746. This total we were informed includes any infants under one year in the Harbour and Shipping.

It would therefore appear that the returns as obtained from the register of births may be regarded as substantially correct.

BIRTHS.

1.—TABLE SHOWING MONTHLY DISTRIBUTION OF ALL BIRTHS FOR RACE AND SEX, 1911-12.

Months.	Males.			Females.			Totals.		
	Europeans	Natives	Asiatics	Europeans	Natives	Asiatics	Europeans	Natives	Asiatics
1911									
August ...	46	0	22	35	1	16	81	1	38
September ...	42	3	24	38	2	15	80	5	39
October ...	51	1	28	40	0	25	91	1	53
November ...	49	3	23	29	0	21	78	3	44
December ...	34	1	20	41	1	19	75	2	39
1912									
January ...	35	1	34	51	2	22	86	3	56
February ...	44	2	34	32	2	34	76	4	68
March	38	1	30	36	0	29	74	1	59
April	59	4	24	55	5	11	114	9	35
May	51	4	20	41	4	26	92	8	46
June	41	6	30	41	3	14	82	9	44
July	54	2	31	47	6	22	101	8	53
Totals ...	544	28	320	486	26	254	1,030	54	574

2.—TABLE OF BIRTHS OCCURRING AMONGST NON-RESIDENTS IN MONTHS.

1809-10	53
1910-11	69
1911-12	147

Aug.		Sept.		Oct.		Nov.		Dec.		Jan.		Feb.		Mar.		April.		May.		June.		July.		Total.	
M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F
4	3	4	2	7	3	7	6	1	0	1	9	5	3	7	4	8	17	4	11	8	6	15	11	71	76

European Birth Rate (gross)	28.3 per 1,000
European Birth Rate (corrected) for non-residents	24.3 per 1,000
Indian Birth Rate	32.8 per 1,000
Birth Rate, England and Wales, 1911	24.4 per 1,000

The small number of births of Natives occurring in Durban prohibits the stating of any Birth Rate for that population.

3.—TABLE SHOWING TOTAL REGISTERED EUROPEAN BIRTHS AND BIRTH RATES FOR THE PAST SEVEN YEARS.

	1906	1907	1908	1909	1910	1911	**1912**	**1912**
No of Births	1089	968	971	919	907	952	1030	883
Birth Rate	33 2	30·7	33·3	31·4	28·5	27·7	28·3	24·3 (Corrected

4.—TABLE SHOWING LEGITIMATE AND ILLEGITIMATE BIRTHS, EXCLUDING IMPORTED BIRTHS, 1911-12.

	Males.	Females.	Total.
Legitimate	464	403	867
Illegitimate	10	6	16
Totals	474	409	883

MARRIAGES CONTRACTED IN DURBAN BOROUGH, 1911-12.

During the past Municipal Year 519 European marriages were contracted in Durban. The following table shows the distribution as to domicile of contracting parties:—

Of whom one party domiciled in Durban.		Of whom both parties domiciled in Durban.		Of whom neither party domiciled in Durban.	
M.	F.	M.	F.	M.	F.
20	52	423	423	24	24

Gross Marriage Rate for Durban ... ... 14.3 per 1,000.
Corrected Marriage Rate for Borough ... ... 13.6 per 1,000.

DEATHS.

1.—TABLE SHOWING RACE AND SEX DISTRIBUTION OF DEATHS DURING THE PAST YEAR.

Race.	Male.	Female.	Total.
European	217	145	362
Native	81	29	110
Asiatic	182	114	296
Totals	480	288	768

2.—AGE DISTRIBUTION OF DEATHS (EUROPEANS).

	Male.	Female.	Total.
Under 1 year	53	34	87
1— 5 years	17	12	29
5—10 ,, ...	6	7	13
10—15 ,, ...	—	3	3
15—20 ,, ...	3	1	4
20—25 ,, ...	4	5	9
25—35 ,, ...	14	10	24
35—45 ,, ...	34	18	52
45—55 ,, ...	25	11	36
55—65 ,, ...	16	15	31
65—75 ,, ...	23	9	32
75—85 ,, ...	17	12	29
85 and over	5	8	13
Totals	217	145	362

This table shows that, roughly speaking, during the past year, of the total deaths in the Borough, one death out of four was that of an infant under 12 months. Further that one death out of every three deaths occurring was that of a child under 5 years.

3.—TABLE SHOWING CHIEF STATISTICS OF DEATHS OF ALL RACES IN THE BOROUGH DURING THE PAST FIVE YEARS.

Race.	1907-08	1908-09	1909-10	1910-11	1911-12
European ...	280	254	210	301	362
Native ...	154	120	88	109	110
Asiatic ...	459	316	274	305	296
Totals ...	893	690	572	715	768
European rate per 1,000 ...	9.7	8.7	6.6	8.7	9.9
Native do.	9.8	7.5	5.3	6.1	6.0
Asiatic do.	29.0	21.0	17.0	17.9	16.9

4.—TABLE FOR COMPARISON SHOWING RECORDED DEATH RATES PER 1,000 IN ENGLAND AND WALES IN 1911.

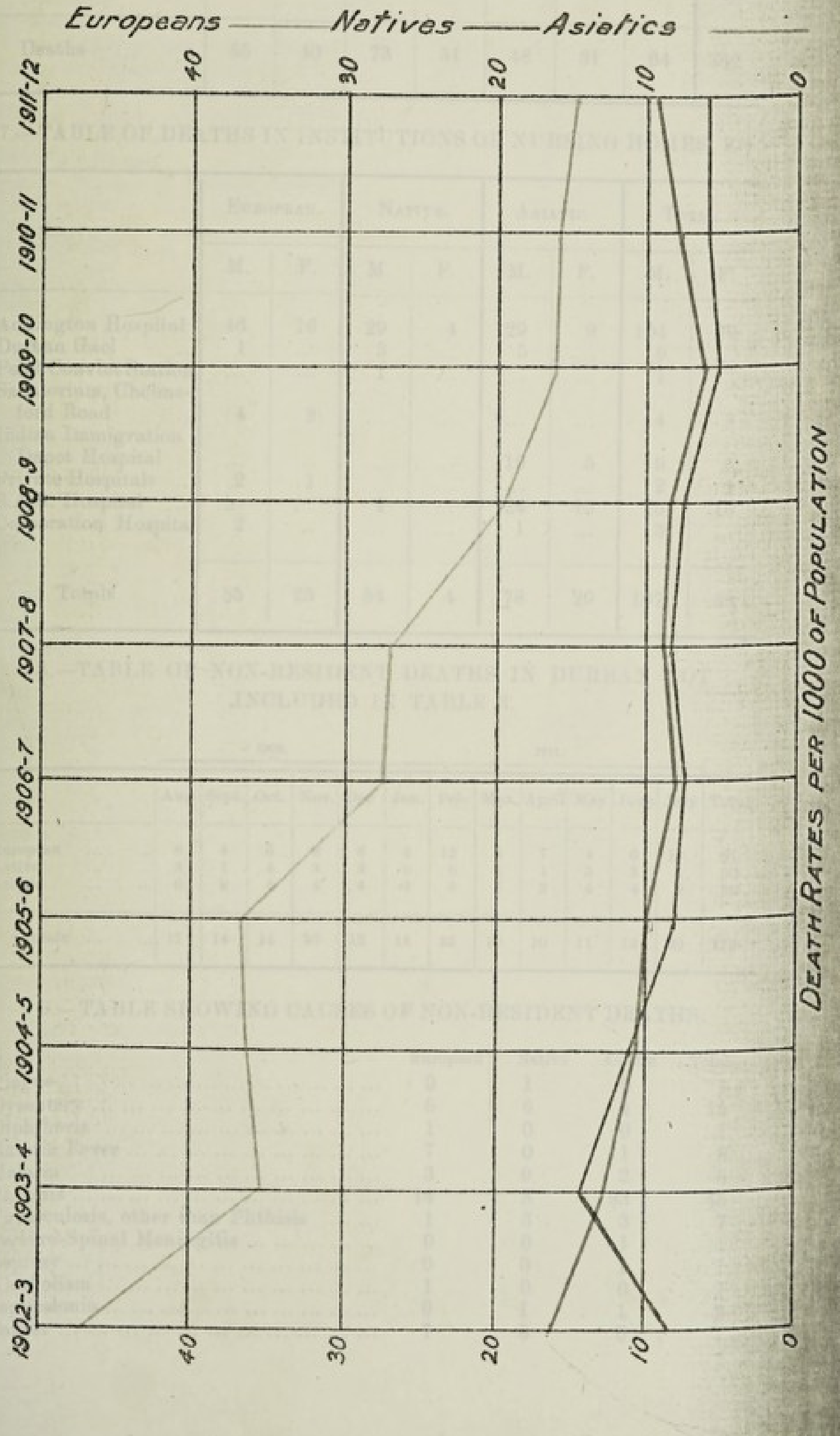
England and Wales	14.6	per 1,000 of pop.
77 Great Towns	15.5	,,
136 Small Towns	13.8	,,
England and Wales, less the 213 Towns	13.9	,,

5.—TABLE SHOWING MONTHLY DISTRIBUTION OF DEATHS AMONGST RESIDENTS (EUROPEANS), 1911-12.

Months.	Males.	Females.	Total.
1911.			
August	21	15	36
September ..	12	7	19
October	25	16	41
November ..	15	17	32
December ...	16	17	33
1912.			
January ...	25	13	38
February	16	10	26
March	21	8	29
April	15	9	24
May	9	13	22
June	15	8	23
July	27	12	39
Totals ...	217	145	362

CHART 1.

Chart showing Death Rate of the different Races during the past ten years:—



6.—TABLE SHOWING WARD DISTRIBUTION OF EUROPEAN DEATHS, 1911-12.

Ward	1	2	3	4	5	6	7	Total
Deaths	55	40	73	51	48	31	64	362

7.—TABLE OF DEATHS IN INSTITUTIONS OR NURSING HOMES, Etc.

	European.		Native.		Asiatic.		Total.	
	M.	F.	M.	F.	M.	F.	M.	F.
Addington Hospital	46	16	29	4	29	9	104	29
Durban Gaol ..	1	...	3	...	5	...	9	...
Point Convict Station	...	...	1	...	...	...	1	...
Sanatorium, Chelmsford Road ...	4	8	...	...	...	...	4	8
Indian Immigration Depot Hospital ...	...	...	...	...	19	5	19	5
Private Hospitals ...	2	1	...	...	...	...	2	1
S.A.R. Hospital ...	...	. .	1	...	24	15	25	15
Corporation Hospital	2	..	...	...	1	...	3	...
Totals ...	55	25	34	4	78	29	167	58

8.—TABLE OF NON-RESIDENT DEATHS IN DURBAN NOT INCLUDED IN TABLE 3.

	1910.					1911.							
	Aug.	Sept.	Oct.	Nov.	Dec	Jan.	Feb.	Mar.	April	May	June	July	Total
European	8	4	6	9	6	5	12	4	7	4	6	10	81
Native	3	1	4	3	3	6	6	1	1	3	3	1	35
Asiatic	6	9	4	4	4	3	5	5	2	4	4	9	59
Totals	17	14	14	16	13	14	23	10	10	11	13	20	175

9.—TABLE SHOWING CAUSES OF NON-RESIDENT DEATHS.

	European	Native	Asiatic	Total.
Plague	0	1	0	1
Dysentery	5	6	4	15
Diphtheria	1	0	0	1
Enteric Fever	7	0	1	8
Malaria	3	0	2	5
Phthisis	14	8	23	45
Tuberculosis, other than Phthisis	1	3	3	7
Cerebro-Spinal Meningitis	0	0	1	1
Leprosy	0	0	1	1
Alcoholism	1	0	0	1
Septicaemia	0	1	1	2
Cancer	7	0	0	7

	European	Native.	Asiatic.	Total.
Old Age … … … … … … … … … … … … …	0	0	2	2
Diseases of Nervous System … … … … …	1	0	1	2
Apoplexy … … … … … … … … … … … … …	3	1	1	5
Diseases of Heart and Circulatory System	12	2	2	16
Pneumonia … … … … … … … … … … … …	3	2	3	8
Bronchitis … … … … … … … … … … … …	1	2	1	4
Other Diseases Respiratory System … …	0	1	0	1
Diarrhœa, Enteritis, Catarrh … … … …	10	1	3	14
Diseases of Liver … … … … … … … … …	3	2	0	5
Other Diseases, Alimentary Track … …	2	1	0	3
Acute Nephritis … … … … … … … … …	1	0	0	1
Bright's Disease … … … … … … … … …	1	1	3	5
Other Diseases of Urinary System … …	0	0	1	1
Accident … … … … … … … … … … … … …	3	1	3	7
Suicide … … … … … … … … … … … … …	1	0	0	1
Ill-defined Causes … … … … … … … …	0	2	2	4
Totals … … … … … … … …	81	35	59	175

CHART 2.

Table of Columns showing the European Monthly Deaths for past five years :—

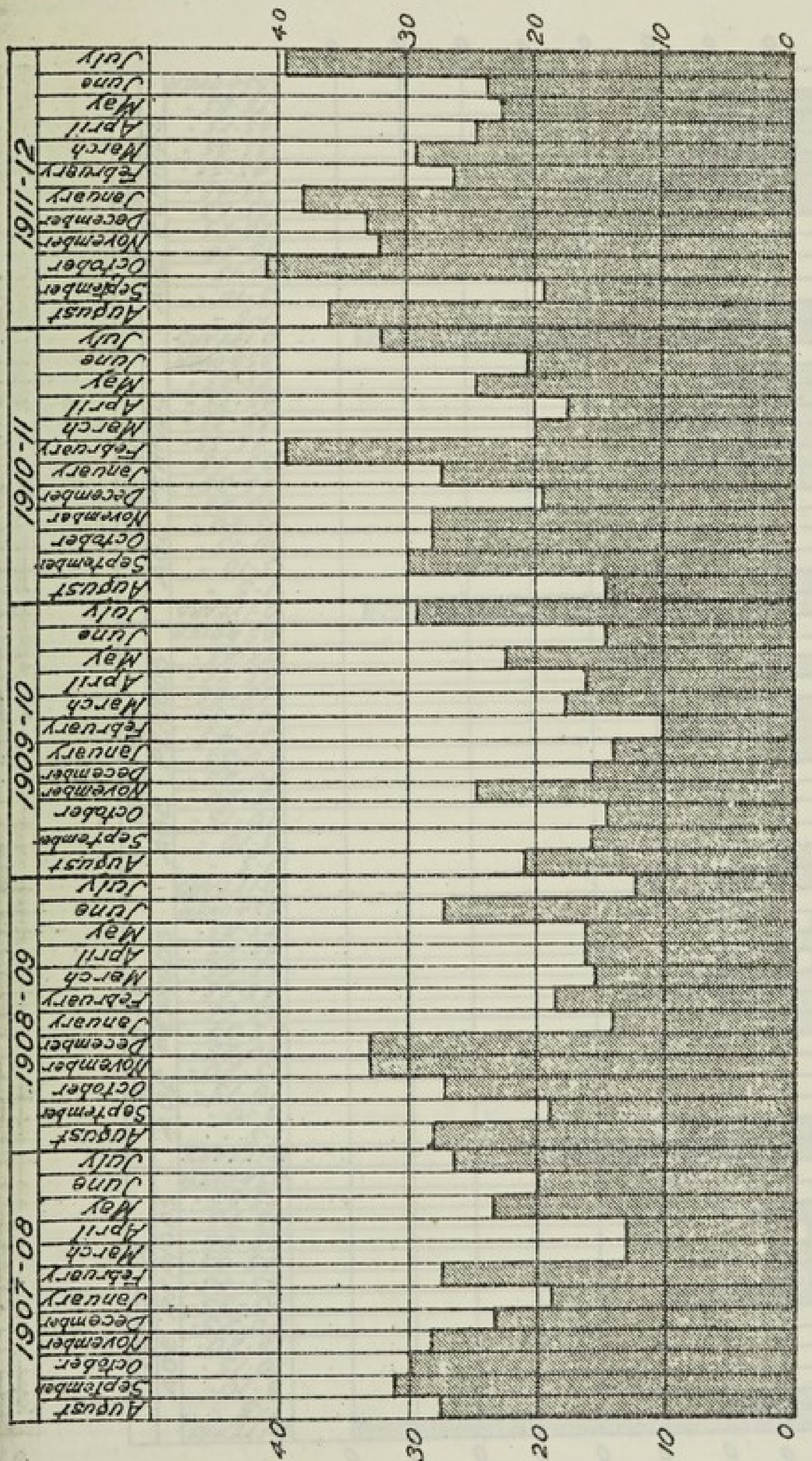
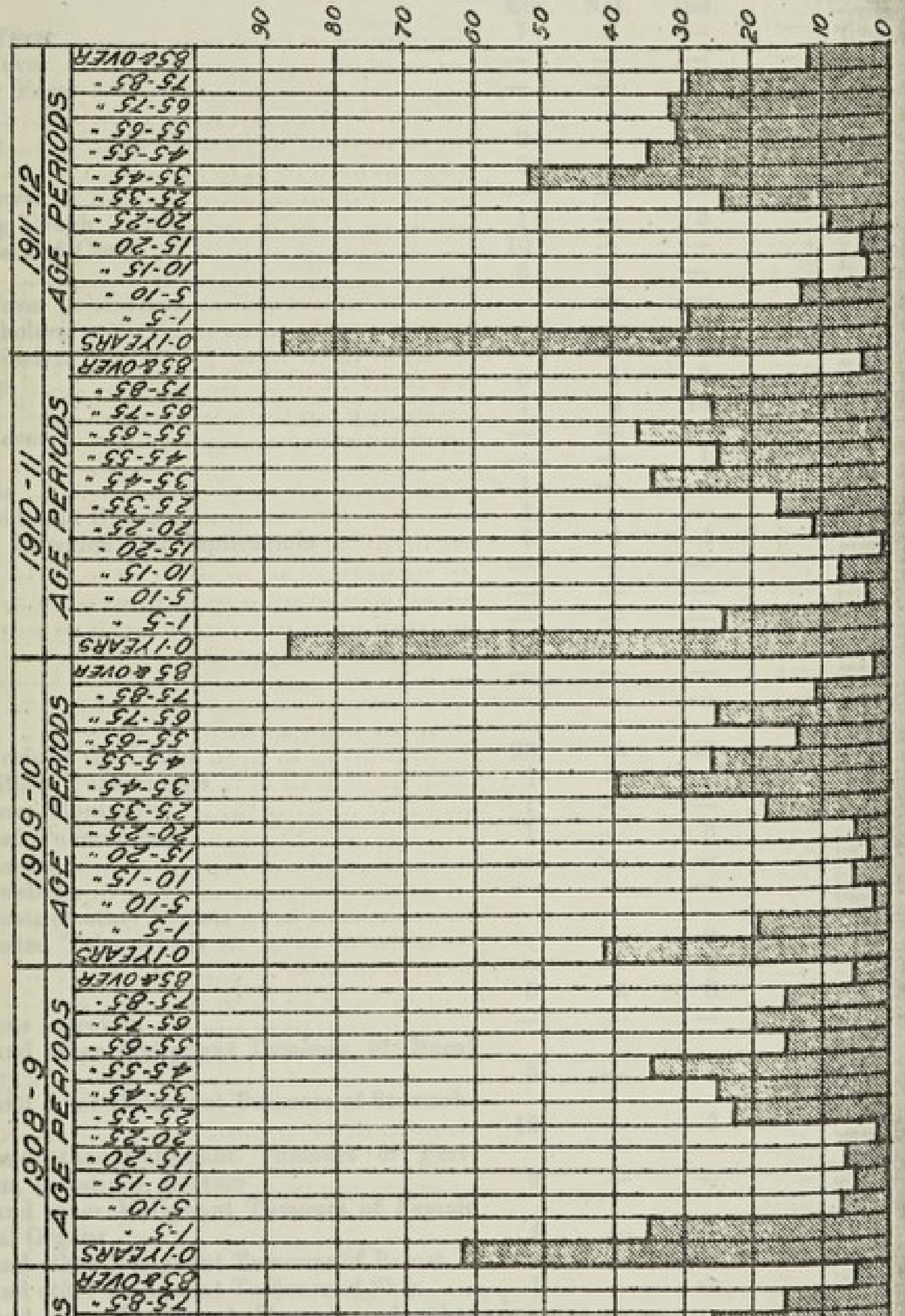


CHART 3.

Table of Columns showing the European Total Deaths occurring at various ages during the past five years:—



CLASSIFICATION OF DEATHS.

Deaths classified according to the International Classification of Causes of Sickness and Death:—

		Eur.	Nat.	Ind.
1.	Typhoid Fever	7	3	—
2.	Typhus Fever	—	—	—
3.	Relapsing Fever	—	—	—
4.	Malaria	—	1	—
5.	Small-pox	2	—	1
6.	Measles	5	—	—
7.	Scarlet Fever	—	—	—
8.	Whooping Cough	1	—	2
9.	Diphtheria and Croup	10	—	—
10.	Influenza	5	—	—
11.	Biliary Fever	—	—	—
12.	Asiatic Cholera	—	—	—
13.	Cholera Nostras	—	—	—
14.	Dysentery	5	5	3
15.	Plague	1	6	15
16.	Yellow Fever	—	—	—
17.	Leprosy	—	—	1
18.	Erysipelas	1	—	—
19.	Other Epidemic Diseases	1	—	—
20.	Purulent Infection and Septicaemia	1	1	4
21.	Glanders	—	—	—
22.	Anthrax	—	—	—
23.	Rabies	—	—	—
24.	Tetanus	3	2	1
25.	Mycoses	—	—	—
26.	Pellagra	—	—	—
27.	Beri-beri	—	—	—
28.	Tuberculosis of the Lungs	23	5	49
29.	Acute Miliary Tuberculosis	1	—	—
30.	Tuberculous Meningitis	1	—	—
31.	Abdominal Tuberculosis	1	—	3
32.	Pott's Disease	—	—	—
33.	White Swelling	—	—	—
34.	Tuberculosis of other Organs	—	—	—
35.	Dessiminated Tuberculosis	—	—	2
36.	Rickets	—	—	1
37.	Syphilis	0	6	3
38.	Gonococcus Infection	—	—	—
39.	Cancer and other Malignant Tumours of Bucal Cavity	3	—	1
40.	Cancer and other Malignant Tumours of Stomach, Liver	10	—	3
41.	Cancer and other Malignant Tumours of Peritoneum, Intestines, Rectum	3	—	—
42.	Cancer and other Malignant Tumours of Female Genital Organs	4	—	—
43.	Cancer and other Malignant Tumours of Breast	—	—	—
44.	Cancer and other Malignant Tumours of Skin	1	—	—
45.	Cancer and other Malignant Tumours of other Organs and of Organs not specified	1	—	—
46.	Other Tumours (Tumours of Female Genital Organs excepted)	—	—	1
47.	Acute Articular Rheumatism	1	—	—
48.	Chronic Rheumatism and Gout	—	—	—
49.	Scurvy	—	1	—
50.	Diabetes	5	—	2
51.	Xophthalmic Goitre	—	—	—
52.	Addison's Disease	—	—	—
53.	Leucaemia	—	—	—

		Eur.	Nat.	Ind.
54.	Anaemia, Chlorosis	1	—	2
55.	Other General Diseases	—	—	—
56.	Alcoholism (Acute or Chronic)	2	—	—
57.	Chronic Lead Poisoning	—	—	—
58.	Other Chronic Occupation Poisonings	—	—	—
59.	Other Chronic Poisonings	—	—	—
60.	Encephalitis	—	—	—
61.	Simple Meningitis	3	2	2
61a.	(Including Cerebrospinal Fever)	—	1	—
62.	Locomotor Ataxia	—	—	—
63.	Other Diseases of Spinal Cord	5	—	2
64.	Cerebral Hæmorrhage, Apoplexy	16	—	2
65.	Softening of Brain	1	—	—
66.	Paralysis without specified cause	—	—	2
67.	General Paralysis of Insane	—	—	—
67.	Other Forms Mental Alienation	2	—	—
69.	Epilepsy	—	—	—
70.	Convulsions (Non-Puerperal)	—	—	—
71.	Convulsions of Infants	5	1	6
72.	Chorea	—	—	—
73.	Neuralgia and Neuritis	—	—	—
74.	Other Diseases of Nervous System	—	—	—
75.	Diseases of Eyes and their Annexa	—	—	—
76.	Diseases of the Ears	1	2	—
77.	Pericarditis	1	1	—
78.	Acute Endocarditis	1	—	—
79.	Organic Diseases of Heart	38	3	5
80.	Angina Pectoris	1	—	—
81.	Diseases of Arteries, Atheroma, Aneurysm, etc.	3	2	1
82.	Embolism and Thrombosis	1	—	—
83.	Diseases of Veins (Varices, Hæmorrhoids, Phlebitis, etc.	—	1	—
84.	Diseases of Lymphatic System (Lymphangitis, etc.)	—	—	—
85.	Hæmorrhage; Other Diseases of Circulatory System	1	1	1
86.	Diseases of Nasal Fossae	—	—	—
87.	Diseases of Larynx	1	—	—
88.	Diseases of Thyroid Body	1	—	—
89.	Acute Bronchitis	3	4	8
90.	Chronic Bronchitis	4	1	10
91.	Broncho-Pneumonia	8	4	10
92.	Pneumonia	3	16	23
93.	Pleurisy	—	—	—
94.	Pulmonary Congestion, Pulmonary Apoplexy	—	2	—
95.	Gangrene of the Lung	—	—	—
96.	Asthma	2	—	2
97.	Pulmonary Emphysema	—	—	1
98.	Other Diseases of Respiratory System (Tuberculosis excepted)	2	—	—
99.	Diseases of Mouth and Annexa	3	—	—
100.	Diseases of Pharynx	—	—	—
101.	Diseases of Œsophagus	—	—	
102.	Ulcer of Stomach	1	—	1
103.	Other Diseases of Stomach (Cancer excepted)	1	—	1
104.	Diarrhœa and Enteritis (under 2 years)	52	10	20
105.	Diarrhœa and Enteritis (over 2 years)	6	4	27
106.	Ankylostomiasis	—	—	—
107.	Intestinal Parasites	1	—	3
108.	Appendicitis and Typhlitis	3	—	—
109.	Hernias, Intestinal Obstructions	4	1	1
110.	Diseases of the Intestines	1	—	—
111.	Acute Yellow Atrophy of the Liver	—	—	—
112.	Hydatid Tumour of Liver	—	—	—
113.	Cirrhosis of Liver	2	—	2

		Eur.	Nat.	Ind.
114.	Biliary Calculi	1	—	—
115.	Other Diseases of Liver	1	—	1
116.	Diseases of the Spleen	—	—	1
117.	Simple Peritonitis (Non-Puerperal)	2	—	2
118.	Other Diseases of Digestive System (Cancer and Tuberculosis excepted)	1	—	—
118a.	Abscess of Liver	3	—	1
119.	Acute Nephritis	2		1
120.	Bright's Disease	14	3	4
121.	Chyluria	—	—	—
122.	Other Diseases of Kidneys and Annexa	—	—	—
123.	Calculi of Urinary Passages	1	—	—
124.	Diseases of Bladder	2	—	—
125.	Diseases of the Urethra, Urinary Abscess, etc.	—	—	—
126.	Diseases of Prostate	2	—	—
127.	Non-Venereal Diseases of Male Genital Organs	—	—	—
128.	Uterine Hæmorrhage (Non-Puerperal)	—	—	—
129.	Uterine Tumour (Non-Cancerous)	—	—	—
130.	Other Diseases of Uterus	—	—	—
131.	Cysts and other Tumours of Ovary	—	—	1
132.	Salpingitis and other Diseases of Female Genital Organs	—	—	—
133.	Non-Puerperal Diseases of Breast (Cancer excepted)	—	—	—
134.	Accidents of Pregnancy	—	—	—
135.	Puerperal Hæmorrhage	—	—	—
136.	Other Accidents of Labour	1	—	—
137.	Puerperal Septicæmia	1	—	4
138.	Puerperal Albuminuria and Convulsions	1	—	—
139.	Puerperal Phlegmasia Alba Dolens, Embolus, Sudden Death	1	—	—
140.	Following Child-Birth (not otherwise defined)	—	—	1
141.	Puerperal Diseases of Breast	—	—	—
142.	Gangrene	—	—	1
143.	Furuncle	—	—	—
144.	Acute Abscess	—	—	—
145.	Other Diseases of Skin and Annexa	1	—	—
146.	Diseases of Bones (Tuberculosis excepted)	—	—	—
147.	Diseases of the Joints (Tuberculosis and Rheumatism excepted)	—	—	—
148.	Amputations	—	—	—
149.	Other Diseases of Organs of Locomotion	—	—	—
150.	Congenital Malformations (Still-Births not included)	4	1	1
151.	Congenital Debility, Icterus and Sclerema	12	3	16
152.	Other Diseases peculiar to Early Infancy	—	—	2
153.	Lack of Care	—	—	—
154.	Senility	10	1	4
155.	Suicide by Poison	2	—	—
156.	Suicide by Asphyxia	—	—	—
157.	Suicide by Hanging or Strangulation	—	1	2
158.	Suicide by Drowning	—	—	—
159.	Suicide by Firearms	2	—	—
160.	Suicide by Cutting or Piercing Instruments	1	—	1
161.	Suicide by Jumping from High Places	—	—	—
162.	Suicide by Crushing	—	—	—
163.	Other Suicides	—	—	—
164.	Poisoning by Food	—	—	—
165.	Other Acute Poisonings	—	—	—
166.	Conflagration	—	—	—
167.	Burns (Conflagration excepted)	—	1	8
168.	Absorption of Deleterious Gases (Conflagration excepted)	—	—	1
169.	Accidental Drowning	5	1	1

		Eur.	Nat.	Ind.
170.	Traumatism by Firearms	1	1	—
171.	Traumatism by Cutting or Piercing Instruments	—	—	—
172.	Traumatism by Fall	1	—	—
173.	Traumatism in Mines and Quarries	—	—	—
174.	Traumatism by Machines	—	—	—
175.	Traumatism by other Crushing (Vehicles, Railways, Landslides, etc.)	4	—	—
176.	Injuries by Animals	—	1	—
177.	Starvation	—	—	—
178.	Excessive Cold	—	—	—
179.	Effects of Heat	1	—	3
180.	Lightning	—	—	—
181.	Electricity (Lightning excepted)	—	—	—
182.	Homicide by Firearms	—	1	—
183.	Homicide by Cutting or Piercing Instruments	—	1	—
184.	Homicide by other means	—	1	—
185.	Fractures (cause not specified)	1	5	2
186.	Other External Violence	—	—	—
187.	Ill-defined Organic Disease	—	—	—
188.	Sudden Death	1	—	—
189.	Cause of Death not specified or ill-defined	7	3	11
	Totals	362	110	296

EUROPEAN DEATHS—ARRANGED ACCORDING TO MONTHS AND CERTAIN DISEASES

Diseases.	August.	September.	October.	November.	December.	January.	February.	March.	April.	May.	June.	July.	Total 1911-12.	Total 1910-11
1. Plague	0	0	0	0	0	0	1	0	0	0	0	0	1	0
2. Smallpox	0	0	0	0	0	0	0	0	0	0	1	1	2	0
3. Dysentery	0	1	1	0	0	1	0	1	0	0	1	0	5	9
4 Enteric Fever	1	1	0	0	0	1	0	1	1	1	0	1	7	3
5. Diphtheria	2	1	3	0	0	1	0	1	1	1	0	0	10	2
6. Scarlet Fever	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7. Measles	3	1	1	0	0	0	0	0	0	0	0	0	5	2
8. Whooping Cough	0	1	0	0	0	0	0	0	0	0	0	0	1	1
9. Tetanus	0	2	0	0	0	0	0	0	0	0	0	1	3	1
10. Malaria	0	0	0	0	0	0	0	0	0	0	0	0	0	9
11. Venereal Diseases ...	0	0	0	0	0	0	0	0	0	0	0	0	0	2
12. Puerperal Fever	0	0	0	0	1	0	0	0	0	0	0	0	1	3
13. Septic Diseases	1	0	0	0	0	0	0	0	0	0	0	0	1	0
14. Phthisis	4	1	0	3	2	2	0	0	3	4	2	2	23	18
15. Other Forms of Tuberculosis ...	0	0	0	0	0	0	0	0	0	2	1	0	3	3
16. Other Infectious Diseases ...	0	0	0	0	0	1	0	1	0	0	0	0	2	8
17. Influenza	1	0	0	0	0	2	0	1	1	0	0	0	5	0
18. Cancer	3	2	3	2	1	3	2	0	1	2	2	1	22	23
19. Diseases of Birth and Development	2	3	1	1	1	1	3	1	3	0	0	0	16	20
20. Old Age	1	0	2	0	0	3	0	1	1	1	0	1	10	8
21. Diseases of Nervous System ...	6	0	2	3	2	3	3	8	1	2	0	2	32	27
22. Diseases of Heart and Circulatory System	3	1	6	3	4	2	5	1	5	2	7	8	47	31
23. Pneumonia	1	0	3	1	0	0	0	1	2	0	1	2	11	18
24. Bronchitis	0	1	0	2	0	0	0	0	1	0	0	3	7	7
25. Other Diseases Respiratory System	0	0	1	1	1	1	0	1	0	1	0	0	6	1
26. Diarrhœa, Catarrh, Enteritis ...	2	3	7	9	13	6	6	3	0	1	4	4	58	57
27. Other Diseases of Liver and Alimentary Track ...	2	1	4	2	3	1	1	3	1	1	2	3	24	13
28. Diseases of Urinary System ...	1	0	4	1	2	4	0	1	3	1	1	3	21	21
29. Diseases of Child-Birth ...	0	0	0	1	1	0	0	0	0	0	0	1	3	1
30. Diseases of Reproductive System	0	0	0	0	0	0	0	0	0	0	0	0	0	2
31. Accidents	1	0	2	0	2	0	1	1	2	1	0	5	13	13
32. Homicide	0	0	0	0	0	0	0	0	0	0	0	0	0	0
33. Suicide	0	0	1	0	0	2	0	2	0	0	0	0	5	3
34. Execution	0	0	0	0	0	0	0	0	0	0	0	0	0	0
35. All other Causes	2	0	0	3	0	4	4	1	0	2	1	1	18	4
TOTALS	36	19	41	32	33	38	26	29	24	22	23	39	362	301

1.—NATIVE DEATHS ARRANGED ACCORDING TO MONTHS AND CERTAIN DISEASES.

Diseases.	August	September	October	November	December	January	February	March	April	May	June	July	Total 1911-12	Total 1910-11
1. Plague	0	0	0	0	0	0	3	1	0	1	1	0	6	0
2. Small Pox	0	0	0	0	0	0	0	0	0	0	0	0	0	0
3. Dysentery	1	0	0	1	2	0	0	1	0	0	0	0	5	8
4. Enteric Fever	0	0	1	0	0	0	2	0	0	0	0	0	3	1
5. Diphtheria	0	0	0	0	0	0	0	0	0	0	0	0	0	0
6. Scarlet Fever	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7. Measles ...	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8. Whooping Cough	0	0	0	0	0	0	0	0	0	0	0	0	0	0
9. Tetanus	2	0	0	0	0	0	0	0	0	0	0	0	2	1
10. Malaria	0	0	0	0	0	0	0	0	0	1	0	0	1	0
11. Venereal Disease	1	1	0	0	0	1	1	0	1	0	0	1	6	6
12. Puerperal Fever	0	0	0	0	0	0	0	0	0	0	0	0	0	0
13. Septic Diseases ...	0	0	0	0	0	0	1	0	0	0	C	0	1	0
14. Phthisis	1	0	1	1	0	0	0	0	0	0	1	1	5	2
15. Other forms of Tuberculosis ...	0	0	0	0	0	0	0	0	0	0	0	0	0	5
16. Other Infectious Diseases ...	0	0	0	0	0	0	0	0	0	0	0	0	0	0
17. Influenza	0	0	0	0	0	0	0	0	0	0	0	0	0	0
18. Cancer	0	0	0	0	0	0	0	0	0	0	0	0	0	1
19. Diseases of Birth and Development	1	0	0	0	1	0	0	0	0	0	2	0	4	1
20. Old Age	0	0	0	0	0	1	0	0	0	0	0	0	1	1
21. Diseases of Nervous System ...	0	0	0	0	0	0	1	0	1	0	2	0	4	3
22. Dis. of Heart & Circulatory System	0	0	1	1	0	1	1	1	1	1	0	1	8	4
23. Pneumonia	4	1	1	2	3	1	1	3	1	1	2	0	20	26
24. Bronchitis	2	0	0	1	0	0	0	1	0	0	0	1	5	4
25. Other Dis. of Respiratory System	0	0	1	0	0	0	0	0	0	1	0	0	2	0
26. Diarrhœa, Catarrh, Enteritis ...	1	1	1	3	3	1	1	2	1	0	0	0	14	15
27. Other Dis. of Liver and Alimentary Track	0	0	0	0	0	0	0	0	0	1	0	0	1	2
28. Diseases of Urinary System ...	0	0	2	0	0	0	1	0	0	0	0	0	3	1
29. Diseases of Child Birth ...	0	0	0	0	0	0	0	0	0	0	0	0	0	0
30. Diseases of Reproductive System...	0	0	0	0	0	0	0	0	0	0	0	0	0	0
31. Accident	2	0	0	1	1	1	0	0	0	3	0	1	9	14
32. Homicide...	0	0	0	0	0	0	0	1	1	1	0	0	3	1
33. Suicide	0	0	0	0	0	0	0	1	0	0	0	0	1	1
34. Execution	0	0	0	0	0	0	0	0	0	0	0	0	0	0
35. All Other Causes	0	0	0	0	1	1	0	0	0	0	2	2	6	0
Totals	15	3	8	10	11	7	12	10	6	10	10	7	110	97

ASIATIC DEATHS ARRANGED ACCORDING TO MONTHS AND CERTAIN DISEASES.

	Diseases.	August	September	October	November	December	January.	February	March	April	May	June	July	Total, 1911-12.	Total, 1910-11.
1.	Plague	0	0	0	0	0	1	3	7	2	2	0	0	15	0
2.	Small Pox	0	0	0	0	0	0	0	0	0	1	0	0	1	0
3.	Dysentery	1	1	0	0	0	1	0	0	0	0	0	0	3	6
4.	Enteric Fever	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5.	Diphtheria	0	0	0	0	0	0	0	0	0	0	0	0	0	1
6.	Scarlet Fever	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7.	Measles	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8.	Whooping Cough	1	0	0	0	0	0	0	0	0	0	1	0	2	0
9.	Tetanus	0	0	1	0	0	0	0	0	0	0	0	0	1	5
10.	Malaria	0	0	0	0	0	0	0	0	0	0	0	0	0	1
11.	Venereal Disease	0	0	0	0	0	0	0	2	0	1	0	0	3	7
12.	Puerperal Fever	0	0	1	0	0	0	0	2	0	0	1	0	4	2
13	Septic Diseases	0	1	0	0	2	1	0	0	0	0	0	0	4	3
14.	Phthisis	4	4	1	5	6	2	4	4	5	4	9	1	49	25
15.	Other forms of Tuberculosis ...	0	0	0	1	1	0	0	0	2	1	0	0	5	3
16.	Other Infectious Diseases ...	0	0	0	0	0	0	0	0	0	0	0	0	0	1
17.	Influenza	0	0	0	0	0	0	0	0	0	0	0	0	0	2
18.	Cancer	0	0	0	2	1	0	0	0	0	1	0	1	5	1
19.	Diseases of Birth and Development	1	6	0	2	1	0	0	2	3	2	1	1	19	14
20.	Old Age	0	2	0	0	0	0	0	1	1	0	0	0	4	4
21.	Diseases of Nervous System ...	1	0	1	0	2	3	3	0	2	0	1	1	14	11
22.	Dis. of Heart and Circulatory System	3	0	0	0	1	0	0	1	1	0	0	1	7	17
23.	Pneumonia	3	2	2	2	4	4	3	4	0	1	3	5	33	37
24.	Bronchitis	3	1	2	0	1	3	1	3	0	2	0	2	16	24
25.	Other Dis. of Respiratory System	0	0	1	1	0	0	0	1	0	0	0	0	3	3
26.	Diarrhœa, Catarrh, Enteritis...	0	3	6	9	3	6	5	3	4	3	1	4	47	59
27.	Other Diseases of Liver and Alimentary Track ...	2	1	0	2	2	3	0	2	0	1	1	2	16	8
28.	Diseases of Urinary System ...	0	0	2	1	0	0	1	1	0	1	0	0	6	2
29.	Diseases of Child-Birth ...	0	0	0	0	0	0	0	1	0	0	0	0	1	5
30.	Dis. of Reproductive System ...	0	0	0	0	0	0	0	0	0	0	0	0	0	1
31.	Accidents	2	4	0	0	2	1	1	1	1	0	2	1	15	19
32.	Homicide	0	0	0	0	0	0	0	0	0	0	0	0	0	1
33.	Suicide	0	0	0	0	0	0	0	0	2	0	1	0	3	0
34.	Execution	0	0	0	0	0	0	0	0	0	0	0	0	0	0
35.	All other Causes	1	1	2	3	1	2	0	2	1	0	1	3	17	7
36.	Leprosy	0	0	0	1	0	0	0	0	0	0	0	0	1	0
	Totals ...	22	23	19	29	27	27	21	37	24	20	22	22	296	261

COMPARATIVE TABLE OF DEATHS RESULTING FROM PHTHISIS, PNEUMONIA, AND DIARRHŒAL DISEASES, 1911-12.

DISEASE.	EUROPEANS.																												ASIATICS.						NATIVES.						GRAND TOTAL.	
	0-1		1 5		5-10		10-15		15-20		20 25		25-35		35-45		45-55		55-65		65-75		75-85		85 & over		Total.		Child-ren.		Adults.		Total.		Child-ren.		Adults.		Total.		All Races.	
	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F
Phthisis	0	0	0	0	0	0	0	0	1	0	0	2	5	2	[illegible]	1	3	1	1	1	0	0	0	0	0	0	16	7	0	0	39	10	39	10	0	1	4	0	4	1	59	18
Pneumonia	4	2	2	1	0	0	0	0	0	0	0	0	0	0	1	0	1	0	0	0	0	1	0	0	0	0	8	4	12	8	8	5	20	13	5	8	7	0	12	8	40	25
Diarrhœal Diseases ...	30	15	4	5	0	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	34	24	12	22	12	1	24	23	8	4	1	1	9	5	67	52

INFANTILE MORTALITY.

	Male.	Female.	Total.
Infantile Deaths during 1911-12	53	34	87

Registered Births	883
Infantile Deaths	87

This equals 98.5 infantile deaths per 1,000 births, and represents the "Infantile Mortality Figure" for Durban, 1911-12.

The following table shows the Infantile Mortality figure for England and Wales during 1911:—

All England and Wales	130
77 Great Towns	140
136 Smaller Towns	133
England and Wales, less these 213 Towns ...	118

TABLE I.—INFANTILE DEATHS GROUPED ACCORDING TO AGES IN WEEKS AND MONTHS.

	Under 1 Week	1-2 Weeks	2-3 Weeks	3-4 Weeks	Total under 1 month	1-2 Months	2-3 Months	3-4 Months	4-5 Months	5-6 Months	6-7 Months	7-8 Months	8-9 Months	9-10 Months	10-11 Months	11-12 Months	Total under 1 year
Deaths	12	4	3	2	21	6	9	5	4	10	5	5	2	7	7	6	87
Previous Year	18	6	3	2	29	4	6	3	9	9	4	6	5	4	4	3	86

TABLE 2.—INFANTILE DEATHS GROUPED ACCORDING TO MONTHLY INCIDENCES.

	1911					1912							
Months	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	April	May	June	July	Total
Deaths	7	9	12	14	9	8	8	3	6	1	3	7	87
Previous Year	4	11	12	7	7	10	10	6	4	4	3	8	86

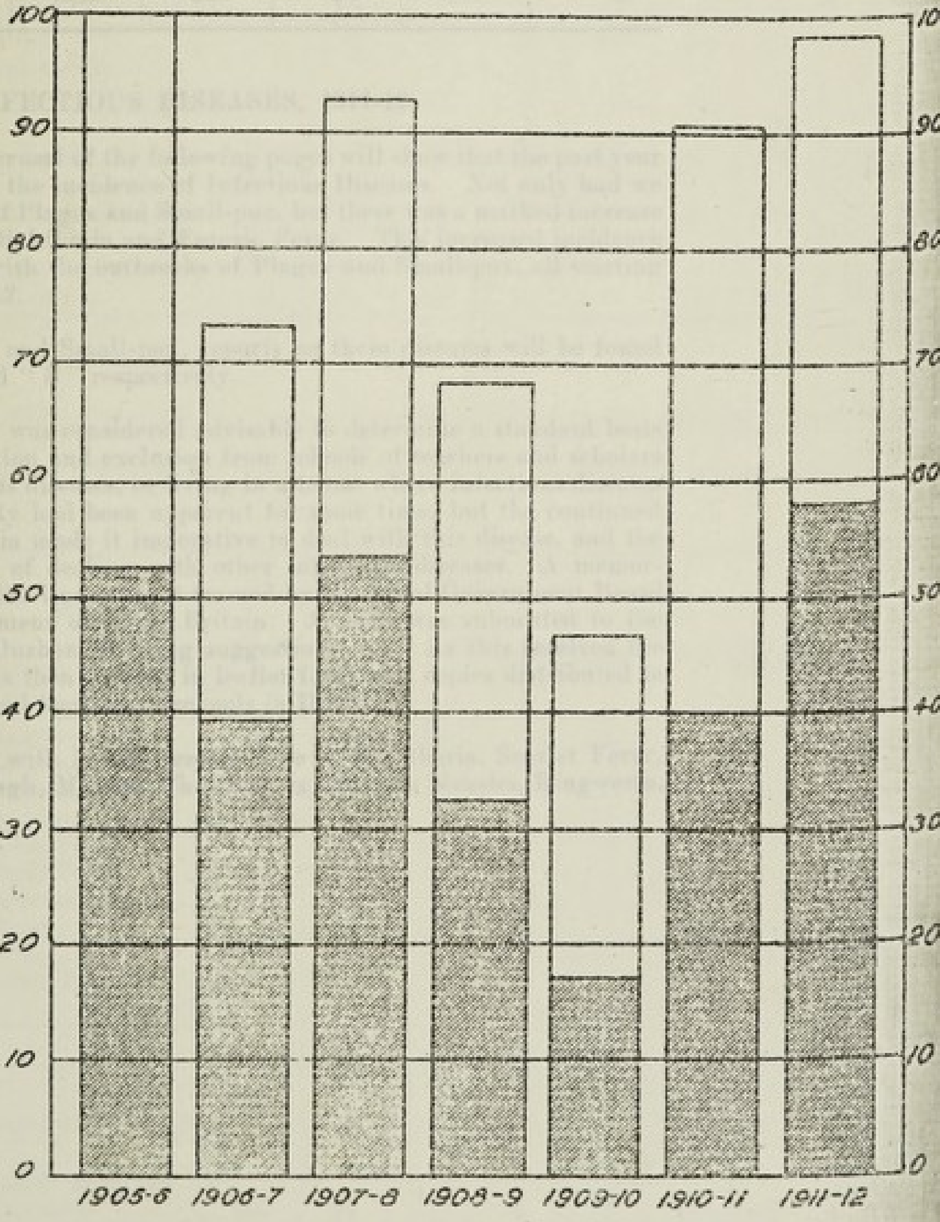
TABLE 3.—MONTHLY DISTRIBUTION OF SOME OF THE MORE COMMON CAUSES OF INFANT DEATHS.

	1911					1912							
Months	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	April.	May.	June	July	Total.
Premature Birth	2	2	0	0	0	0	3	0	2	0	0	0	9
Enteritis	1	0	5	3	7	4	2	1	0	1	1	3	28
Gastric and Intestinal Catarrh	0	2	3	5	1	1	3	0	0	0	2	1	18
Marasmus	1	0	0	1	1	2	0	0	1	0	0	0	6

TABLE 4.—SHOWING INFANTILE DEATHS IN WARDS FOR THE PAST FIVE YEARS.

YEARS.	WARDS.							TOTAL.
	1	2	3	4	5	6	7	
1907-8	20	4	11	12	18	13	11	80
1908-9	13	6	10	10	7	6	10	62
1909-10	6	9	5	7	7	4	3	41
1910-11	12	13	9	16	11	9	16	86
1911-12	13	8	14	12	10	11	19	87

The following columns and table exhibit the Infantile Mortality Figure for the past seven years :—



The shaded portions of the columns represent the proportion of infantile deaths due to diseases of the Alimentary Track.

	Year.						
	1905-6	1906-7	1907-8	1908-9	1909-10	1910-11	**1911-12**
No. of Infant Deaths	109	67	89	62	41	86	**87**
Infantile Mortality Figure ...	100	69·2	91·7	67·3	45·4	90·3	**96·5**

The following Table shows the comparative rates (Europeans) from the Principal Towns of South Africa:—

	Population	Birth Rate.	Death Rate.	Infantile Mortality.	Phthisis Death Rate.
Johannesburg	1 20,411	36.4	12.2	111.	.47
Capetown	30,052	24.4	15.5	98.1	1.56
Pretoria	25,150	31.	8.46	8[illegible]	.4
Durban	36,400	24.3	9.9	98.5	.63

INFECTIOUS DISEASES, 1911-12.

GENERAL.—A perusal of the following pages will show that the past year has been exceptional in the incidence of Infectious Diseases. Not only had we to deal with outbreaks of Plague and Small-pox, but there was a marked increase in the notifications of Diphtheria and Enteric Fever. This increased incidence occurred coincidently with the outbreaks of Plague and Small-pox, all starting in the early part of 1912.

Regarding Plague and Small-pox, reports on these diseases will be found as Annexures "A" and "B" respectively.

During the year it was considered advisable to determine a standard basis for the periods of isolation and exclusion from schools of teachers and scholars suffering from infectious diseases, or living in a house where infectious diseases occurred. The necessity had been apparent for some time, but the continued prevalence of Diphtheria made it imperative to deal with this disease, and the opportunity was taken of dealing with other infectious diseases. A memorandum was drafted on the lines of that framed by the Local Government Board and Education Department of Great Britain. A draft was submitted to the medical profession of Durban, inviting suggestions, etc. As this received the general approval, it was then printed in leaflet form, and copies distributed to all medical men and head teachers of schools in Durban.

The diseases dealt with in this respect were:—Diphtheria, Scarlet Fever, Mumps, Whooping Cough, Measles, Chicken-pox, German Measles, Ringworm, and Trachoma.

TABLE OF CASES OF NOTIFIABLE INFECTIOUS DISEASES ARRANGED ACCORDING TO RACES, 1911-12.

Disease.	Europeans.		Natives.		Asiatics.		Total.	
	Boro'.	Imp.	Boro'.	Imp.	Boro'.	Imp.	Boro'.	Imp.
Plague	2	0	10	0	16	0	28	0
Dysentery ...	59	10	12	7	12	7	83	24
Smallpox	25	0	4	2	7	0	36	2
Diphtheria ...	118	12	0	0	0	0	118	12
Erysipelas ...	7	1	0	0	1	0	8	1
Scarlet Fever ...	11	1	0	0	0	0	11	1
Enteric Fever ...	82	27	8	1	3	2	93	30
Puerperal Fever ...	0	0	0	0	3	0	3	0
Leprosy	1	0	1	0	6	1	8	1
Phthisis	53	62	32	19	93	50	178	131
Cerebro-Spinal Meningitis	0	0	2	0	0	1	2	1
Totals ..	358	113	70	29	141	60	568	203
Treated in Hospital	115	48	35	17	73	50	223	115
Treated at home or privately ...	243	65	36	12	68	10	345	88

TABLE SIMILAR TO THE FOREGOING FOR COMPARISON CONTAINING NUMBER OF NOTIFICATIONS OF PREVIOUS YEAR, 1910-11.

Disease.	Europeans.		Natives		Asiatics		Total	
	Boro'.	Imp.	Boro'.	Imp.	Boro'.	Imp.	Boro'.	Imp.
Plague	0	0	0	0	0	0	0	0
Dysentery ...	85	6	16	8	30	8	131	22
Smallpox	0	0	0	0	0	0	0	0
Diphtheria ...	39	5	0	0	2	0	41	5
Erysipelas ...	8	0	1	0	0	0	9	0
Scarlet Fever ...	14	0	0	0	0	0	14	0
Enteric Fever ...	52	27	2	2	1	0	55	29
Puerperal Fever ...	5	0	1	0	3	0	9	0
Leprosy ...	1	0	0	0	1	0	2	0
Phthisis	69	44	7	16	55	52	131	112
Cerebro-Spinal Meningitis	1	0	0	0	0	9	1	9
Totals	274	82	27	26	92	69	393	177
Treated in Hospital	67	46	14	13	47	55	128	114
Treated at home or privately ...	207	36	13	13	45	14	265	63

PLAGUE.

Plague once more made its appearance in the Borough, having been absent for a little over six years, in January. The following tables show the incidence of Plague in Durban:—

1902-3.	1903-4.	1904-5.	1905-6.	1912	1912. Outside Borough.
174	8	28	5	28	5

RACE AND SEX DISTRIBUTION.

	Male.	Female.	Total.	Deaths.
European	2	—	2	1
Natives	10	—	10	6
Asiatics	11	5	16	15
Totals	23	5	28	22

WARD DISTRIBUTION.

Wards	1	2	3	4	5	6	7	Total
European ...	...	1	...	..	...	1	...	2
Native ..	2	...	...	3	...	5	...	10
Asiatic ...	12	...	...	1	...	3	..	16
Totals	14	1	...	4	...	9	...	28

MONTHLY DISTRIBUTION OF CASES AND DEATHS.

	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.		Mar.	April	May	June	July	Total
Cases	...	...	...	...	...	2	10	9	2	3	1	1	28
Deaths	..	...	...	...	...	2	7	7	2	2	1	1	22

SMALL-POX.

RACE AND SEX DISTRIBUTION.

	Male.	Female.	Total.	Deaths.
European	7	2	9	—
Coloured	5	12	17	2
Natives	5	1	6	—
Asiatics	4	3	7	1
Totals	21	18	39	3

WARD DISTRIBUTION.

Wards.	1.	2.	3.	4.	5.	6.	7.	Impt.	Total.
European	—	1	1	5	—	2	—	—	9
Coloured	1	3	2	10	—	—	1	—	17
Native	—	—	1	2	—	1	—	2	6
Asiatic	—	—	—	3	—	4	—	—	7
Totals	1	4	4	20	—	7	1	2	39

NUMBER OF ROOMS IN INFECTED HOUSES.

Rooms.	1	2	3	4	5	6	7	Over 7.	Instit.	Tota
European...	2	—	1	2	3	1	—	—	—	9
Coloured	2	1	—	2	12	—	—	—	—	17
Native	6	—	—	—	—	—	—	—	—	6
Asiatic	7	—	—	—	—	—	—	—	—	7
Totals	17	1	1	4	15	1	—	—	—	39

AGE DISTRIBUTION OF EUROPEANS AND COLOURED.

Age	0—5	5—10	10—15	15—20	20—25	25—35	35—45	45—55	TOTAL
European Males	...	...	...	...	1	3	2	1	7
Coloured Males	1	...	...	2	...	1	2	...	6
European Females	...	..	...	...	1	...	...	1	2
Coloured Females	3	2	...	2	...	1	2	1	11
TOTALS	4	2	..	4	2	5	6	3	26

MONTHLY DISTRIBUTION OF CASES AND DEATHS.

	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	April	May	June	July	TOTAL
Cases	...	...	...	...	..	2	2	...	2	3	27	3	39
Deaths	...	...	...	...	...	...	...	...	...	1	1	1	3

DYSENTERY.

The following table shows the cases notified and deaths registered during the past six years:—

Year.	1906-7.	1907-8.	1908-9.	1909-10.	1910-11.	1911-12.	
						Borough	Importe
Cases	93	101	72	80	153	83	24
Deaths	4	35	15	15	27	13	15

Case Mortality, 15.664 per cent.
Incidence per 1,000 of population, 1.148 (all Races).

RACE AND SEX DISTRIBUTION.

	Male.	Female.	Total.	Deaths.
European	32	27	59	5
Native	12	—	12	5
Asiatic	11	1	12	3
Totals	55	28	83	13

WARD DISTRIBUTION.

Wards	1	2	3	4	5	6	7	Imported.	Total.
European ...	11	8	4	10	6	9	11	10	69
Native ...	3	1	2	1	2	3	—	7	19
Asiatic ...	3	1	—	—	1	6	1	7	19
Totals	17	10	6	11	9	18	12	24	107

The houses of 65 were provided with water closets, and at 13 the pail system was in use.

NUMBER OF ROOMS IN INFECTED HOUSES.

Rooms.	1	2	3	4	5	6	7	Over 7	Institutions.	Totals.
European	7	1	5	9	19	6	3	7	2	59
Native	9	1	—	—	—	—	—	—	1	11
Asiatic	7	1	—	—	—	—	—	—	—	8
Totals	23	3	5	9	19	6	3	7	3	78

AGE DISTRIBUTION—EUROPEAN.

Age	0-5	5-10	10-15	15-20	20-25	25-35	35-45	45-55	55-65	65-75	Totals
Male	2	6	4	4	1	5	4	3	1	2	32
Female	5	2	2	2	3	6	4	2	1	—	27
Totals	7	8	6	6	4	11	8	5	2	2	59

COLOURED RACES.

	Adults.	Children.	Total.
Natives	10	2	12
Asiatics	9	3	12

SANITARY CONDITIONS.—The structural and sanitary conditions of buildings and surroundings at the houses where the cases resided were:—

Good.	Fair.	Poor.	Bad.	Total.
11	50	15	2	78

CLEANLINESS.—So far as cleanliness of the interior of the dwellings and their surroundings was concerned, they might be classed as:—

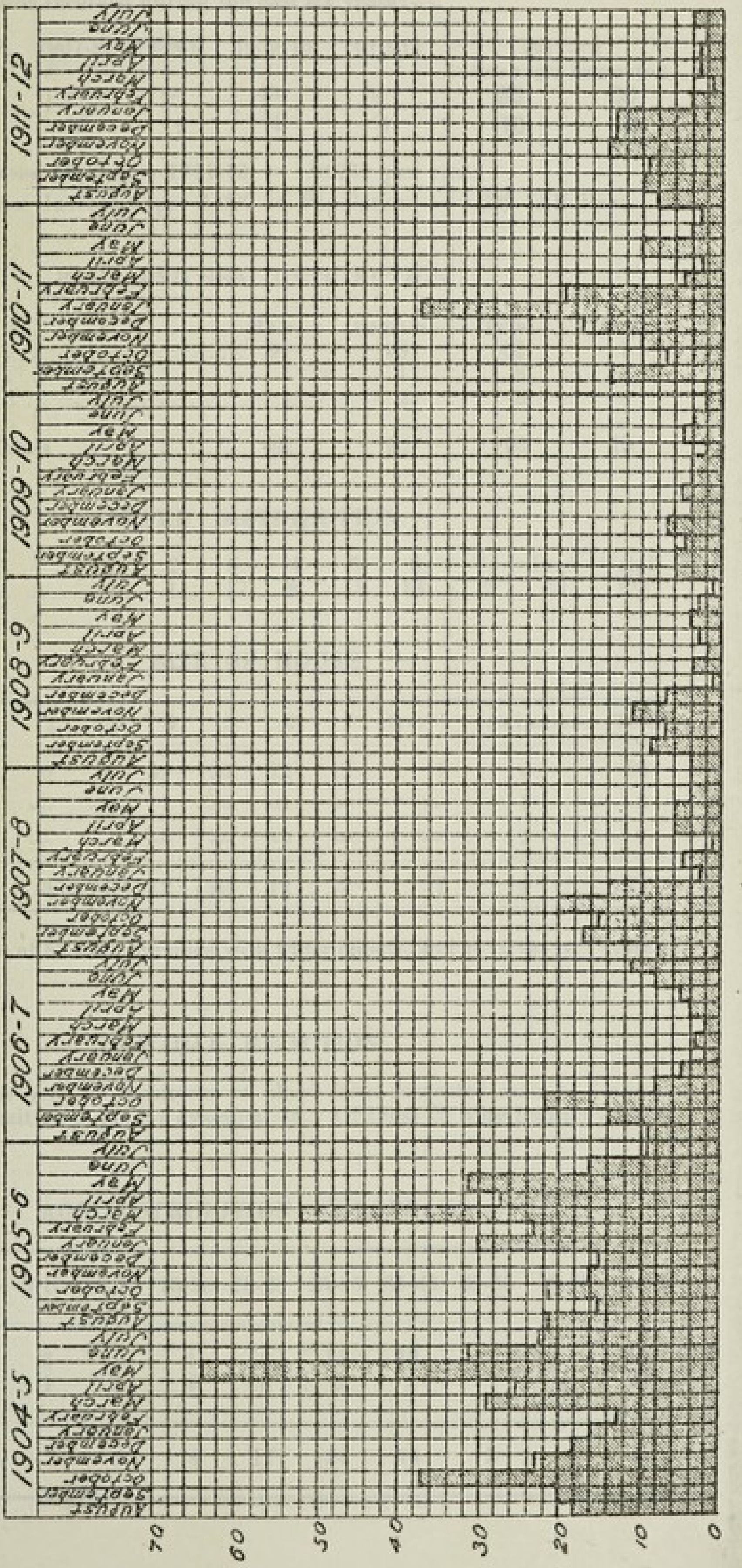
Clean.	Fair.	Dirty.	Total.
37	33	8	78

The residences were not found of

4 Asiatics, and
1 Native.

The following Chart shows graphically the monthly notifications of Dysentery for the past seven years:—

DYSENTERY NOTIFICATIONS.



ENTERIC FEVER.

The following table shows the total number of cases of Enteric Fever notified and deaths recorded during the past six years:—

Year	1906-7.	1907-8.	1908-9.	1909-10.	1910-11	1911-12	
						Borough	Imported
Cases	72	95	48	45	55	93	30
Deaths	8	12	4	4	4	10	8

Cases Mortality, 1911-12 = 10.752 per cent.
Case Incidence per 1,000 of Population = 1.286 (All Races).

RACE AND SEX DISTRIBUTION.

	Male.	Female.	Total.	Deaths.
European	54	28	82	7
Native	7	1	8	3
Asiatic	1	2	3	—
Totals	62	32	93	10

WARD DISTRIBUTION.

Wards.	1.	2.	3.	4.	5.	6.	7.	Impt.	Total.
Cases	15	11	17	8	15	18	9	30	123

SIZE OF HOUSE.

Rooms	1	2	3	4	5	6	7	Over 7	Institution.	Total.
European	11	3	4	11	20	12	12	7	2	82
Asiatic	1	—	—	1	—	—	—	—	1	3
Native	6	—	—	—	—	—	—	—	1	7
Totals	18	3	4	12	20	12	12	7	4	92

The houses of 82 were provided with water closets, and at 10 the pail system was in use.

WIDAL RE-ACTION.

During the year 68 specimens of blood from suspected cases of Enteric have been submitted to me for examination. Of these 29 were positive and 39 negative.

AGE DISTRIBUTION—EUROPEANS.

Age ...	0-5	5-10	10-15	15-20	20-25	25-35	35-45	45-55	55-65	Total.
Male ..	3	6	—	4	12	15	12	1	1	54
Female	3	1	3	4	5	9	2	1	—	28
Totals	6	7	3	8	17	24	14	2	1	82

SANITARY CONDITIONS.—The sanitary conditions existing at houses where cases resided were:—

Good.	Fair.	Poor.	Bad.	Total.
24	49	17	2	92

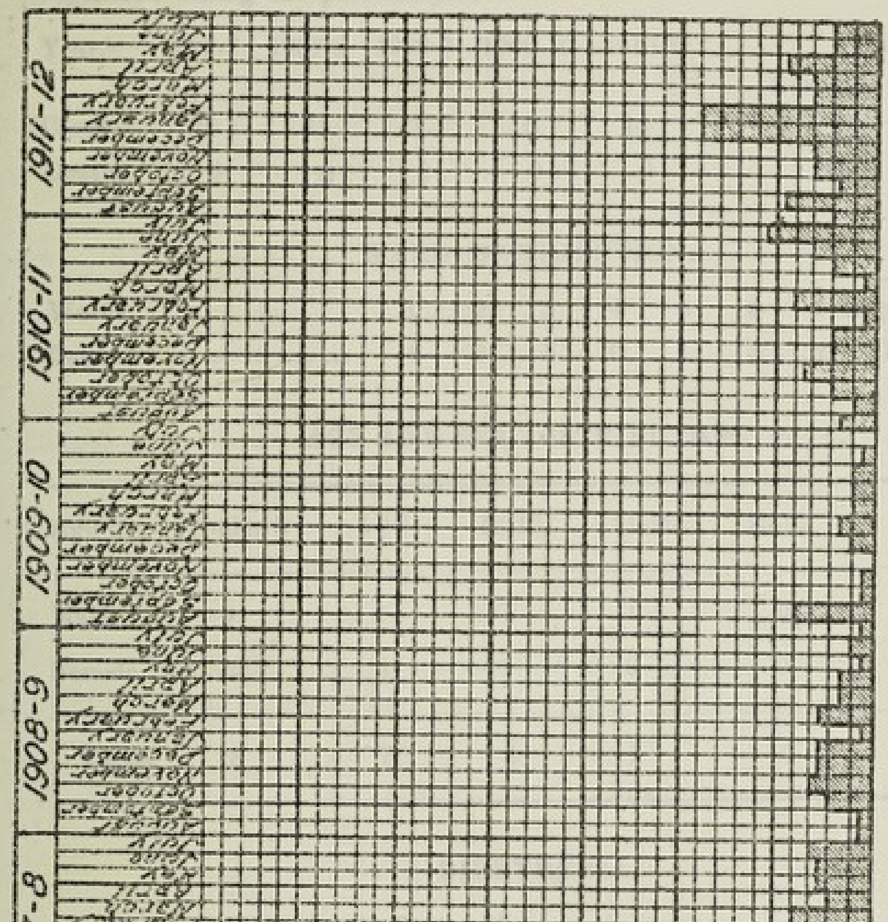
CLEANLINESS.—So far as cleanliness of the dwellings and the surroundings was concerned they might be classed as:—

Clean.	Fair.	Dirty.	Total.
54	54	5	92

The residence was not found of 1 Native.

The subjoined Chart shows the Monthly Distributions of Enteric during the past seven years:—

ENTERIC FEVER NOTIFICATIONS.



SCARLET FEVER.

The following table shows the cases notified and deaths from Scarlet Fever registered during the past six years:—

Year.	1906-7	1907-8	1908-9	1909-10	1910-11	1911-12	
						Borough	Imported
Cases	38	21	11	10	14	11	1
Deaths	0	0	0	0	0	0	0

WARD DISTRIBUTION.

Wards	1	2	3	4	5	6	7	Imptd.	Total.
Cases	4	3	0	0	1	1	2	1	12

AGE AND SEX DISTRIBUTION.

Age	Under 5	5-10	10-15	15-20	20-25	Total
Male	0	1	1	1	0	3
Female	2	6	1	0	0	9
Totals	2	7	2	1	0	12

DIPHTHERIA.

Table of notified cases during the past six years:—

Year	1906-7	1907-8	1908-9	1909-10	1910-11	1911-12	
						Borough	Imported
Cases	58	37	35	62	46	118	12
Deaths	8	2	0	6	2	10	1

Males	50
Females	68
Total	118

RACE.—The cases were distributed:—Europeans, 115; Eurasians, 3.

WARD DISTRIBUTION.

Wards	1	2	3	4	5	6	7	Imptd.	Total.
Cases	6	16	35	10	15	11	25	12	130

NUMBER OF ROOMS IN INFECTED HOUSES.

Rooms.	1	2	3	4	5	6	7	Over 7	Institution.	Total.
Cases	6	6	7	26	26	24	10	9	4	118

In the houses of 116 water closets were in use and in two the pail system was in use.

MONTHLY DISTRIBUTION OF CASES AND DEATHS.

	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	March.	April.	May.	June.	July.	Total.
Cases	8	3	2	5	3	7	17	5	16	10	15	27	118
Deaths	2	1	3	0	0	1	0	1	1	1	0	0	10

AGE DISTRIBUTION OF CASES.

Age	0-1	1-5	5-10	10-15	15-20	20-25	25-35	35-45	Total.
Males	0	9	22	8	3	1	6	1	50
Females	1	12	40	4	0	2	8	1	68
Totals	1	21	62	12	3	3	14	2	118

SANITARY CONDITIONS.—The sanitary conditions existing at houses where cases resided were:—

Good.	Fair.	Poor.	Bad.	Total.
43	53	20	2	118

CLEANLINESS.—So far as cleanliness of the dwelling and surroundings was concerned they may be classed as:—

Clean.	Fair.	Dirty.	Total.
85	28	5	118

DIPHTHERIA.

Reference to the various tables under this heading shows a very considerable increase in the number of cases of Diphtheria as compared with former years. One is struck by the fact that the increased incidence of the disease began at the same time as the Plague and Small-pox outbreaks occurred.

It will be seen that the increase in the number of cases notified began in the month of January, was very marked in February, dropped to about normal in March, and steadily increased again through April, May and June, culminating in a total of 27 notifications for the month of July.

The tables show that the districts chiefly affected were Wards 3 and 7, and it was found that the scholars attending Bulwer Park and Stamford Hill Schools provided the majority of cases.

Analysis of the ages of those attacked shows that exactly two-thirds were children of school age, i.e., 5 to 15 years, and over 50 per cent. were between 5 and 10 years of age.

In accordance with the usual practice the cases were immediately visited by the Infectious Diseases Inspector. In several instances when the Inspector visited an infected house he found on making enquiry that a number of cases of sore throat among the patient's intimates had preceded the actual case. Several well marked groups of this kind were traced, and I have no doubt that had microscopic examination of swabs from the throats of such children been made while they were sick, numbers of them would have been found to be suffering from Diphtheria. As the result of information he obtained it was decided to send out the following circular letter to members of the medical profession practising in the Borough:—

Public Health Department,
Town Hall, Durban.
April 20, 1912.

Private and Confidential.

Dear Dr.,—

Since the beginning of this year I have received information from medical men and others as to the prevalence of sore throats, chiefly amongst children, in this Borough.

It has occurred in several instances that after some persons have been affected in the house with sore throat one or two of the occupants have developed Diphtheria of a typical form, and in other instances after such sore throats the children have developed the condition identical with what is known as post diphtheritic paralysis.

It has occurred to me that it is just possible that some of these cases of sore throat might be Diphtheria, and owing to the mildness of the clinical signs and symptoms have misled the attending practitioner as to their real origin or cause.

In the circumstances I think it desirable at the present time that in all cases of sore throats swabs should be taken and sent to this laboratory for examination. Sterilised swabs will be sent to your residence or consulting rooms on receipt of a telephone message, and the result of the examination of any swab will be communicated to you immediately by telephone.

I shall value your co-operation in this matter very highly.

Yours faithfully,

(Sgd.) P. MURISON, M.D.,

The cases still continuing, the co-operation of Head Teachers regarding children absent from school, and more particularly those suffering from any form of sore throat, and who might not be under medical attention, was invited by the following circular:—

May 25, 1912.

The Head Teacher,
.... School,
Durban.

Dear ......,

Diphtheria has been slightly more prevalent than usual in the Borough recently, and it has been noticed that at the same time there has been a number of cases of sore throat running concurrently with these cases of Diphtheria. It is possible that some of these cases of sore throat may be very mild cases of Diphtheria, and if not seen to may result in other cases occurring.

I shall therefore be glad if you will kindly advise me of any child in your school who is suffering from sore throat, or who may be absent from school and reported to be suffering from sore throat.

Yours faithfully,

P. MURISON, M.D.,

Medical Officer of Health.

Of late years practically every case of Diphtheria occurring has been treated with anti-diphtheritic serum. This is neither the time nor the place to enlarge on all the advantages which follow the use of this serum, but one fact may be stated, and that is the general rapidity with which all visible membrane clears from the throat of the sufferer, after adequate anti-toxin treatment. Too frequently the disappearance of the outward symptoms of the disease were accepted as evidence of complete recovery, and I am convinced that numbers of patients were freed from restrictions and allowed to return to work or school whilst still carrying infection. Numerous cases are on record in other parts of the world, and are corroborated by several instances in Durban where patients have been found harbouring the typical organisms of Diphtheria months after an attack. From such examples it is evident that mere clinical examination of the throat of the patient is not sufficient to justify the statement that the patient is free from infection. Fortunately there is a reliable method of ascertaining whether infection remains in the throat. If swabs taken from the throat show none of the typical bac: diphtheria organisms on microscopical examination, one may then say that no infection remains, though it is necessary, to insure complete safety, to have at least three negative swabs which have been taken at intervals of not less than 48 hours.

Not only is bacteriological examination the only reliable method of learning when a patient is free from infection, but it is a most useful assistance to the practitioner in checking his clinical diagnosis. It is particularly useful in mild cases where the clinical symptoms are slight and indefinite. Many of the cases in the outbreak were of this type, and accurate diagnosis could only be made from a microscopic examination.

It is a well-known fact that in the initial stages of epidemics of Diphtheria concurrent outbreaks of sore throats are common.

It had been the practice to accept the certificate of the medical attendant as to the time a person who has been suffering from Diphtheria might return to school.

In view of those facts, and the continued prevalence of the disease, the following circular letter was issued to members of the medical profession:—

Public Health Department,
Town Hall, Durban.
July 15, 1912.

Dear Doctor,

Diphtheria.

With reference to my previous circlar letter, dated 20th April, regarding the above disease, I regret to state that the number of cases notified in the Borough continues to show little, if any, signs of abatement.

Almost all the patients are children attending schools. The winter school holidays are now on. I hope before the classes are again resumed to be able to report a very considerable reduction in the number of cases.

In future, however, I will not be prepared to allow a person who has had Diphtheria to return to school within four weeks after three successive swabs from the throat have yielded negative results, and disinfection of patient, rooms and belongings has been carried out.

In the case of children attending school residing in the same house in which a case of Diphtheria has been notified, such children will require to be excluded from school for 14 clear days, during which period bacteriological examination of the throat will be made on the fifth day, and if negative, repeated on the eighth day.

Of late years practically every case of Diphtheria occurring has been treated with anti-diphtheritic serum. This is neither the time nor the place to enlarge on all the advantages which follow the use of this serum, but one fact may be stated, and that is the general rapidity with which all visible membrane clears from the throat of the sufferer, after adequate anti-toxin treatment. Too frequently the disappearance of the outward symptoms of the disease were accepted as evidence of complete recovery; and I am convinced that numbers of patients were freed from restrictions and allowed to return to work or school whilst still carrying infection. Numerous cases are on record in other parts of the world, and are corroborated by several instances in Durban where patients have been found harbouring the typical organisms of Diphtheria months after an attack. From such examples it is evident that mere clinical examination of the throat of the patient is not sufficient to justify the statement that the patient is free from infection. Fortunately there is a reliable method of ascertaining whether infection remains in the throat. If swabs taken from the throat show none of the typical long diphtheria organisms on microscopical examination, one may then say that no infection remains, though it is necessary, to insure complete safety, to have at least three negative swabs which have been taken at intervals of not less than 48 hours.

Not only is bacteriological examination the only reliable method of learning when a patient is free from infection, but it is a most useful assistance to the practitioner in checking his clinical diagnosis. It is particularly useful in mild cases where the clinical symptoms are slight and indefinite. Many of the cases in the outbreak were of this type, and accurate diagnosis could only be made from a microscopic examination.

It is a well-known fact that in the initial stages of epidemics of Diphtheria concurrent outbreaks of sore throats are common.

It had been the practice to accept the certificate of the medical attendant as to the time a person who has been suffering from Diphtheria might return to school.

In view of these facts, and the continued prevalence of the disease, the following circular letter was issued to members of the medical profession:

Public Health Department,

Town Hall, Durban.

July 15, 1912.

Dear Doctor,

Diphtheria.

With reference to my previous circular letter, dated 29th April, regarding the above disease, I regret to state that the number of cases notified in the Borough continues to show little, if any, signs of abatement.

Almost all the patients are children attending schools. The winter school holidays are now on. I hope before the classes are again resumed to be able to report a very considerable reduction in the number of cases.

In future, however, I will not be prepared to allow a person who has had Diphtheria to return to school within four weeks after three successive swabs from the throat have yielded negative results, and disinfection of patient, rooms and belongings has been carried out.

In the case of children attending school residing in the same house in which a case of Diphtheria has been notified, such children will require to be excluded from school for 14 clear days, during which period bacteriological examination of the throat will be made on the fifth day, and if negative, repeated on the eighth day.

The quarantine periods mentioned above shall commence on the day of disinfection of infected premises by the Public Health Department.

Any number of sterilised throat swabs may be obtained on demand from this Department. Bacteriological examinations of swabs are made free of charge.

Yours faithfully,

P. MURISON, M.D.,

Medical Officer of Health.

This Department is, however, ready at all times to consider individual cases which a medical attendant is of opinion should have the restrictions modified.

Anti-toxin for Diphtheria treatment continues to be supplied gratis for any case where the medical attendant states that the parents or guardians are too poor to provide this remedy.

TUBERCULOSIS.

TABLE 1.

Year.	Europeans.				Natives.				Asiatics.			
	All Tuberculosis.		Phthisis.		All Tuberculosis.		Phthisis.		All Tuberculosis.		Phthisis.	
	Deaths.	Rate per 1,000 of Pop.	Deaths.	Rate per 1,000 of Pop.	Deaths,	Rate per 1,000 of Pop.	Deaths.	Rate per 1,000 of Pop.	Deaths.	Rate per 1,000. of Pop.	Deaths.	Rate per 1,000 of Pop.
1905-06	27	·80	24	.7	20	1·00	17	0·9	76	4·60	68	4·10
1906-07	30	·95	22	·7	36	2·20	23	1·1	82	5·10	61	3·80
1907-08	21	·70	18	·6	29	1·48	23	1·77	80	5.06	75	4·74
1908-09	20	·68	14	·48	20	1·25	13	0·82	58	3·85	51	3·39
1909-10	19	·59	18	·56	8	·49	6	·36	34	2·71	31	1·92
1910-11	21	·61	18	·52	7	·40	2	.11	28	1·64	25	1·47
1911-12	**26**	**·71**	**23**	**·63**	**5**	**27**	**5**	**·27**	**54**	**3·09**	**49**	**2·8**

TABLE 2.—DEATHS FROM ALL FORMS OF TUBERCULOSIS SINCE 1905.

	1905-6	1906-7	1907-8	1908-9	1909-10	1910-11	**1911-12**	Total Deaths for 7 Years.	Annual Average Mortality.
Europeans,	27	30	21	20	19	21	**26**	164	23
Natives,	20	36	29	20	8	7	5	125	18
Indians,	76	82	80	58	34	28	51	412	59
Totals,	123	148	130	98	61	56	85	701	101

PHTHISIS.

TABLE 3.—DISTRIBUTION OF NOTIFIED CASES AND DEATHS IN WARDS, 1911-12 (EUROPEANS).

Wards ...	1	2	3	4	5	6	7	Imported.	Total
No. of Cases...	7	11	6	10	6	3	10	62	115
Deaths ...	9	1	3	4	2	2	2	14	37

TABLE 4.—AGE AND SEX DISTRIBUTION OF NOTIFIED CASES.

	Under 1		1—5		5—10		10—15		15—20		20—25		25—35		35—45		45—55		55—65		65—75		75-85		Total.	
	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F
Cases	0	0	0	0	1	0	1	0	2	3	5	2	6	9	8	3	8	2	1	1	0	0	1	0	33	20
Deaths	0	0	0	0	0	0	0	0	1	0	0	2	5	2	6	1	3	1	1	1	0	0	0	0	16	7

NATIVES.

TABLE 5.—DISTRIBUTION OF NOTIFIED CASES AND DEATHS IN WARDS, 1911-12.

Wards	1	2	3	4	5	6	7	Imported.	Total.
Cases notified ..	6	4	5	4	4	5	4	19	51
Deaths	2	1	1	0	0	1	0	8	13

ASIATICS.

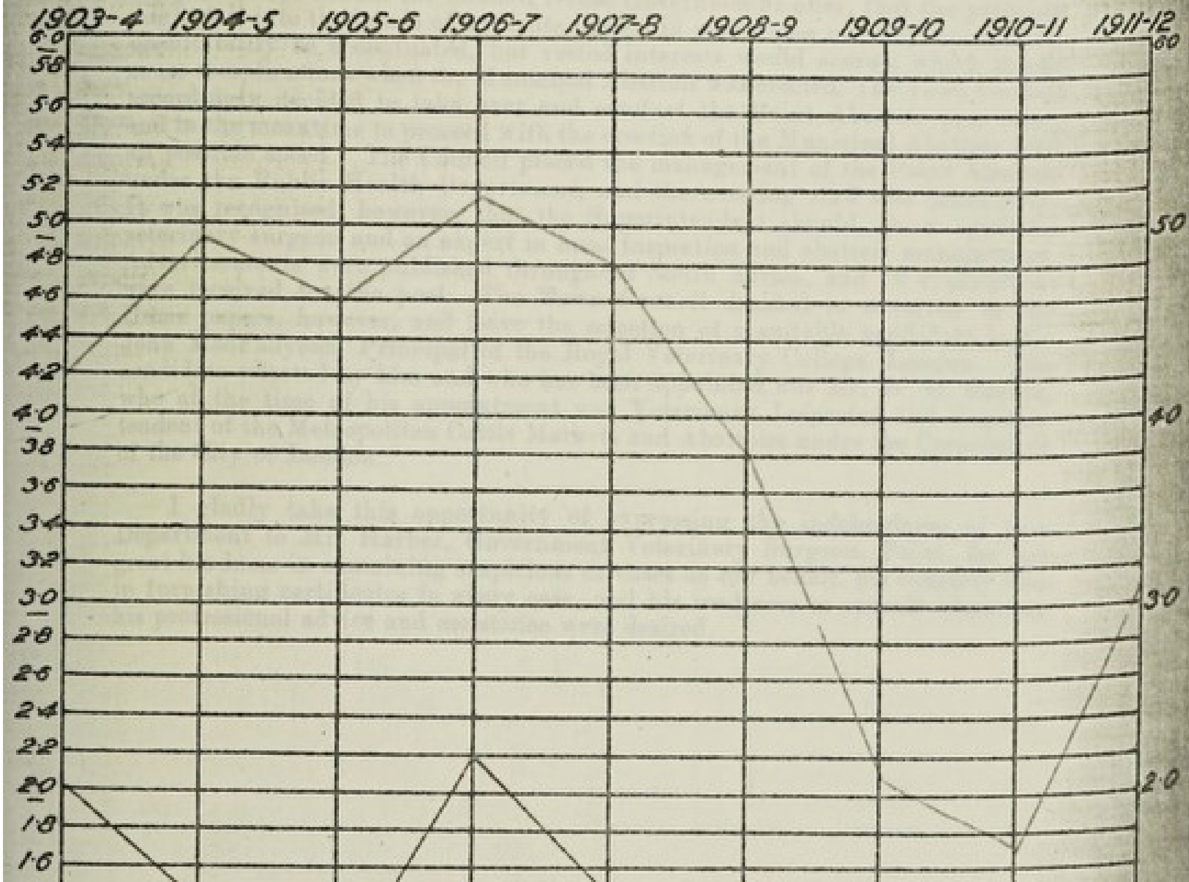
TABLE 6.—DISTRIBUTION OF NOTIFIED CASES AND DEATHS IN WARDS, 1911-12.

Wards	1	2	3	4	5	6	7	Imported.	Total.
Cases Notified ...	17	3	2	19	5	46	1	50	143
Deaths	21	3	0	6	1	18	0	23	72

TABLE OF NOTIFICATIONS ARRANGED IN MONTHS AND RACES.

	Europeans.		Natives.		Asiatics.		TOTAL.	
	Boro.	Imp.	Boro.	Imp.	Boro.	Imp.	Boro.	Imp.
1911								
August	4	10	2	3	17	7	23	20
September ...	7	3	2	1	6	8	15	12
October	6	6	5	1	4	5	15	12
November .	7	3	1	4	15	2	23	9
December ...	7	3	2	3	11	4	20	10
1912								
January	4	6	2	0	5	3	11	9
February ...	3	3	2	1	12	0	17	4
March	4	4	4	1	5	2	13	7
April	3	3	4	3	5	5	12	11
May	3	5	0	1	5	1	8	7
June	4	5	3	1	5	3	12	9
July	1	11	5	0	3	10	9	21
Totals ...	53	62	32	19	93	50	173	131

Chart showing the Death Rate per 1,000 from Tuberculosis amongst Europeans, Asiatics, and Natives during the past nine years:—



ABATTOIR.

In January, 1908, the Natal Government opened an Abattoir at the Point to deal with cattle taken over under the East Coast Fever Stamping-out Policy. Six months later Government abandoned that policy, but resolved to keep the Abattoir open for the convenience of farmers, butchers, and others who had cattle and sheep to kill. A schedule of Regulations and Charges was framed, the owner or his agent paying so much per head for each animal killed.

The work of killing cattle was carried out by a contractor under the supervision of an official appointed by Government as sub-manager. In September, 1909, the Natal Government desired to transfer this Abattoir to the Corporation. The Town Council, recognising that the structural arrangements were of a makeshift character, hurriedly established in order to cope with a pressing emergency, and violating every rule that should be observed in Abattoir arrangement and construction, declined to entertain the proposal, considering that the premises were quite unsuitable for a Municipal Abattoir.

In February of this year the Union Government determined to cease conducting the Point Abattoir, and renewed the previous offer of the Natal Government to the Town Council.

The Council, though well aware of the unsuitable character of the buildings for an Abattoir, was impressed with the necessity of maintaining an arrangement which had become so essential to the butchers in Durban. There was also the possibility, should the Council refuse Government's offer, that the premises might fall into the hands of a private trader, in which case not only would their unsuitability be accentuated, but vested interests would accrue, which might cause complications when the Municipal Abattoir was erected. The Town Council accordingly decided to take over and conduct the Point Abattoir pro. tem., and in the meantime to proceed with the erection of the Municipal Abattoir with all possible speed. The Council placed the management of the Point Abattoir under the Public Health Department, and the existing staff was taken over. It was recognised, however, that the Superintendent should be a qualified veterinary surgeon and an expert in meat inspection and abattoir management. Advertisements were published throughout South Africa, and 16 applications were received for the post. The Town Council decided to advertise in the Home papers, however, and leave the selection of a suitable candidate to Sir John MacFadyean, Principal of the Royal Veterinary College, London. The candidate selected by him and who has been appointed was Mr. W. G. Barnes, who at the time of his appointment was Veterinary Inspector and Superintendent of the Metropolitan Cattle Markets and Abattoirs under the Corporation of the City of London.

I gladly take this opportunity of expressing the indebtedness of this Department to Mr. Harber, Government Veterinary Surgeon, Point, for his great kindness in examining suspicious carcases on our behalf, his courtesy also in furnishing certificates in every case, and his readiness to consult whenever his professional advice and assistance were desired.

The following Table shows the work done at the Point Abattoir from 25th March to 31st July, 1912:—

KILLED AT THIS ABATTIOR.						BROUGHT TO THIS ABATTIOR FOR SALE			
Month	Cattle	Calves	Sheep	Tripes Cleaned	Feet Cleaned	Month	Carcases of Beef	Sheep	Pigs
March ...	273	19	299	31	...	March	...	...	30
April ...	1188	55	632	117	...	April ...	...	...	101
May ..	952	34	1086	137	...	May ...	...	125	95
June ...	1270	27	659	172	...	June ...	30	59	61
July ...	696	8	469	148	22	July ...	6	...	255
Total ..	4379	143	3145	605	22	Total ...	36	184	252

	Cattle	Calves	Sheep	Pigs
Carcases exposed for sale at Public Auction ...	4099	143	2730	542
Carcases killed for butchers privately ...	316	—	599	—

TABLE SHEWING CARCASES, ETC., FOUND TO BE PARTLY OR WHOLLY UNFIT FOR HUMAN FOOD, DURING PERIOD FROM 25TH MARCH TO 31ST JULY, 1912.

DATE.	Cattle	Sheep	Pigs	Inspected by	REMARKS.
27/3/12	7	...	...	Harber	Inspected for Tuberculosis. 1 carcase destroyed; Thoracic viscera of remainder destroyed, but meat passed.
12/4/12	1	...	...	,,	Inspected for Tuberculosis. Meat passed; Thoracic viscera destroyed.
17/4/12	1	...	...	,,	Dead in truck. Crushed in transit; destroyed.
26/4/12	1	...	...	,,	Dead in truck. East Coast Fever; destroyed.
2/5/12	...	8	...	,,	Emaciation. Destroyed.
2/5/12	2	...	...	,,	Dead in truck. 1 positive East Coast Fever; both destroyed.
3/5/12	1	...	...	,,	Dead in truck. Destroyed.
11/5/12	2	...	...	,,	Dead in truck. 1 positive East Coast Fever; both destroyed.
15/5/12	...	..	1	,,	Measles. Destroyed.
29/5/12	3	...	...	,,	Inspected for Tuberculosis. 1 carcase destroyed; the other 2 carcases passed for sale, but thoracic viscera destroyed.
5/6/12	1	...	...	,,	Dead in truck. Destroyed.
19/6/12	1	...	...	Amos	Tuberculosis. Carcase and viscera destroyed.
20/6/12	...	...	1	Harber	Measles. Destroyed.
21/6/12	...	19	...	Amos & M.O.H.	Emaciation. All destroyed.
25/6/12	1	...	3	Amos & M.O.H.	1 cow emaciation. 3 pigs measles. All destroyed.
8/7/12	...	...	1	Harber	Measles. Destroyed.
9/7/12	...	...	1	,,	,, ,,
11/7/12	..	...	4	,,	,, ,,
24/7/12	...	...	4	,,	,, ,,
25/7/12	...	...	5	,,	,, ,,
29/7/12	...	...	1	,,	,, ,,
30/7/12	...	...	3	,,	,, ,,
	21	27	24		

TOTAL NUMBER DESTROYED.
12 Carcases Beef.
27 ,, Sheep.
24 ,, Pigs.

INFECTIOUS DISEASES HOSPITAL.

A report on the subject of Hospital Accommodation for cases of Infectious Diseases was submitted in August, 1911, and was considered by the Council.

Towards the accomplishment of this object the following progress has been made:—

SITE.—After considering several sites, one has been selected in the Stella Bush in a line with Manning Road extension and half-a-mile above Congella Police Station. The site is about 300 feet above sea level, and the area allocated is ten acres with an adjacent ten acres reserved for future extensions. On this latter ten acres accommodation will be provided for the treatment of cases of Tuberculosis until such time as Government provides Tuberculosis Sanatoria for the Country.

PLANS.—The Borough Engineer has cleared the ground, and prepared plans showing the general lay-out of the ground and buildings. Drawings have also been prepared showing (1) an administrative block, (2) accommodation for the isolation of three infectious diseases amongst Europeans, and two diseases amongst Coloured patients, (3) two observation blocks, one for Europeans, one for Coloured, (4) two discharge blocks, one for Europeans, another for Coloured, (5) porter's lodge, (6) mortuary, and (7) coloured servants' quarters.

At this point it was suggested that owing to the want of proper accommodation by Government for the reception of cases of Infectious Diseases arriving by sea and rail at Durban, it might be proper to communicate with the Minister for the Interior and suggest that, subject to some equitable arrangement being made for payments, the Borough would be prepared to accommodate all cases of Infectious Diseases (except Small-pox) arriving in Durban. There was further the proposal to undertake the isolation and treatment of cases of infectious disease occurring in the environs for which Government is at present responsible. These negotiations are not yet concluded, but if successfully carried out on these lines the hospital accommodation proposed for the Borough will require to be correspondingly increased. In any event the Corporation has put £10,000 on the Estimates for the current year for the purpose of providing hospital accommodation of this nature.

In addition a sum of £450 to provide a motor ambulance for the removal of cases of infectious disease has been voted.

BACTERIOLOGICAL LABORATORY.

The following examinations have been made in the Laboratory attached to the Public Health Department during the past year:—

	Positive.	Negative.	Total.
Tubercle Bacilli	53	203	256
Diphtheria Bacilli	29	88	117
Widal Reaction for Enteric	29	39	68
Bilharzia	2	2	4
Malaria	0	5	5
Leprosy Bacilli	1	4	5
Gonococci	0	5	5
Plague, Human	9	6	15
,, Rat	34	1,459	1,493
Stahpylococcus Pyogens	0	1	1
Meningitis	0	1	1
Totals	157	1,813	1,970

Total Examinations	1904-5 14936 *	1905-6 12898 *	1906-7 5919 *	1907-8 137	1908-9 187	1909-10 226	1910-11 323	**1911-12** **1970** *

* Chiefly Plague Examinations.

DISINFECTING STATION.

The following is a summary of the work performed at the Disinfecting Station during the past year:—

DISINFECTIONS.

Month	Houses or Rooms	Mattresses	Blankets	Sheets	Articles of Clothing	General Articles	Totals
1911							
August ...	82	136	219	155	902	1117	2611
September ...	47	66	126	76	391	551	1257
October ...	41	51	128	165	430	626	1381
November ...	39	58	127	157	826	877	2084
December ...	63	86	144	147	802	955	2197
1912							
January ...	71	126	217	143	971	850	2378
February ...	65	85	172	128	769	867	2086
March ...	43	67	132	91	686	780	1799
April ...	73	109	180	105	777	910	2154
May ...	83	119	170	95	867	795	2129
June ...	96	123	183	154	1619	2377	4552
July ...	79	165	177	214	2496	2527	5658
Totals ...	782	1191	1975	1570	11,536	13,232	30,286
Previous Year's Work ...	539	673	1235	1198	5961	6886	16,492

PUBLIC BATHS.

The following Table shows the Washing done at the Disinfecting Station for the Public Baths, West Street, during the past year:—

Months.	Towels.	Ladies' Costumes.	Drawers.	Ladies' Sheets	Plain Sheets.	Totals.
1911						
August	6360	77	64	68	18	6547
September	5460	63	100	50	18	5691
October	7760	91	148	58	12	8069
November	7800	68	160	44	14	8086
December	9240	77	207	52	11	9587
1912						
January	10620	64	206	55	14	10959
February	8680	52	135	46	11	8924
March ...	8820	58	108	12	2	9000
April	5400	40	52	22	5	5519
May	4140	48	86	42	7	4323
June...	4060	69	70	40	7	4246
July	4180	52	54	59	5	4350
Totals	82,480	759	1390	548	124	85,301
Previous Year's Work ...	86,001	1241	1153	1023	349	89,767

OCEAN BEACH BATHING ENCLOSURE AND SWIMMING BATHS.

The following Table shows the Washing done during the past year at the Disinfecting Station in connection with the Ocean Beach Bathing Enclosure and Swimming Baths:—

Months.	Towels	Ladies' Costumes.	Gent's Costumes.	Drawers.	Totals.
August ...	9440	1016	5440	336	16232
September ...	7260	770	3900	250	12180
October ...	7560	616	3710	290	12176
November ...	7740	445	3870	210	12265
December ...	12460	740	6450	330	19980
1912					
January ...	12000	1536	7830	900	22266
February ...	9920	864	5420	940	17144
March ...	7440	680	4060	630	12810
April	14990	1377	9090	3120	28577
May	12500	978	6320	2815	22613
June	11870	1030	6230	1960	21090
July	16900	1904	7650	1938	28392
Totals ...	130,080	11,956	69,970	13,719	225,725
Previous Years Work (at Enclosure only)	97,480	9,538	52,187	1238	160,443

Number of Towels washed at Disinfecting Station for Sanitary Department during the past year:—2,820.

INFECTIOUS DISEASES: PAIL SERVICE.

The following Table shows the number of Infectious Diseases Pails supplied and dealt with at cases of Enteric Fever and Dysentery where sewerage is not connected up or available:—

Months.	Pails.
1911.	
August	0
September	0
October	20
November	51
December	8
1912.	
January	0
February	0
March	0
April	0
May	6
June	0
July	0
Total pails	85
Previous year's work	48

STAFF.

The constitution of the Staff is as follows:—

Medical Officer of Health	P. Murison.
Chief Inspector of Nuisances	W. C. Daugherty.
Special Sanitary Inspector	R. Walker.
Assistant Inspectors of Nuisances	J. Kendall. Thos. Hyslop. W. Thomson. J. Wood. A. Kelso. W. C. Dawber. F. W. Holmes. W. G. Smith.
Typist	I. I. Daddy.
Clerk	A. M. McIver.
2nd Clerk	F. W. Burne.
Superintendent, Disinfecting Station	E. Schulthess.
Assistant Disinfector	C. D. Morning.

Tuberculosis Bureau:

Tuberculosis Medical Officer	B. Adams.
Nurse	A. Twamley, A.N.S.R.

P. MURISON, M.D., B.Sc., D.P.H.,

Medical Officer of Health.

Durban Municipal Tuberclosis Bureau.

REPORT BY TUBERCULOSIS MEDICAL OFFICER.

From the opening of the Bureau at the beginning of May, 1911, up to the nd of that Municipal Year (July 31, 1911), 302 persons presented themselves r examination, and during the last Municipal Year to July 31, 1912, 848 ersons were examined, making a total of 1,150 in all. These I have divided nto four classes :—

A. EUROPEAN, which have included among other races, Americans, German, French, Scandinavian, and Dutch.

B. COLOURED, which have included Mauritians, St. Helenas, West Indians, Cape Malays, and Half-castes of various degrees, British and Native, Indian and Cape.

C. NATIVE, mostly Zulus, occasional Basuto and Griqua.

D. ASIATIC, mainly Indians, but a few Chinese and one Japanese.

Of these 1,150 there were

512	Europeans.
84	Coloured.
141	Natives.
413	Asiatics.

The figures of attendances month by month are as follows:—

TABLE I.

TOTAL NUMBER OF PERSONS EXAMINED.

Months.	Europeans.	Coloured.	Natives.	Asiatic.	Total.
1911					
Totals for 3 months May, June, July	160	33	14	95	302
August	39	3	7	69	118
September ...	35	9	9	47	100
October ...	27	8	15	44	94
November ...	29	4	24	42	99
December ...	26	2	10	20	58
1912					
January ...	30	1	14	26	71
February ...	23	—	11	9	43
March ...	35	4	9	13	61
April	28	9	11	7	55
May	26	8	4	15	53
June	24	—	7	15	46
July	30	3	6	11	50
Totals for year 1911-12 ...	352	51	127	318	848
Grand Total ...	512	84	141	413	1150

Among these 1,150 persons 326 have been found to be suffering from Pulmonary Tuberculosis; 210 during the last Municipal Year, and 116 during the three months of the previous Municipal Year which the Bureau was open. (I have found signs of healed Tuberculosis of the lungs in several others, but those I do not intend to include.)

These 326 cases were distributed as follows:—

TABLE II.

TOTAL NUMBER OF CASES OF PULMONARY TUBERCULOSIS

Months.	Europeans.	Coloured.	Natives.	Asiatic.	Total.
1911					
Totals for 3 months May, June, July	70	13	7	26	116
August	13	2	1	14	30
September ...	8	2	1	5	16
October ...	9	2	3	6	20
November ...	10	3	7	5	25
December ...	6	1	5	8	20
1912					
January ...	7	—	3	7	17
February ...	4	—	3	3	10
March	9	2	6	3	20
April	8	—	5	1	14
May	5	1	1	1	8
June	6		4	3	13
July	11	1	3	2	17
Totals for year 1911-12 ...	96	14	42	58	210
Grand Total ...	166	27	49	84	326

These 326 cases are further distributed as follows:—

EUROPEAN, 166—

60 resident in the Borough on July 31, 1912.
25 died in the Borough before August 1, 1912.
81 examined and left Borough before August 1, 1912.

COLOURED, 27—

12 resident in the Borough on July 31, 1912.
10 died in the Borough before August 1, 1912.
5 examined and left Borough before August 1, 1912.

NATIVE, 49—

1 resident in the Borough on July 31, 1912.
6 died in the Borough before August 1, 1912.
42 examined and left Borough before August 1, 1912.

ASIATIC, 84—

15 resident in the Borough on July 31, 1912.
22 died in the Borough before August 1, 1912.
47 examined and left Borough before August 1, 1912.

This gives totals of:—

88 cases in Borough on July 31, 1912.
63 died in Borough before August 1, 1912.
175 examined and left Borough before August 1, 1912.

RESIDENT.—The number of Phthisis cases actually residing in the Borough has varied month by month. It has been as high as 100 and as low as 70.

DEATHS.—A number of cases have died in the Borough since the opening of the Bureau, but a large number of these were imported cases.

Europeans	13	developed disease in Borough,	12 imported,	total 25
Coloured	9	,, ,, ,,	1 ,, ,,	10
Native	4	,, ,, ,,	2 ,, ,,	6
Asiatic	17	,, ,, ,,	5 ,, ,,	22
Totals	43		20	63

Thus out of 63 cases, at least 20 certainly had the disease when they came, and quite possibly some of the remainder, although no positive evidence of disease could be traced prior to their coming to the Borough.

LEFT THE BOROUGH.—A large number (175) of cases attended at the Bureau and subsequently left the Borough, and included under this heading are many Indians who live outside the Borough. It must be borne in mind that as soon as a Native feels sick, he leaves his work and goes home to his kraal. Further, a number of visitors to the town have been examined and found to be suffering from Pulmonary Tuberculosis.

ATTENDANCES OF "OLD" PATIENTS.

During three months of previous Municipal Year	152
1911. August	98
September	107
October	107
November	108
December	95
1912. January	97
February	78
March	102
April	82
May	93
June	56
July	72
Total for year 1911-12	1,095
Grand Total	1,247

As far as possible I get the cases suffering from Pulmonary Tuberculosis to report from time to time at the Bureau. The slight cases report every three or six months, the moderate cases once a month, and some of the more severe cases and the cases of recent duration report once a week. No medicines are given away, but prescriptions are given in a few cases, and in a very few necessitous cases the charge for the drugs is made on the Bureau Account.

Non-tubercular cases, after a complete examination, are referred to Medical Practitioners or the Hospital, and practically the number of attendances recorded includes only tubercular patients. It will thus be seen that the progress of the patients is carefully and systematically watched. The progress made by a large number of patients, especially Europeans, has been quite satisfactory, although the need of a Sanatorium is at times badly felt. A few of the more advanced cases have been admitted to the Government Hospital, Addington, and the Indian Depot Hospital, but it is exceedingly difficult to obtain admission to these institutions, and there is a necessity for some hospital where advanced cases could be sent, and border line cases treated pending their admission to a sanatorium. The Council has, however, quite recently granted the setting aside of ten acres of land for the erection of buildings for the reception of Tubercular cases.

The following number of Visits have been paid at Patients' Homes:—

Months.	Tuberculosis Medical Officer.	Nurse.	Indian Health Visitor.		Total.
			A[1]	B[2]	
1911					
Three Months—May, June, July	115	247	61	16	439
August ...	31	130	75	15	251
September ...	45	118	95	31	289
October ...	54	120	148	38	360
November ...	51	96	153	34	334
December ...	71	105	86	7	269
1912					
January ...	26[3]	115	152	4	297
February ...	9	106	124	6	245
March ...	4	123	127	14	268
April ...	4	107	107	21	239
May	15	109	85	14	223
June	5	76[4]	66[4]	19[4]	166
July	11	43	25	—	79
Total for Year 1911-12 ...	326	1,248	1,243	203	3,020
Grand Total ...	441	1,495	1,304	219	3,459

[1] Visits to actual patients.

[2] Visits made to employers of labour and others in search of patients.

[3] Tuberculosis Medical Officer undertook work in connection with Plague and Small-pox for remainder of the year.

[4] Nurse and Indian Health Visitor assisted with Vaccination work for remainder of the year.

It will be seen that in all 3,020 visits have been paid to the homes of patients. In this way both the actual patients have been assisted, and also a few more cases have been brought to light. Only a few "contact" cases have been discovered. I attribute this to the fact that in Durban, especially among Europeans, there is very little overcrowding, and from the nature of the climate, houses, offices, and workshops, are kept much better ventilated than in Great Britain.

EUROPEAN CASES.—Very few cases lately have been brought to light who have developed Pulmonary Tuberculosis in the Borough.

Of the 166 European cases:—

There were born in the Borough	10
More than 20 years in the Borough	17
Between 5 years and 20 years in the Borough	34
Under 5 years in the Borough	105

of whom 76 had been resident in the Borough under three months

Again of the 166 European cases:—

Developed Pulmonary Tuberculosis in Borough	65
Imported into Borough, 101—	
From other parts of South Africa	54
From Great Britain and elsewhere	47

From these figures it will be seen that very few cases of Pulmonary Tuberculosis occur among the European residents of Durban. I have only seen 65 in fifteen months, and many of these had been ill for years, and attended the Bureau shortly after it was opened.

I should like here to comment on the large number of cases of "Phthisis" imported from Great Britain and elsewhere. Forty-seven cases is, I think, a large number out of 166 Europeans suffering from Pulmonary Tuberculosis to have been imported into one seaport town in one year, especially when it is considered that in all probability a large number pass through without attending the Bureau. Cases are sent out from Great Britain usually on the advice of a general practitioner, who gives no special instructions as to what part of South Africa is beneficial, and what part harmful to persons suffering from Pulmonary Tuberculosis. Many of these cases wander about, going from bad to worse, and eventually die in Government Hospitals. A fair number have been sent back Home again, but a new difficulty is cropping up—the Shipping Companies land cases here and refuse to take them away. I am in hopes that the Tuberculosis Commission which is now sitting, and before whom I gave evidence for three days, will advise Government making more stringent rules as to the landing of persons suffering from Pulmonary Tuberculosis.

INDIAN CASES.—Very few *Indian* cases of Pulmonary Tuberculosis have come to my knowledge during the last six months. The majority of the notified cases were notified by the Hospitals, and many cases were imported and often no adequate address was given. The average Indian patient when once he has got Pulmonary Tuberculosis, is not amenable to treatment at home. I cannot satisfy myself as to the real reason of this, either their resistance to the disease is very poor, or the patient does not follow the rules laid down for treatment as to fresh air, diet, etc. Some few cases have done extremely well, but the majority of the patients die in a few months. Some of the cases have been returned to India, so this in some measure helps to reduce the number of Tuberculous cases actually resident in the Borough.

NATIVE CASES. I have had very little experience with *Native* patients. The majority of the Natives living in the Borough are working men and boys living in barracks or houses attached to the places where they work. In consequence, at the first sign of ill health they leave for their homes, when it is impossible to find out what happens to them. A very few cases have stayed in the Borough, but these have died somewhat rapidly.

NOTIFICATIONS OF "PHTHISIS."—During the past year 309 cases have been notified as suffering from "Phthisis," of which I notified 111, and the Medical Practitioners and Hospitals notified 198. The bulk of this latter number was notified as admitted into the Government, Indian Depot, and Railway Hospitals.

Before the beginning of December, 1911, 87 cases were notified in this way, and since that date 112 cases. I have kept in touch with the whole of this latter number, and they are distributed as follows:—

Transferred to Bureau, included in Bureau figures	35
Died in Hospitals, or before notification	44
Left the Borough from Hospitals or before notification	25
Not found	1
Still in Hospital, or under private medical attention	7
Total	112

At the end of the year there were the following number of cases of Pulmonary Tuberculosis in Hospitals in the Borough:—

In Government Hospital, Addington	7
In Indian Depot Hospital	0
In S.A. Railway Hospital	0
Total	7

From the statistics in the Medical Officer of Health's Department, the 309 notifications are divided as follows, as compared with 243 of last year:—

Year.	Europeans.		Natives.		Asiatics.		Total.	
	Borough	Imported	Borough	Imported	Borough	Imported	Boro.	Imp.
1911-12	53	62	32	19	93	50	178	131
1910-11	69	44	7	16	55	52	131	112

This increase in the number of notified cases is accounted for by the fact that the Bureau is bringing to light additional cases of Pulmonary Tuberculosis, as will be seen from the following table:—

Year.	No. notified by Bureau.	No. notified by Medical Practitioners.	Total Notifications.
1909-10	—	198	198
1910-11	59	184	243
1911-12	111	198	309

ASSISTANCE TO PATIENTS.

Sputum flasks and disinfectants have been given away to all cases requiring them.

Pamphlets giving advice to "consumptives" and "those looking after them" have been printed in English, Zulu, Tamil, Gujrati, and Hindi, and distributed where requisite.

Some few cases have had medicines given to them, when there was urgent need and the patients unable to pay.

The Durban Benevolent Society has aided a few cases with money, meat, milk, etc.

The Bureau purchased some sail cloth and some split bamboo blinds, which were lent to patients. On one occasion a special verandah was fitted up for two cases in the same house.

Air-cushions and thermometers have been lent to patients.

LABORATORY WORK.

256 specimens of Sputum have been examined in the year, and Tubercle Bacilli found in 53 cases.

OTHER MISCELLANEOUS WORK.

From the last week in January, 1912, up to the end of the year, I have had a large amount of work to do, other than dealing with Tuberculosis.

I have done 11,660 vaccinations of Europeans, Natives and Indians.

I have paid 112 visits to the Small-pox Hospitals on Back Beach and Congella.

I have made 41 visits to Plague, Small-pox and miscellaneous cases other than Tuberculosis.

Further, I have examined and passed for duty or treated if sick:—

Policemen	74
Tramway Motormen	27
Firemen	19

and in addition examined and written reports on numerous Laboratory specimens.

In conclusion, I wish to express my satisfaction in the work of the Bureau Nurse, Sister Twamley. She has been of great assistance in the Consulting Room, and the visits she has paid to patients' homes have enabled me to keep in touch with the actual cases, and been useful and helpful to the patients themselves. The Indian Health Visitor and Interpreter has been of great assistance in following up the Indian and Native cases. This is often a thankless task, as the Indian in many cases prefers to be left alone, but as far as I can see he has done this work conscientiously and tactfully.

BASIL ADAMS, M.D.,

Tuberculosis Medical Officer.

Annexure "A."]

PLAGUE.

The Port of Durban, communicating as it does with the Ports of many Plague infected countries, must be regarded as always liable to the invasion of Plague from such sources. Between Durban and Indian Ports there is considerable shipping traffic, and it is well known that Plague has been in existence in India for many years past. From Government Reports it can be seen that in India during the week ending December 16, 1911—a month before Plague broke out in Durban—there were 9,951 cases of Plague and 8,191 deaths. The ports of Bombay, Calcutta, and Karachi were, during that week, and for many weeks and months previously, Plague infected. Singapore, in the Straits Settlements, was a Plague infected port at that time, and Hong Kong, in China, was in a similar condition. Plague infected ports existed in North and South America, and coming nearer to South Africa, there were in November several cases of Plague in Mauritius, and in September Plague existed in Zanzibar.

Plague is universally recognised as one of the most dangerous of all infectious diseases, and owing to the extensive ravages it usually makes when introduced into a community, all civilised countries have bestowed special consideration upon this disease. In 1903 delegates from many nations met at an International Conference in Paris, at which a Convention was made in regard to Plague and Cholera, the provisions of which were to be observed by the countries signing such Convention on the appearance of Plague or Cholera in their territory. The Government of Natal became a signatory to this Convention. There is much in the Convention of Paris, 1903, to which no exception can be taken, but Section 3, dealing with measures of ports and land frontiers, is, in my opinion, inadequate to properly safeguard the healthy port at which a ship may arrive from a port infected with Plague at the time of its departure. It appears to me that those who drafted the Convention were guided more by commercial interests than regard for Public Health. To say that "a ship shall be regarded as *healthy*, notwithstanding its having come from an infected port, if there has been no death from or case of Plague on board either before departure, or during the voyage, or on arrival," is in my opinion to take far too great a risk on the part of a healthy port to the possibilities of Plague infection being introduced. From what we know of the etiology of Plague, it is recognised that time is necessary in order to develop an unusual mortality amongst rats, and the conveyance of infection from such rats by the agency of fleas to human beings. The three weeks concerned in a voyage from India to Port Natal cannot be said to eliminate the possibility of virulent Plague infection being on board, although a human case of this disease has not occurred nor the existence of excessive mortality amongst rats been observed during the voyage.

One way that would give everyone a great feeling of security would be to regard a ship coming from a Plague infected port as being liable to contain infection, and to require in every case the fumigation of such vessel, by such methods as will ensure the destruction of all rats and their attendant fleas. Were such a procedure insisted upon it would practically eliminate the possibility of Plague infection being conveyed to Durban, and would perhaps have a salutory effect on certain Eastern ports that have been continuously Plague infected for years.

In connection with the recent outbreak of Plague in Durban there can be no two opinions as regards the mode of its entrance into this Borough. The infection was undoubtedly brought to Durban by shipping. For a time the disease was confined to the wharves and wharf sheds. The first victims of the disease were persons employed in the sheds and on the wharves. From the wharves the disease spread apparently in two ways: first, by the transportation of goods from the wharves to distant parts; and, second, by the migration of

rats from infected wharves to the nearest buildings and properties. Produce, which must have contained infection, was transported in one instance a distance of nearly three miles, and in another nine miles, from wharves which were Plague infected. As regards the migration of rats from infected foci, it can readily be understood that as a result of the active measures taken to capture and destroy vermin at the wharves and the wholesale disinfecting measures carried out in that area, the surviving rat population found itself in somewhat hot quarters. Jeck's Buildings, the Maritime Buildings, and other buildings in the neighbourhood of Alexandra Square had the infection in all probability conveyed to them by Plague infected rats migrating from the wharves and sheds.

As long as Plague infection remained on the wharves or in Government premises, such as Bond Stores, King's Warehouse, Railway Goods Sheds, all precautionary measures were taken and carried out by and at the expense of Government. When, however, it invaded the Borough by crossing that imaginary line which separates the Government areas from the Borough, the duty of preventing the spread of infection and carrying out disinfection and other repressive measures became a Corporation matter.

During the recent Plague outbreak the active co-operation of the Health Departments of Port and Borough was maintained.

HISTORY OF THE RECENT OUTBREAK, 1912.

On 15th January, 1912, the District Surgeon (Dr. Birtwell) brought to the Municipal Bacteriological Laboratory parts of the spleen, liver, lung and an enlarged inguinal gland which he had removed from the body of a European at the Public Mortuary the previous day. The patient had died after an illness of less than 40 hours, and had not been seen by a medical practitioner prior to death.

While carrying out the autopsy Dr. Birtwell recognised the cause of death to be a septicaemic disease, and the possibility of the disease being Plague occurred to him. A smear from the spleen on being stained and examined microscopically, showed numerous bi-polar staining organisms identical in shape and size with the Bac: Pestis. Although recognising that further bacteriological work was necessary in order to be absolutely positive as to the bacilli being those of Plague, I deemed it advisable to acquaint the Health Officers of the Province and Port Health Department with the result of my preliminary examination. Dr. Haydon kindly visited my laboratory at once, where, after personally making slides from the spleen and lymphatic gland, he concurred with the opinion I had already expressed. I gave him part of the lymphatic gland and spleen in order that he might carry out independent bacteriological examinations at his own laboratory. I had already acquainted His Worship the Mayor and Town Clerk of what I had discovered, and a telegram was sent to the Secretary for the Interior, acquainting him with the position as regards the probability of Plague being present in Durban. Guinea pigs were inoculated and cultures were made on various media, all of which subsequently went to prove that the patient had died from Bubonic Plague. The deceased, who was employed as a checker by the African Boating Company, had been working in "E" Shed on Monday, 8th; Tuesday, 9th; and Wednesday, 10th; and in "F" Shed on Thursday, 11th, and part of Friday, 12th January, on which date he left work feeling sick. The Port Health Officer informed me that dead rats had been found recently in "E" Shed, but on examination none had shown organisms resembling the Bac: Pestis.

Acting on the provisional diagnosis of Plague, I got into communication with the Addington Hospital and Indian Hospitals and medical men generally, and suggested to them that it would be advisable to be on the outlook for Plague amongst those whom they might be called to attend.

Early next morning, an Indian, employed by the Government Harbour Department as a sweeper in sheds and on wharves, was discovered sick in the

Harbour Barracks, and in the opinion of the Port Health Officer was suffering from Plague. He was removed to the Plague Hospital, Salisbury Island, where he died.

The occurrence of this second case with all the typical signs and symptoms of Plague settled definitely the fact that Plague infection was in existence in the Point area, independent of the bacteriological investigations relating to the first case which were still proceeding. It was considered very probable that infection would spread into the Borough, and His Worship the Mayor therefore deemed it advisable at this stage to get into communication with the Minister for the Interior in order that arrangements might be made between Government and the Municipality to deal with the disease should it extend beyond the Government area.

The Borough was faced with the difficulty that the Public Health Act, Natal, had lapsed a fortnight previously.

The Minister for the Interior, in reply to the communication from His Worship the Mayor, despatched Dr. Arnold, Acting Health Officer for the Union, and Dr. Pitchford, Government Bacteriologist, and a meeting was held on the 18th January in the Mayor's Parlour, at which His Worship the Mayor, Hon. R. Jameson (Chairman of the Sanitary Committee), Dr. Arnold, Dr. Pitchford, the Assistant Town Clerk, and myself were present.

The following points were agreed upon at this interview, and were subsequently approved by the Minister for the Interior:—

1. The Health Officer for the Union agreed to undertake the treatment at Salisbury Island of all cases of Bubonic Plague occurring within the Borough of Durban, and that all expenses in connection therewith would be borne by the Union Government.

2. The Mayor, on behalf of the Corporation, agreed to transport all Bubonic patients or suspects to the wharf at the expense of the Municipality.

3. It was jointly agreed that in the public interests it is desirable that a Plague Committee be immediately appointed for the purpose of taking decisive action to meet conditions from time to time arising. It was suggested that such Committee should consist of four members, two to be appointed by Government and two by the Corporation. The Medical Officers of the Government and the Corporation would attend all the meetings as advisory members without the power to vote.

4. It was suggested that all precautionary measures such as rat-catching and disinfecting within the Borough should be carried out under the supervision of the Borough Medical Officer of Health in compliance with the decisions of the Plague Committee.

5. No action, the effect of which would be to incur liability for claims for damage to goods or property or deprivation of use of property or affecting in any way the liberty of the person or the handling of goods, was to be taken by the Committee until authorised thereto by the Government.

6. It was mutually agreed that there should be hearty co-operation between the Government and Municipal Health Officers throughout, so that each party should be kept advised of everything happening within each other's jurisdiction.

Following from Paragraph 3 above, a Local Plague Committee was formed, consisting of the Chief Magistrate (Mr. Percy Binns), Chairman, and the Divisional Superintendent of Railways (Mr. Perrott), as representing Government, the Mayor (Mr. F. C. Hollander), and Town Councillor Hon. R. Jameson, as representing the Municipality, with Mr. W. P. M. Henderson, Assistant Town Clerk, as Secretary to the Committee.

Harbour Barracks, and in the opinion of the Port Health Officer was suffering from Plague. He was removed to the Plague Hospital, Salisbury Island, where he died.

The occurrence of this second case with all the typical signs and symptoms of Plague settled definitely the fact that Plague infection was in existence in the Point area, independent of the bacteriological investigations relating to the first case which were still proceeding. It was considered very probable that infection would spread into the Borough, and His Worship the Mayor therefore deemed it advisable at this stage to get into communication with the Minister for the Interior in order that arrangements might be made between Government and the Municipality to deal with the disease should it extend beyond the Government area.

The Borough was faced with the difficulty that the Public Health Act, Natal, had lapsed a fortnight previously.

The Minister for the Interior, in reply to the communication from His Worship the Mayor, despatched Dr. Arnold, Acting Health Officer for the Union, and Dr. Pitchford, Government Bacteriologist, and a meeting was held on the 18th January in the Mayor's Parlour, at which His Worship the Mayor, Hon. R. Jameson (Chairman of the Sanitary Committee), Dr. Arnold, Dr. Pitchford, the Assistant Town Clerk, and myself were present.

The following points were agreed upon at this interview, and were subsequently approved by the Minister for the Interior:—

1. The Health Officer for the Union agreed to undertake the treatment at Salisbury Island of all cases of Bubonic Plague occurring within the Borough of Durban, and that all expenses in connection therewith would be borne by the Union Government.

2. The Mayor, on behalf of the Corporation, agreed to transport all Bubonic patients or suspects to the wharf at the expense of the Municipality.

3. It was jointly agreed that in the public interests it is desirable that a Plague Committee be immediately appointed for the purpose of taking decisive action to meet conditions from time to time arising. It was suggested that such Committee should consist of four members, two to be appointed by Government and two by the Corporation. The Medical Officers of the Government and the Corporation would attend all the meetings as advisory members without the power to vote.

4. It was suggested that all precautionary measures such as rat-catching and disinfecting within the Borough should be carried out under the supervision of the Borough Medical Officer of Health in compliance with the decisions of the Plague Committee.

5. No action, the effect of which would be to incur liability for claims for damage to goods or property, or deprivation of use of property or affecting in any way the liberty of the person or the handling of goods, was to be taken by the Committee until authorised thereto by the Government.

6. It was mutually agreed that there should be hearty co-operation between the Government and Municipal Health Officers throughout, so that each party should be kept advised of everything happening within each other's jurisdiction.

Following from Paragraph 3 above, a Local Plague Committee was formed, consisting of the Chief Magistrate (Mr. Percy Binns), Chairman, and the Divisional Superintendent of Railways (Mr. Perrott), as representing Government, the Mayor (Mr. F. C. Hollander), and Town Councillor Hon. R. Jameson, as representing the Municipality, with Mr. W. P. M. Henderson, Assistant Town Clerk, as Secretary to the Committee.

Paragraph 5 had the effect of unnecessarily delaying the carrying out of measures essential for the prevention of the spread of the disease, particularly at the beginning of the outbreak. The attention of Government was drawn to the matter, and a request was made that fuller powers should be devolved on the Committee in order to secure greater expedition in carrying out the Committee's functions. Power was subsequently given to the Committee to incur expenditure on measures of disinfection and routine work and to act at once in cases of emergency, but any measures involving claims for compensation were first to be submitted to Government for approval before taking action.

Certain By-laws relating to Plague that had been approved by the Town Council in December, were submitted to the Executive Committee of the Provincial Council for consideration. A special meeting of the Executive was held in order to deal with what was recognised as a matter of extreme urgency, and the By-laws were gazetted on the 26th January, 1912.

By reference to previous Plague outbreaks in the Borough, it will be noted that the Indian population, although constituting only a quarter of the inhabitants, have usually borne the brunt of the incidence of Plague. Many factors have doubtless operated to produce this result, some of which were beyond the power of the Indian to obviate or prevent, but on the other hand it was clearly recognised that ignorance, carelessness, and the general unsatisfactory habits of this race, produced conditions favourable to the spread of Plague. It was believed that sanitary improvements would be more readily and willingly effected with beneficial results to all if an Indian Plague Committee was formed to act as voluntary sanitary workers, who would carry out instructions issued by this Department. The Committee was duly formed, and was of very material assistance. The Editor of "Indian Opinion" took every opportunity which his paper afforded to impress upon his readers the necessity for increasing the cleanliness of their homes and surroundings, the evils of over-crowding, the necessity for ventilation, and their public duty to report to the Public Health Department any mortality amongst rats or mice.

One of the first recommendations made by the Plague Committee was to the effect that in any Public Health legislation contemplated by Government it is desirable that special provision should be made to throw the obligation upon householders, storekeepers, and owners of property at all times to keep their premises free from rats.

The following circular was advertised in the local Press, and copies were delivered by Constables, Sanitary Inspectors, etc., at all places of business where foodstuffs and produce were stored or manufactured:—

DURBAN CORPORATION.

NOTICE TO OWNERS, OCCUPIERS, STOREKEEPERS, AND OTHERS.

The Borough of Durban being threatened with an outbreak of Plague, the Town Council desires the hearty co-operation of Owners, Occupiers, Storekeepers and others in order to prevent the incidence and spread of the disease, and would draw attention to the following facts and suggestions. To be effective the efforts must be general.

Plague is essentially a rat disease, and is conveyed to human beings from sick rats by means of fleas. Rats, therefore, must be exterminated as far as possible, and the attack upon them should be simultaneous throughout the Borough, and commenced at once.

In addition to the destruction of rats, every possible effort should be made to exclude them from dwellings, warehouses, and places of business generally.

Kitchen refuse and collections of garbage, refuse receptacles, etc., afford them food supplies, and consequently attract rats to dwellings. All kitchen and household refuse should be deposited in iron bins, provided with a tightly-fitting lid.

Paragraph 6 had the effect of unnecessarily delaying the carrying out of measures essential for the prevention of the spread of the disease, particularly at the beginning of the outbreak. The attention of Government was drawn to the matter, and a request was made that fuller powers should be devolved on the Committee in order to secure greater expedition in carrying out the Committee's functions. Power was subsequently given to the Committee to incur expenditure on measures of disinfection and routine work and to act at once in cases of emergency, but any measures involving claims for compensation were first to be submitted to Government for approval before taking action.

Certain By-laws relating to Plague that had been approved by the Town Council in December, were submitted to the Executive Committee of the Provincial Council for consideration. A special meeting of the Executive was held in order to deal with what was recognised as a matter of extreme urgency, and the By-laws were gazetted on the 3rd January, 1912.

By reference to previous Plague outbreaks in the Borough, it will be noted that the Indian population, although constituting only a quarter of the inhabitants, have usually borne the brunt of the incidence of Plague. Many factors have doubtless operated to produce this result, some of which were beyond the power of the Indian to obviate or prevent, but on the other hand it was clearly recognised that ignorance, carelessness, and the general unsatisfactory habits of this race, produced conditions favourable to the spread of Plague. It was believed that sanitary improvements would be more readily and willingly effected with beneficial results to all if an Indian Plague Committee was formed to act as voluntary sanitary workers, who would carry out instructions issued by this Department. The Committee was duly formed, and was of very material assistance. The Editor of "Indian Opinion" took every opportunity which his paper afforded to impress upon his readers the necessity for increasing the cleanliness of their homes and surroundings, the evils of over-crowding, the necessity for ventilation, and their public duty to report to the Public Health Department any mortality amongst rats or mice.

One of the first recommendations made by the Plague Committee was to the effect that in any Public Health legislation contemplated by Government it is desirable that special provision should be made to throw the obligation upon householders, storekeepers, and owners of property at all times to keep their premises free from rats.

The following circular was advertised in the local Press, and copies were delivered by Constables, Sanitary Inspectors, etc., at all places of business where foodstuffs and produce were stored or manufactured:—

DURBAN CORPORATION.

NOTICE TO OWNERS, OCCUPIERS, STOREKEEPERS, AND OTHERS.

The Borough of Durban being threatened with an outbreak of Plague the Town Council desires the hearty co-operation of Owners, Occupiers, Storekeepers and others in order to prevent the incidence and spread of the disease, and would draw attention to the following facts and suggestions. To be effective the efforts must be general.

Plague is essentially a rat disease, and is conveyed to human beings from sick rats by means of fleas. Rats, therefore, must be exterminated as far as possible, and the attack upon them should be simultaneous throughout the Borough, and commenced at once.

In addition to the destruction of rats, every possible effort should be made to exclude them from dwellings, warehouses, and places of business generally.

Kitchen refuse and collections of garbage, refuse receptacles, etc., afford them food supplies, and consequently attract rats to dwellings. All kitchen and household refuse should be deposited in iron bins, provided with a tightly-fitting lid.

In order to destroy rats, trapping and poisoning are the most readily available methods. The most useful form of trap is a spring trap baited with ham. The ordinary arsenic or phosphorous pastes sold as rat poisons are usually satisfactory. The Durban Corporation, however, will provide from the Sanitary Office, free of charge, a sufficient quantity of rat poison on application.

Any rats found dead should at once be placed in a small tin containing enough disinfectant or paraffin to cover them. Dead rats should not be touched or lifted by hand but by means of tongs or a couple of sticks. If, when discovered, decomposition has considerably advanced, they should be burned, but fresh rats should be sent to the Sanitary Office, Main Police Station Buildings, West Street, or if more convenient to the Port Health Department, Point.

Should any sick rats be noticed about any premises—and sick rats are chiefly recognised by their sluggish movements—information should at once be telephoned to the Medical Officer of Health, Telephone No. 471.

As the flea is known to be the principal carrier of Plague from Rat to Man special attention should be paid to personal and domestic cleanliness.

P. MURISON, M.D.,

Medical Officer of Health.

A few days later the following notice was advertised in the local newspapers for the purpose more particularly of bringing to the notice of Storekeepers, Produce Dealers, etc., certain By-laws that had recently come into force:—

DURBAN CORPORATION.

Public Health Dept.,

Town Hall, Durban.

Jan. 29, 1912.

Sir,—

It will be within your knowledge already that Plague has made its appearance within the Borough of Durban, and the attention of all Dealers in Produce and Employers of Coloured Labourers is specially directed to the provisions of the By-laws of the said Borough bearing on matters of sanitation, the protection of premises from rats and vermin, the destruction of rats and vermin, and the medical examination of any coloured labourer who may be sick.

Any person failing to comply with any of the said By-laws made be proceeded against by prosecution, and any such person may also run the risk of being refused compensation in the event of any loss or damage to goods or property which may be destroyed or injured in the carrying out of any works or operations which would be rendered necessary at any premises or place where Plague might make its appearance.

The By-laws more particularly referring to Rats and Plague are as follows:

"Section 7. *Relating to Nuisances.* It shall be the duty of every occupier "of premises to prevent, as far as possible, mosquitoes, flies, rats, or other "vermin from developing or being harboured thereon, and any such occupier "who shall fail to comply with the provisions hereof on his attention being "directed thereto, shall be deemed to have contravened this By-law."

"Section 12. *Relating to Collection and Removal of Refuse.* Every
" occupier of premises shall provide and shall maintain in good order and
" repair on his premises a receptacle impervious to moisture, for the temporary
" depositing therein of house and stable refuse, and refuse of a similar character
" produced or collected on such premises, and which receptacle such occupier
" shall so arrange and keep so as to be easily and conveniently accessible or
" portable for the collection and removal of the refuse deposited therein.

" He shall cause such receptacle, when not being actually used, to be kept
" so closely covered as to prevent vermin and flies from gaining access to the
" contents of such receptacle.

" Any such occupier of premises failing to comply with the provisions
" hereof shall be deemed to have contravened this By-law."

" Section 76. *Relating to Infectious Disease and Quarantine.* Every
" person, keeping, storing, or dealing in any corn, grain, rice, meal, flour,
" forage, hay, fodder, sugar, potatoes, foodstuffs, or fruit, shall comply with the
" following regulations:—

" (a) Such goods, articles, or materials shall be kept or stored at
" all times in such a manner as will protect them as far as possible
" from rats and mice.

" (b) Any building or store in which any such goods, articles, or
" materials are kept or stored shall be maintained as far as possible free
" from rats and mice.

" (c) Such building or store shall also, as regards the floor, walls,
" and roof, and all other parts thereof, be made and kept inaccessible
" to rats and mice.

" In addition to the foregoing any person as aforesaid shall carry out such
" other works as may be notified to him by the Borough Medical Officer of Health
" as being necessary for the prevention of the spread of Plague."

" Section 77. If at any time the Borough is affected by or threatened with
" Plague or Small-pox, and notice to this effect is published in one or other of
" the local newspapers, every person employing coloured workers in the said
" Borough shall ascertain each morning whether such workers are sick. If
" any such workers shall be sick the employer of such worker shall immediately
" engage the services of a qualified medical practitioner to examine such worker
" then and each day subsequently until he shall be restored to health. Such
" employer shall obtain from the medical practitioner a certificate stating the
" nature of the sickness from which such worker is suffering, and such medical
" practitioner shall clearly state in such certificate if there is anything in the
" nature of the sickness to arouse any suspicion of the disease being Plague
" or Small-pox.

" In the event of any such statement being endorsed on the certificate the
" employer shall forthwith despatch the certificate to the Medical Officer of
" Health, together with the name in full and the accurate address of the place
" where the patient is residing or is to be found.

" It shall also be the duty of the employer in such case to make adequate
" provision against the possibility of the person so sick with symptoms suspicious
" of Plague or Small-pox leaving the place where he then is until he shall have
" been dealt with or removed by order of the Medical Officer of Health.

" Every employer hereinbefore referred to shall keep proper records of the
" persons in his employ, and of cases of absence and of sickness amongst them,
" which records, as well as all medical certificates granted under the foregoing
" regulations, shall at all times be open to inspection by the Medical Officer of

"Section 12. *Relating to Collection and Removal of Refuse.* Every "occupier of premises shall provide and shall maintain in good order and "repair on his premises a receptacle impervious to moisture, for the temporary "depositing therein of house and stable refuse, and refuse of a similar character "produced or collected on such premises, and which receptacle such occupier "shall so arrange and keep so as to be easily and conveniently accessible or "portable for the collection and removal of the refuse deposited therein.

"He shall cause such receptacle, when not being actually used, to be kept "so closely covered as to prevent vermin and flies from gaining access to the "contents of such receptacle.

"Any such occupier of premises failing to comply with the provisions "hereof shall be deemed to have contravened this By-law."

"Section 76. *Relating to Infectious Disease and Quarantine.* Every "person, keeping, storing, or dealing in any corn, grain, rice, meal, flour, "forage, hay, fodder, sugar, potatoes, foodstuffs, or fruit, shall comply with the "following regulations:—

"(a) Such goods, articles, or materials shall be kept or stored at "all times in such a manner as will protect them as far as possible "from rats and mice.

"(b) Any building or store in which any such goods, articles, or "materials are kept or stored shall be maintained as far as possible free "from rats and mice.

"(c) Such building or store shall also, as regards the floor, walls, "and roof, and all other parts thereof, be made and kept inaccessible "to rats and mice.

"In addition to the foregoing any person as aforesaid shall carry out such "other works as may be notified to him by the Borough Medical Officer of Health "as being necessary for the prevention of the spread of Plague."

"Section 77. If at any time the Borough is affected by or threatened with "Plague or Small-pox, and notice to this effect is published in one or other of "the local newspapers, every person employing coloured workers in the said "Borough shall ascertain each morning whether such workers are sick. If "any such workers shall be sick the employer of such worker shall immediately "engage the services of a qualified medical practitioner to examine such worker "then and each day subsequently until he shall be restored to health. Such "employer shall obtain from the medical practitioner a certificate stating the "nature of the sickness from which such worker is suffering, and such medical "practitioner shall clearly state in such certificate if there is anything in the "nature of the sickness to arouse any suspicion of the disease being Plague "or Small-pox.

"In the event of any such statement being endorsed on the certificate the "employer shall forthwith despatch the certificate to the Medical Officer of "Health, together with the name in full and the accurate address of the place "where the patient is residing or is to be found.

"It shall also be the duty of the employer in such case to make adequate "provision against the possibility of the person so sick with symptoms suspicious "of Plague or Small-pox leaving the place where he then is until he shall have "been dealt with or removed by order of the Medical Officer of Health.

"Every employer hereinbefore referred to shall keep proper records of the "persons in his employ, and of cases of absence and of sickness amongst them, "which records, as well as all medical certificates granted under the foregoing "regulations, shall at all times be open to inspection by the Medical Officer of

"Health, or by any officer acting under his instructions. Any employer or
"medical practitioner as hereinbefore mentioned who shall fail to comply with
"any of these provisions herein contained, shall be deemed to have contravened
"this By-law.

"Yours faithfully,

"P. MURISON, M.D.,

"Medical Officer of Health."

METHODS OF RAT DESTRUCTION EMPLOYED.

When Plague made its appearance in the Borough, the Corporation immediately formed a Rat Brigade consisting of three Europeans, which number was subsequently increased to six. These rat-catchers were afterwards taken over and controlled by the Plague Committee, and acted under the superintendence of the Inspector of Nuisances.

At the beginning of the outbreak a supply of traps—both cage and break-back type—was obtained. These were baited with fish, meat, ham, cheese, etc., but it was very early seen that our experience in the previous outbreak was to be repeated, namely, that traps are of very little use in emergency work of exterminating rats. This is not to be taken as a dictum for all times, because the regular use of traps by householders and occupiers to keep down the rat population at ordinary times, is strongly recommended, but at the time when Plague exists, it is necessary to find some speedier and more certain method of exterminating rats. After a very short experience the use of the traps was virtually discontinued, and the Rat-men were instructed to use poison instead.

Each rat-catcher had to keep the following record of his operations in a book:—

Nature of premises. Occupier's name. No. of pieces of poison laid down. Objections, if any, to poison being laid on premises. No. of pieces of poison bait removed since last visit. Remarks of occupier as to presence of rats on premises.

RAT POISON.

The rat poison used at the beginning was obtained from Storekeepers in Durban and elsewhere, but the quantities used made it advisable to attempt the manufacture of this ourselves until a supply could be imported from Home.

Various mixtures containing arsenic and strychnine were used, but with only a limited amount of success.

Barium Carbonate used in the manner recommended by the United States Agricultural Department was extensively tried and was considered fairly successful, but our greatest successes were obtained from the use of a poison called "Extermino." This is a phosphorous paste, and experiments made with samples some time prior to the outbreak of Plague, showed that it had a high efficiency. Accordingly arrangements were made for a regular supply to be shipped weekly by the makers in Great Britain.

Another method of extermination used in some places was the fumigation of the rat runs with an apparatus designed for white ant destruction. This machine provides a mixture of volatilised arsenous acid, with sulphurous acid and carbon monoxide gases. Where a well-defined rat run exists this process could be regarded as satisfactory, but in such places as the banks of a stream where usually extensive burrows are present, and where rats could escape under water, the results obtained were disappointing.

In any future outbreak I would suggest that a trial be made of the vapour of carbon bisulphide under pressure in rat runs, etc.

REWARD FOR RATS.

In order to expedite the destruction of rats by householders, etc., and to gain information regarding the result of such efforts, the Plague Committee considered it advisable to offer a reward for rats certified by a householder to have been caught or found dead within the triangular area bounded by the Indian Ocean, the Point Railway Line, and Depot Road. The reward amounted to threepence per rat or mouse. Very few rats or mice were received in response to this offer.

As soon as it became known that Plague had invaded the Point area, Mr. Daugherty with his usual energy and thoroughness, initiated a special scavenging crusade in that district. For that purpose extra men and carts were employed, and the whole area speedily cleared of all refuse and rubbish which might afford food or harbour for rats.

Three of the Assistant Inspectors from other districts were drafted into the Point area in order to give all premises immediate and thorough inspection. By his advice, instruction and example, Mr. Daugherty stimulated his staff to the highest efforts.

To assist the Sanitary Department in speedily dealing with all places liable to invasion in the Borough, it was also thought desirable to have two highly intelligent men employed to make a systematic visitation and inspection of premises for the purpose of drawing attention of occupiers to their duty under the Borough By-laws, etc., and noting the existence, if any, of structural defects that might allow of the ingress or egress of rats. Their work also included making notes of the nature and extent of precautionary measures taken by occupiers for the capture or destruction of rats. The object of such work was to obtain rapid and reliable information in regard to rats on premises in localities where infection might be considered probable, and the warning at such visitation was intended to be used as evidence in any litigation that might ensue. The Chief Constable supplied two of his best officers for this work. Their reports came in daily, and any conditions adversely reported upon by them were at once taken in hand by our staff.

Mr. Chubb, F.Z.S., Curator of the Municipal Museum, to whom at various times several consignments of rats were submitted, reported the species in each instance to be *Mus Rattus*. This rat possesses a sharp snout, is large eared, and has a tail exceeding in length that of its head and body. *Mus Decumanus* is also present in Durban, but is probably more common at the Point, as many specimens taken in that area have been examined by Dr. Park Ross at his Laboratory. *Mus Decumanus* has a rounder snout, smaller ears, and a shorter stumpier tail—not exceeding in length that of the body of the rat.

In any future outbreak I would suggest that a trial be made of the vapour of carbon bisulphide under pressure in rat runs, etc.

REWARD FOR RATS.

In order to expedite the destruction of rats by householders, etc., and to gain information regarding the result of such efforts, the Plague Committee considered it advisable to offer a reward for rats certified by a householder to have been caught or found dead within the triangular area bounded by the Indian Ocean, the Point Railway Line, and Depot Road. The reward amounted to threepence per rat or mouse. Very few rats or mice were received in response to this offer.

As soon as it became known that Plague had invaded the Point area, Mr. Daugherty with his usual energy and thoroughness, initiated a special scavenging crusade in that district. For that purpose extra men and carts were employed, and the whole area speedily cleared of all refuse and rubbish which might afford food or harbour for rats.

Three of the Assistant Inspectors from other districts were drafted into the Point area in order to give all premises immediate and thorough inspection. By his advice, instruction and example, Mr. Daugherty stimulated his staff to the highest efforts.

To assist the Sanitary Department in speedily dealing with all places liable to invasion in the Borough, it was also thought desirable to have two highly intelligent men employed to make a systematic visitation and inspection of premises for the purpose of drawing attention of occupiers to their duty under the Borough Bye-laws, etc., and noting the existence, if any, of structural defects that might allow of the ingress or egress of rats. Their work also included making notes of the nature and extent of precautionary measures taken by occupiers for the capture or destruction of rats. The object of such work was to obtain rapid and reliable information in regard to rats on premises in localities where infection might be considered probable, and the warning at such visitation was intended to be used as evidence in any litigation that might ensue. The Chief Constable supplied two of his best officers for this work. Their reports came in daily, and any conditions adversely reported upon by them were at once taken in hand by our staff.

Mr. Chubb, F.Z.S., Curator of the Municipal Museum, to whom at various times several consignments of rats were submitted, reported the species in each instance to be *Mus Rattus*. This rat possesses a sharp snout, is large eared, and has a tail exceeding in length that of its head and body. *Mus Decumanus* is also present in Durban, but is probably more common at the Point, as many specimens taken in that area have been examined by Dr. Park Ross at his Laboratory. *Mus Decumanus* has a rounder snout, smaller ears, and a shorter stumpier tail—not exceeding in length that of the body of the rat.

WEEKLY RETURNS OF RATS BROUGHT TO PUBLIC HEALTH DEPARTMENT LABORATORY FOR EXAMINATION.

1912. Week Ending.	No. of Rats examined.	No. found to be infected with Plague.
Jan. 20	2	—
„ 27	74	9
Feb. 4	97	1
„ 10	125	—
„ 17	57	—
„ 24	56	—
Mar. 2	52	5
„ 9	57	6
„ 16	60	4
„ 23	84	1
„ 30	47	1
April 6	6	3
„ 13	32	
„ 20	21	—
„ 27	25	—
	59	2
May 4		
„ 11	155	1
„ 18	53	—
„ 25	20	—
	3	—
June 1	9	
„ 8	32	
„ 15	37	
„ 22	31	—
„ 29	9	—
July 6	14	—
„ 13	3	—
„ 20	14	—
„ 27	10	—
„ 31	2	—
Totals	1,242	33

The Acting Assistant Medical Officer for the Province informs me that during the same period, 1,075 rats were examined at the Port Health Officer's Laboratory, and 39 found infected with Plague. This last return embraces consignments of rats received from private firms in the Point area, as well as those sent from the wharves.

In reference to these numbers, the Government Pathologist (Dr. G. Park Ross) states:—"The light incidence of Pestis infection reflected is partly due to the circumstance that as soon as any premises were shown to harbour infected rats, examination of rats from such premises was discontinued until after disinfection measures had been carried out, when it was again resumed to test the efficacy of such measures."

DESTRUCTION OF FLEAS.

Of no less importance than the rat in the dissemination of Plague is the flea, for while the rat is like man only a victim of the disease, the flea so far as is known is the actual agent which conveys the infection from rat to man. It is therefore a matter of supreme importance not only to do all that is possible to exterminate fleas, but also to prevent their increase.

The most common rat flea in tropical countries is that known to entomologists as *Xenopsylla Cheopis*. Mr. Chubb kindly examined a large number of fleas from rats brought to my laboratory and identified them as belonging to that species. Specimens were also sent to Hon. N. Charles Rothschild, the well-known authority on fleas, who corroborated Mr. Chubb's classification of the species. This species readily feeds on human beings.

In view therefore of the importance of the flea in spreading Plague, means had to be adopted to kill fleas which might have left infected rats and be capable of infecting other rats and even human beings. For this purpose a mixture termed a pulicide was employed. The Indian Plague Commission recommended a mixture of Cyllin, petrol and water, but experiments made with that preparation on bugs did not give us satisfaction and confidence in its use. The following mixture, however, was found to kill almost instantly fleas, bugs and cockroaches, and it was used extensively throughout the outbreak:—One part soft soap (whale oil), dissolved thoroughly in a little hot water. To this add four parts of paraffin (cheapest obtainable). Mix thoroughly so as to obtain a proper emulsion, and add eight parts of water to one of the emulsion. This is to be freely sprayed about buildings, particularly the floors and grounds. To make in quantity take a 40 gallon cask, and use 10 lbs. of soap and one 4 gallon tin of paraffin as directed above. Add sufficient water to fill the cask, stirring all the time. This preparation should not be allowed to stand for any length of time, but should be made fresh as often as required. It should also be thoroughly stirred before using.

The free use of this pulicide probably had much to do with preventing the spread of the outbreak in the Borough, and it was also a splendid protection for the men who had to work in Plague infected premises.

Not only was it used in the actual infected premises, but at the Corporation Barracks, by the Harbour Department, and many large employers of labour, quantities of the pulicide were kept prepared, with which Native and Indian employees, and even in some cases Europeans, whose work might expose them to infection, anointed their bodies daily.

The preparation will be found useful by anyone wishing to treat premises, etc., for bugs or fleas.

PLAGUE AT BURMAN'S STORE.

On Saturday, 20th January, Mr. Burman, Produce Dealer, Grey Street, sent to this office two rats that had been found dead in his store that morning. One rat was in an advanced state of decomposition, the other although decomposed, was microscopically examined, but the appearances, although suggestive, were not definite as to Plague infection. Mr. Burman informed me that he had noticed in his store that morning a rat that, judging from its sluggish movements, appeared to him to be sick. I at once despatched the Inspector with several traps to be placed in his stores, and arranged with Mr. Burmen to call there early next morning (Sunday). Only one rat was caught in the traps, and on being examined was found to be free from Plague infection. The Inspector of Nuisances (Mr. Daugherty), however, during his inspection of the premises, noticed a rat very sluggish in its movements, and was able to kill it. This rat on being examined was found to contain in its internal organs typical Plague organisms. Dr. Haydon was at once communicated with and immediately visited my laboratory and confirmed the observation. We proceeded to the

store and interviewed Mr. Burman, on whom I served a notice in terms of Section 32 of the By-laws for the Borough of Durban relating to Infectious Diseases and Quarantine, as follows:—

21st January, 1912.

Mr. T. Burman,

Pine Street, Durban.

Sir,—

Owing to the existence of Plague infected rats being found in your produce store in Grey Street within the Borough of Durban this morning, I have to require you in terms of Section 32 of the By-laws for the Borough of Durban, relating to Infectious Diseases and Quarantine, to stop the removal or handling of all the goods, articles, materials and produce contained in such store, and this order of prohibition of removal of such goods, articles, materials, and produce shall remain in force until such order has been cancelled in writing by me.

Yours faithfully,

(Sgd.) P. MURISON, M.D.,

Medical Officer of Health.

Mr. Burman thereupon handed over the keys of his store to this Department.

Another rat, apparently newly dead, was removed from the roof of the building, and on examination was found to have died from Plague. We noticed on the roof the bodies of several rats in a more or less decomposed condition, some of them having been apparently dead three or four days. The work of covering ventilators, rain water down pipes, and any openings that might allow of the egress of rats, with small meshed wire netting was at once taken in hand. The premises were not left that evening till such precautionary measures had been taken as would prevent rats from escaping from the store. Poison was laid down in the form of arsenic dissolved in water. On opening one of the store doors next morning 10 rats were found lying dead within a short distance of the door. These were removed, and on examination 8 of the 10 rats were found presenting typical Plague organisms in their internal organs.

Mr. Burman's store consists of three large apartments. The walls are of brick; two of the stores have concrete floors, the middle one being of wood, with a space of nearly two feet in depth beneath; the roof consists of wood and iron. Rats were able to pass from one chamber to the other by way of the roof. The contents of the store consisted of flour, rice, sugar, etc., amounting to a value of £12,000. Living on these premises were 20 natives belonging to Mr. Burman. Their quarters were separated by a passage-way from the store. From certain appearances, and also from information supplied by the natives, these quarters were rat infested. Accordingly those natives were put into tents on an adjacent vacant piece of ground for the night. They were afterwards removed to more suitable accommodation provided by Mr. Burman. These natives, however, for the next ten days were examined daily, but no case of sickness appeared amongst them. The doors, windows, etc., of Mr. Burman's store were found to be in good order and rat proof.

Plague infection is due to the presence of a well-known and easily recognised microbe. It is essentially a rat disease, and is known to be transferred from the sick to the healthy by means of rat fleas. If a flea living on a Plague infected rat should leave its host and attach itself to a human being or another rat, infection of such human being or rat is extremely probable. The flea

carries the infection with it and inoculates its subsequent host. The blood which the flea has extracted from its Plague infected host contains Plague microbes in the alimentary track of the flea. Numbers of fleas from Plague infected rats were squashed on a slide, stained and examined, and in nearly every case Plague bacilli were easily recognised.

Plague can thus be conveyed in three ways:—

(1) By Plague infected rats;
(2) by Plague infected fleas;
(3) by infection of articles due to the deposition of infected excretions from rats and fleas.

It is not known positively by which of these means infection was conveyed to Burman's store, but that the produce removed from the infected wharf must have been in a condition of infection by one or more of the above methods is certain. It is possible that a Plague infected rat may have remained in a bale of forage and been transported from the wharf to the store. It is perhaps more probable that some of the produce may have contained fleas that had left a Plague infected rat. It has to be remembered that fleas leave a dead rat when it is beginning to cool. As to the third method, although not to be ignored in the etiology of Plague, it appears to me to be less probable as a means of communicating the disease to Burman's store than the two first mentioned. We can, however, at least say that produce from an infected wharf was carried a distance of three miles over an area which remained free from infection, and on being deposited in this store speedily developed a virulent outbreak of Plague among the rats existing there.

The object of paramount importance at this stage was to prevent the extension of Plague from this focus, and for that purpose the immediate erection of a galvanised iron fence surrounding the premises was recommended. The Plague Committee at once authorised its construction, and it was erected parallel to the walls of the building and about ten feet away. The fence was six feet high, and in addition the iron sheets were sunk 1ft. below the ground level. and all the wood work was on the outside. When this fence was erected it was recognised that there was no urgent public health necessity to deal with the contents. In the meantime the disease would spread rapidly from rat to rat by which means they would become decimated. From another point of view, of course, it was highly desirable that every effort should be made to deal with the contents of the store and render them free from infection as quickly as possible. Foodstuffs, including sugar, rapidly deteriorate under conditions such as were obtaining in Burman's store. It was now the hottest part of a sub-tropical summer, and with doors and windows kept closed the hot stagnant air was bound to act prejudicially on the produce contained therein.

The following was the method of disinfecting Burman's store brought forward by Dr. Haydon and myself and sanctioned by the Plague Committee:—

1. The stores to be made as nearly as possible air-tight. For this purpose thick wall paper was to be passed over the laps of the corrugated iron forming the roof, over the ventilators, and around doors, windows, etc., and the corrugations of the iron sheeting at the eaves were to be packed tightly with oakum.

2. Space Underneath Wooden Floor.—This to be first Claytonised and then rapidly filled with a disinfectant solution by the Fire Brigade up to the floor level. It was recognised that the lower layer of goods was likely to be damaged in the process.

3. Store Proper.—Immediately the disinfectant had been pumped into the space beneath in the manner described, the store to be subjected to the vapour of hydrocyanic acid gas. The object to be attained by this measure was the killing of all animal life in the store.

4. After 24 hours the stores to be opened, and subsequently to be disinfected by formaldehyde gas, generated by means of the action of permanganate of

potassium on formalin. Store to be closed for a further 24 hours. Afterwards the flour to be removed and the bags spread out singly so as to expose them to the action of the sun. The remainder of goods in the stores to be Claytonised.

It was believed that after these processes had been carried out it would be possible to give Mr. Burman a certificate stating that everything possible and practicable had been carried out in order to destroy infection amongst the goods in his store. From various causes a complete month was allowed to elapse before the actual work of disinfection was commenced.

To check the effect of this H.C.N. process on the animal life in the stores a number of rats in traps were carefully covered up with sacks, etc., to protect them as far as possible from the direct action of the gas. When the stores were re-opened it was found that all the rats had been killed, and the fleas they were carrying were dead.

The cubic contents of each of the three apartments roughly amounted to 60,000 cubic feet, and for each apartment 100 lbs. of cyanide, divided into four parcels of 25 lbs., was allowed. To each packet of 25 lbs. 3 gallons of strong sulphuric acid, and 1½ gallons of water were added. The above calculation is in the ratio of 16 ozs. sulphuric acid, 10 ozs. of water to 1 lb. cyanide of potassium. Wooden boxes lined with lead were used for containing the acid and cyanide to generate the gas. On the day of the disinfecting operations the outside temperature dry bulb was 86°F., inside the store temperature dry bulb 93°F. Outside wet bulb 77°F., inside wet bulb 85°F.

It was recognised that the treatment of the stores to free them from infection might involve a certain amount of damage and even destruction of the contents of the stores. Accordingly an order was issued, countersigned by the Mayor, under Section 32 of the Borough By-laws, relating to Infectious Diseases and Quarantine, authorising the Borough Medical Officer of Health to destroy or otherwise deal with such goods, as he might consider necessary to prevent the spread of infection. This order was considered necessary to comply with the By-law in the event of any damage accruing as a result of the proposed manner of disinfection of the contents of this store.

When the different processes of disinfection had been completed it was considered that all infection had been killed, and that it was therefore unnecessary to remove the bags of flour from the stores and expose them to the action of the sun, as had been arranged.

After the process of disinfection had been carried out Messrs. Deane and Goble were appointed to assess the value of goods in the store, and the probable amount of damage caused to the contents by disinfecting process.

Mr. T. Burman accepted a sum in full settlement of all claims whatsoever arising out of the action taken by the Plague Committee or the Borough Medical Officer of Health or any other officer in relation to the closing of his store. One condition made by Government was that the Corporation contribute one-third of that *ex gratia* payment.

On March 2nd I handed over to Mr. Calder, the legal representative of Mr. Burman, the keys of his Grey Street stores, along with a letter cancelling the closing order of 21st January.

JECK'S BUILDINGS.

On the 22nd January—the day following the discovery of Plague at Burman's Store—a dead rat—found in the kitchen of the caretaker's quarters of Jeck's Buildings—was taken to the Port Health Laboratory, and on examination was found to be Plague infected. The residents in these buildings were immediately removed to accommodation provided by the Town Council, and the premises and contents disinfected. A number of rats were captured and killed during this work, all of which were examined, but none found to be affected with Plague.

These premises constitute the second infected buildings in the Borough. The block is situated on the extreme edge of the Borough boundary and is contiguous to the Harbour Department area and opposite "B" Shed. Jeck's Buildings belong to Government, but are not in Government occupation, and hence come under the Public Health By-laws of the Borough.

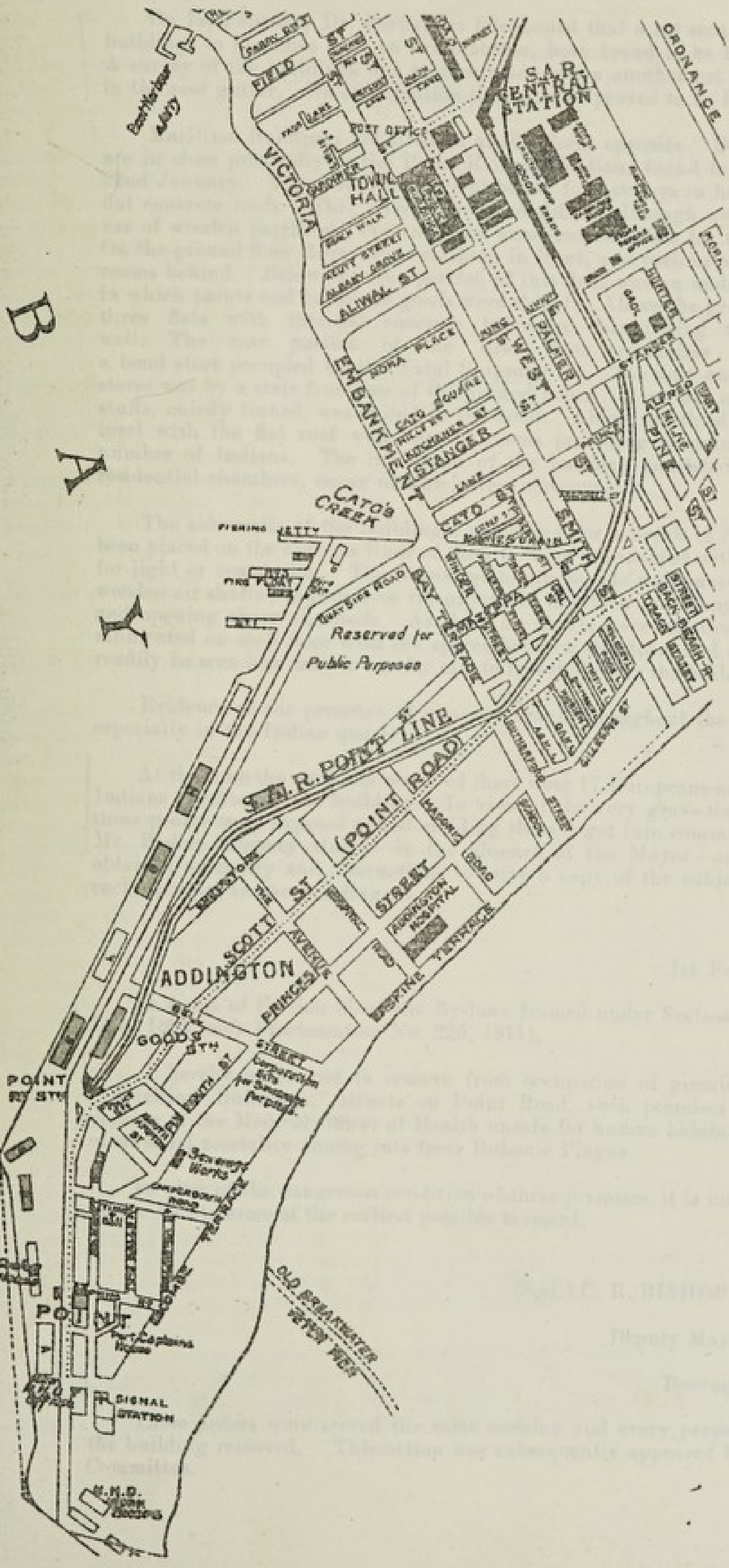
Jeck's Buildings form part of a block consisting of warehouses, offices, and a produce store. On the upper floor several European families were in residence, and in the rear accommodation had been provided for coloured employees belonging to one of the firms trading in the block. The buildings are quite modern in type and well built of brick. Strong party walls divide one store from another, but no difficulty exists for rats to move from one end of the roof to the other.

On the same day (22-1-12) as the Plague infected rat was found in Jeck's Buildings, every shed was closed by direction of the Port Health Officer, Plague infected rats having by this date been found in the following Government premises, viz., Wharf Sheds, "C," "D," "E," and "G," the Railway Goods Store, Point, King's Warehouse, Point, and the Dredger "Cetus."

The foregoing statements may be taken as the conditions of Plague infection within a week of its discovery.

Up to this point reference has been made in this report to the incidence of the disease in what is known as the Government area of the Borough. This has been done not with any intention of over-lapping the work of the Government officials responsible for that area, but simply to establish clearly the sources whence the Borough was invaded. Having done this nothing further concerning Plague in the Government area will be referred to in this report.

The subjoined map of the Point area shows the infected places and their relative positions to one another at this date:—



PLAGUE AT MARITIME BUILDINGS, POINT.

On 1st February Dr. Fernandez telephoned that a rat sent from the above buildings to his office had, on examination, been found to be Plague infected. A survey of the buildings was at once made, when another rat was found dead in the roof gutter. On examination this rat also proved to be Plague infected.

Maritime Buildings are situated at the Point opposite "D" Shed. They are in close proximity to the Point Railway Station, found to be infected on 22nd January. These buildings are of brick, four storeys in height, and have flat concrete roofs. They were in good condition, although owing to the free use of wooden partitions, etc., afforded excellent facilities for rat harbourage. On the ground floor there were two shops in front, and various offices and store-rooms behind. Below the rear portion of this floor was an underground cellar in which paints and hardware goods were stored. Above the ground floor were three flats with internal concrete balconies surrounding a long narrow well. The rear portion of the first floor comprises a free and a bond store occupied by the Natal Shipping Co. The only entrance to these stores was by a stair from one of the ground floors. A certain amount of food-stuffs, chiefly tinned, was stored in the bond. Above the third floor and on a level with the flat roof were several rooms providing accommodation for a number of Indians. The remainder of the building consisted of offices and residential chambers, many of which were unoccupied.

The side walls of the buildings, extending for a depth of 80 feet, having been placed on the extreme limit of the site, were unprovided with any openings for light or ventilation. The rooms against these side walls were ventilated by wooden air shafts running from the ground or first floor up through the building and opening above the roofs. As these air shafts were continuous, and communicated on each floor with the spaces between the floors and ceilings it will readily be seen how easy it was for rats to travel all over the building.

Evidence of the presence of rats was found throughout the building, and especially in the Indian quarters.

At the time the outbreak occurred there were 17 Europeans and rather more Indians residing in the building. In view of the very grave danger to which these people were exposed whilst residing there I got into communication with Mr. Bishop, Deputy Mayor—in the absence of the Mayor—and from him obtained authority and instructions to serve a copy of the subjoined order on each occupier in the building:—

1st February, 1912.

In terms of Section 36 of the By-laws framed under Section 8 of Act No. 14 of 1899 (*vide* Proclamation No. 225, 1911),

I hereby order you to remove from occupation of premises known as "Maritime Buildings," situate on Point Road, such premises being in the opinion of the Medical Officer of Health unsafe for human habitation by reason of unusual mortality among rats from Bubonic Plague.

In view of the dangerous condition of these premises, it is incumbent upon you to vacate same at the earliest possible moment.

(Sgd.) C. R. BISHOP,

Deputy Mayor,

Borough of Durban.

These orders were served the same evening and every person residing in the building removed. This action was subsequently approved by the Plague Committee.

Accommodation was provided at the expense of the Plague Committee for the Europeans in neighbouring hotels, and the Indians were housed in some vacant rooms belonging to the Corporation at the Refuse Destructor until February 11th, by which time the disinfecting operations were completed.

On the morning of the 2nd February a start was made to treat all floors, walls, etc., with pulicide, and all clothing, bedding, etc., in the building was removed to our Disinfecting Station and there disinfected.

Authority having been received from the Plague Committee, a number of carpenters started on 6th February to open up ceilings, ventilating shafts, etc., and the disinfectors worked along with them spraying pulicide as the carpenters opened up spaces. These operations lasted until the 10th February, and every inch of the interior of the building was treated in this fashion. The Plague Committee sanctioned the payment of all expenses connected with structural alterations required in order to get at all possible sources of infection, such as opening ceilings, pulling down wooden partitions, etc., and the replacement afterwards of all wood-work, etc., interfered with in the work of disinfection.

The occupants returned to their rooms in Maritime Buildings on the 12th, having been absent for 11 days. The last Plague infected rat in these buildings was found on the 6th.

Altogether seven Plague infected rats were found on these premises, and a few were found free from Plague infection. The dead and decomposed bodies of several rats were found during the work of disinfection but unfit for examination.

No case of Plague in a human being occurred in these infected buildings.

PLAGUE AT UMLAAS MILLING COMPANY'S PREMISES, ISIPINGO.

These premises are nine miles from Durban, but the history of contagion connects them very directly with Plague in the Borough. A consignment of mealies from Burman's Store, Grey Street, was sent on the 20th January (the day previous to the store being closed on account of Plague infection) to be prepared into mealie meal. On the 24th a man in the employ of the above-mentioned company was discovered to be sick, having a temperature of 103 deg. and with a tender enlarged gland in the groin. He was medically seen on the 25th by Dr. Bonnar, who reported his suspicions to the Health Officer for the Province. The patient died on the morning of the 27th, and a post-mortem was made by the District Surgeon, the result of which was to prove that the Indian had died from Plague. On the 27th January a wagon load of mealie meal, prepared from the mealies sent from Burman's Store, was despatched to a produce dealer in Berea Road. I had the wagon removed to a vacant piece of ground, put guards upon it, and awaited the result of the post-mortem on the deceased Indian. On this being communicated to me I had the wagon and contents removed to the Umlaas Milling Company's premises under the escort of a mounted Borough Constable. It will thus be seen that within a period of ten days Plague infection had been carried a distance of nine miles from the source of infection. It would be interesting to know in what form this infection was carried. Was it by means of infected produce,—by living fleas adhering to such produce,—or to the actual conveyance of Plague infected rats? I think the latter supposition may at once be dismissed. Every endeavour was made to obtain rats in and around the Umlaas Milling Company's premises, but no Plague infected rats were ever discovered. The fact of this case occurring outside the Borough decided the Plague Committee to extend their administrative operations beyond the shipping and Borough, and to include under its jurisdiction coast districts in the neighbourhood of Durban.

The fourth human case in this outbreak occurred at the Magazine Barracks, Depot Road, and was discovered post mortem 12/2/12. The deceased was an Indian boy, 14 years of age, residing with his parents. These Barracks are occupied by Indian employees of the Durban Corporation, and with their wives

and families the population considerably exceeds 2,000 souls. In the past these Barracks have been somewhat unfortunate in so far that in every visitation of Plague to Durban infection has been conveyed to them. Nearly one-half of the total cases occurring during the 1904-05 outbreak were removed from the Magazine Barracks. For the past six years the Inspector of Nuisances has caused a systematic rat destruction to be maintained amongst this Indian community. On the boundary of this barrack area is a small cow-shed, and the case of Plague above referred to occurred in an Indian boy, 14 years of age, who fed and looked after the cows. It was found that the produce used in such cow-shed had been originally supplied from Messrs. Hayne and Co.'s Produce Store, Point. Here again infection had possibly been conveyed in forage. No other case, either in human beings or rats, was discovered in this area.

Messrs. Hayne and Co.'s Point Produce Store is in Jeck's Buildings, where a Plague infected rat was found on the 22nd January. One of their natives was removed to Hospital suffering from Plague on the 5th February; on the 10th the boy in the Magazine Barracks cow-shed took ill, and a few days later another native working for Messrs. Hayne and Co., and residing at the Bluff, was found suffering from Plague, and removed to the Plague Hospital. No Plague infected rats had been received from their store, and the boy who sickened on the 5th had also been employed on infected wharves. The occurrence of this group of cases connected with Hayne's Store, however, gave rise to some uneasiness in the minds of the Plague Committee as to the possibility of infection being in the store, and accordingly it was resolved to have the store emptied, examined and disinfected. This was done, but no Plague infected rats or mice were found.

PLAGUE INFECTION AT STRANG'S PRODUCE STORE AND BRICKHILL ROAD AREA.

Plague, so far as the Borough was concerned, had a quiescent period of over a week when it broke out simultaneously at the two widely separated places above mentioned.

PLAGUE AT STRANG'S.

On 22nd February a Native umfaan, aged about 13 years, employed by Mr. Strang, Produce Dealer, as cook-boy at the barracks behind store in Prince Edward Street, was taken ill. The boy's father took him home to the Mission Reserve, Inanda (Phoenix Station), on 23/2/12. He died the same night. A post-mortem examination was made by Dr. Hill, of Verulam, next day, and specimens from the body sent to the Government Pathologist, Point, for examination. The bacteriological examination (25/2/12) showed that the boy had died of Plague.

Mr. Strang's storage warehouse, which is situated in the centre of the town, at the corner of Prince Edward Street and Albert Street, was visited on the 25th February. Six natives were found in the quarters, one of whom was sick. On examination by Dr. Haydon and myself he was found to be suffering from Plague, and removed to Salisbury Island. The other natives were removed into an open shed which had previously been sprayed with pulicide, and their quarters and belongings disinfected and pulicided. Mr. Strang has also a small retail store in Field Street.

Mr. Strang received 150 sacks oats and 201 bales oat hay *ex* R.M.S. "Briton" on 19th January. This produce was landed on 15th January, and lay outside the Mailboat Shed ("E") till it was removed to his store.

From the beginning of January the only produce received into Mr. Strang's store had been the above-mentioned produce *ex* the "Briton," some produce from up-country farms in Natal and 150 bales of fodder from another produce dealer in town, whose store was never infected.

The following was the notice served on Mr. Strang to close up his Prince Edward Street store on 26th February:—

February 26, 1912.

Mr. John Strang,

Produce Dealer,

87, Field Street.

Sir,—

Owing to the occurrence of Plague among your Native employees, I hereby require you in terms of Section 32 of the By-laws for the Borough of Durban Relating to Infectious Disease and Quarantine to stop the removal or handling of all the goods, articles, materials and produce contained in your store, situated at 32, Prince Edward Street, and this order of prohibition of removal of such goods, articles, materials and produce shall remain in force until such order has been cancelled in writing by me.

Yours faithfully,

P. MURISON, M.D.,

Medical Officer of Health.

PRINCE EDWARD STREET STORE.—This is the bulk store, and was found in excellent condition, and all precautionary measures as to rat invasion had been taken. The floors were of asphalt, the walls of brick, cement rendered, and the doors, etc., rat-proof. No traces of rat runs were found, but some evidences of the existence of rats or mice in the store were noticed. The cubic capacity of the store is about 80,000 cubic feet.

FIELD STREET STORE.—These premises are used partly as office and partly as stores. The latter are supplied from his bulk store mentioned above. Only a comparatively small quantity of produce was stored here, and this was all removed on the 26th February to the larger store for fumigation. The buildings were rather old and in poor condition, but an attempt, not altogether successful, had been made to render them rat-proof. All openings to this store were secured against rats. After the removal of the contents these premises were disinfected. On the completion of these operations Mr. Strang was allowed to re-occupy them on the 29th February.

Recognising the fact that part of Strang's stock was of a perishable nature, viz., potatoes and onions, and would deteriorate rapidly, and probably constitute a claim for compensation, these goods were removed from the store to a small room which could be practically hermetically sealed, and in it the goods were disinfected and delivered over to Mr. Strang in eight hours.

Under Section 70 of the Borough By-laws, Mr. Strang was called upon by the Plague Committee to disinfect and purify his premises to the satisfaction of the Medical Officer of Health. He was, however, able to show a good reason for not undertaking the work, and consequently the work was carried out, as in Maritime Buildings, by and at the expense of the Plague Committee.

On the 28th February three carpenters and three disinfectors with four natives and eight Indians started at 6 a.m. to make the Prince Edward Street Store air-tight by pasting up all openings. This work occupied the whole day
Store air-tight by pasting up all openings. This work occupied the whole day
and at 7 p.m. 16 gallons of formalin and 60 lbs. of permanganate of potash were

The following was the notice served on Mr. Strang to close up his Prince
ward Street store on 26th February:

February 26, 1912.

r. John Strang,

Produce Dealer,

87, Field Street.

,—

Owing to the occurrence of Plague among your Native employees, I hereby quire you in terms of Section 22 of the By-laws for the Borough of Durban lating to Infectious Disease and Quarantine to stop the removal or handling all the goods, articles, materials and produce contained in your store, situated 22, Prince Edward Street, and this order of prohibition of removal of such ods, articles, materials and produce shall remain in force until such order has en cancelled in writing by me.

Yours faithfully,

P. MURISON, M.D.,

Medical Officer of Health.

PRINCE EDWARD STREET STORE.—This is the bulk store, and was und in excellent condition, and all precautionary measures as to rat invasion d been taken. The floors were of asphalt, the walls of brick, cement rendered, d the doors, etc., rat-proof. No traces of rat runs were found, but some idences of the existence of rats or mice in the store were noticed. The cubic pacity of the store is about 80,000 cubic feet.

FIELD STREET STORE.—These premises are used partly as office and rtly as stores. The latter are supplied from his bulk store mentioned above. ly a comparatively small quantity of produce was stored here, and this was removed on the 26th February to the larger store for fumigation. The ildings were rather old and in poor condition, but an attempt, not altogether ccessful, had been made to render them rat-proof. All openings to this store re secured against rats. After the removal of the contents these premises re disinfected. On the completion of these operations Mr. Strang was allowed re-occupy them on the 29th February.

Recognising the fact that part of Strang's stock was of a perishable nature, ., potatoes and onions, and would deteriorate rapidly, and probably constitute claim for compensation, these goods were removed from the store to a small om which could be practically hermetically sealed, and in it the goods were sinfected and delivered over to Mr. Strang in eight hours.

Under Section 70 of the Borough By-laws, Mr. Strang was called upon by e Plague Committee to disinfect and purify his premises to the satisfaction of e Medical Officer of Health. He was, however, able to show a good reason for t undertaking the work, and consequently the work was carried out, as in ritime Buildings, by and at the expense of the Plague Committee.

On the 28th February three carpenters and three disinfectors with four tives and eight Indians started at 6 a.m. to make the Prince Edward Street re air-tight by pasting up all openings. This work occupied the whole day
re air-tight by pasting up all openings. This work occupied the whole day
d at 7 p.m. 10 gallons of formalin and 60 lbs. of permanganate of potash were

liberated in eight lead-lined tanks. The premises were then closed, and at midnight an engineer started the Clayton fumigating machine, which continued in operation until 6 a.m. next morning.

On 29th February the store was re-opened, all the contents removed, and the refuse on the floors burned. During this work three mice were found. Mr. Strang thereafter was allowed to re-occupy his store by the rescinding of the closing order on that date.

PLAGUE AT BRICKHILL ROAD.

On the 21st February, a native, employed by Messrs. Clark & Thiselton, Carting Contractors, was removed to Salisbury Island suffering from Plague. His occupation for the previous 19 days had been that of stable boy, chiefly employed in cutting up forage for a large number of horses. The sleeping quarters of the boy consisted of a wood and iron structure, and provided with a wooden floor. When this floor was taken up the decomposing bodies of several rats were found. Their condition rendered microscopical examination impracticable.

Mr. Lennox, Manager for Messrs. Clark & Thiselton, stated that on the 19th January they removed five tons of forage that had been stacked for five days in the open adjoining E Shed. It will be remembered that the man Sullivan who died on the 14th had been working in E Shed up till mid-day of the 12th. The forage bought and removed by Messrs. Clark & Thiselton to their stables was part of Mr. Burman's consignment. On the 29th another native in the employ of Messrs. Clark & Thiselton was removed to Salisbury Island and died there. On the 2nd March another native was removed from Messrs. Clark & Thiselton's premises to the Plague Hospital.

On the 26th February a Plague infected rat was obtained from the premises of Mr. W. F. Johnstone, Timber Merchant, Brickhill Road, and on the same day a Plague infected rat was found at the premises of Messrs. Clark & Kent, Wagon Builders. These firms have premises adjoining each other and immediately opposite Messrs. Clark & Thiselton's stable premises.

When the Plague infected rats were got on the premises of Mr. W. F. Johnstone and Messrs. Clark & Kent, Dr. Haydon accompanied me to the locality, and we were at once confronted with the enormous task of dealing effectively with this area. Excellent harbourage for rats existed both in the wood yards and under cover. In order to get at the sources of possible infection it would be necessary to turn over large accumulations of timber. Naturally the first instruction to Mr. Johnstone was not to bring any more timber to that area. Poison was plentifully laid down and the cutting of grass and rank weeds that existed was ordered to be carried out. The firms concerned were asked to carry out Borough By-law 70, Relating to Infectious Disease and Quarantine, and to do such work and such disinfection as were necessary. The magnitude of the task was clearly apparent to the firms concerned.

The almost daily discovery of Plague infected rats about these premises caused me to report to the Plague Committee on the dangerous condition of this area. I pointed out that wherever and whenever Plague infected premises were found to exist, measures for the prevention of the spread of infection should be commenced immediately and carried out expeditiously. To call upon occupiers of premises to execute this work under By-law 70 was extremely unsatisfactory and ineffective to accomplish the end in view owing to the dilatory manner in which occupiers—in many instances due to the want of labour and inability to procure it—proceeded with the operations recommended. I suggested in the Public Health interests of the Borough that all work, which in the opinion of the executive officers of the Plague Committee was necessary for the prevention of the spread of Plague infection, be dealt with by a staff of employees always available, and under the supervision of such officers.

The last Plague infected rat from the three infected premises on Brickhill Road, viz., Messrs. W. F. Johnstone & Co., Messrs. Clark & Kent, and Messrs.

liberated in eight lead-lined tanks. The premises were then closed, and at midnight an engineer started the Clayton fumigating machine, which continued in operation until 6 a.m. next morning.

On 29th February the store was re-opened, all the contents removed, and the refuse on the floors burned. During this work three mice were found. Mr. Strang thereafter was allowed to re-occupy his store by the rescinding of the closing order on that date.

PLAGUE AT BRICKHILL ROAD.

On the 21st February, a native, employed by Messrs. Clark & Thiselton, Carting Contractors, was removed to Salisbury Island suffering from Plague. His occupation for the previous 10 days had been that of stable boy, chiefly employed in cutting up forage for a large number of horses. The sleeping quarters of the boy consisted of a wood and iron structure, and provided with a wooden floor. When this floor was taken up the decomposing bodies of several rats were found. Their condition rendered microscopical examination impracticable.

Mr. Lennox, Manager for Messrs. Clark & Thiselton, stated that on the 10th January they removed five tons of forage that had been stacked for five days in the open adjoining E Shed. It will be remembered that the man Sullivan who died on the 14th had been working in E Shed up till mid-day of the 12th. The forage bought and removed by Messrs. Clark & Thiselton to their stables was part of Mr. Burman's consignment. On the 29th another native in the employ of Messrs. Clark & Thiselton was removed to Salisbury Island and died there. On the 2nd March another native was removed from Messrs. Clark & Thiselton's premises to the Plague Hospital.

On the 20th February a Plague infected rat was obtained from the premises of Mr. W. F. Johnstone, Timber Merchant, Brickhill Road, and on the same day a Plague infected rat was found at the premises of Messrs. Clark & Kent, Wagon Builders. These firms have premises adjoining each other and immediately opposite Messrs. Clark & Thiselton's stable premises.

When the Plague infected rats were got on the premises of Mr. W. F. Johnstone and Messrs. Clark & Kent, Dr. Hardwin accompanied me to the locality, and we were at once confronted with the enormous task of dealing effectively with this area. Excellent harbourage for rats existed both in the wood yards and under cover. In order to get at the sources of possible infection it would be necessary to turn over large accumulations of timber. Naturally the first instruction to Mr. Johnstone was not to bring any more timber to that area. Poison was plentifully laid down and the cutting of grass and rank weeds that existed was ordered to be carried out. The firms concerned were asked to carry out Borough By-law 70, Relating to Infectious Disease and Quarantine, and to do such work and such disinfection as were necessary. The magnitude of the task was clearly apparent to the firms concerned.

The almost daily discovery of Plague infected rats about these premises caused me to report to the Plague Committee on the dangerous condition of this area. I pointed out that wherever and whenever Plague infected premises were found to exist, measures for the prevention of the spread of infection should be commenced immediately and carried out expeditiously. To call upon occupiers of premises to execute this work under By-law 70 was extremely unsatisfactory and ineffective to accomplish the end in view owing to the dilatory manner in which occupiers—in many instances due to the want of labour and inability to procure it—proceeded with the operations recommended. I suggested in the Public Health interests of the Borough that all work, which in the opinion of the executive officers of the Plague Committee was necessary for the prevention of the spread of Plague infection, be dealt with by a staff of employees always available, and under the supervision of such officers.

The last Plague infected rat from the three infected premises on Brickhill Road, viz., Messrs. W. F. Johnstone & Co., Messrs. Clark & Kent, and Messrs.

Clark & Thiselton, was received at my laboratory on 16th March. Plague infection in human beings and rats had therefore been known to exist in this area for 22 days.

Three days later a Plague infected rat was found lying between West and Palmer Streets, in premises occupied by Messrs. P. Lazarus and J. Ewan, Contractors, as stables, native quarters, etc. These premises were taken in hand in the usual manner, being first evacuated, but although a number of rats and mice were captured and examined none were found to be Plague infected. These premises are within easy and direct distance from W. F. Johnstone's Timber Yard.

From that date no further Plague infection was discovered in the Brickhill Road area till April 14th, when an Indian employed by the Hardwood Timber Company, Morrison Street, whose premises are separated by a narrow lane from those of Mr. W. F. Johnstone, died at Clairwood Flats. The post-mortem and microscopic examination of specimens showed the cause of death to be Plague. The deceased sometimes slept at the premises in Morrison Street, the last date on which he did so being April 11th. Infection in all probability was contracted at his work. Here again I had to draw the attention of the occupiers of the premises to the necessity for carrying out Section 70 of the By-laws, at the same time offering to provide the necessary men and material to destroy infection in the process of removing and re-stacking the timber.

Having recognised the inefficiency of By-law 70 in dealing with such a disease as Plague, and having made verbal communications on this subject to the Committee, I addressed a report to the Secretary of the Plague Committee. I may point out that Section 70 of the Borough By-laws was drafted by the Inspector of Nuisances and myself, and was never intended to apply to such conditions as disinfection, etc., of premises where Plague infection existed.

EXCERPT FROM MINUTES, PLAGUE COMMITTEE MEETING, 23RD APRIL, 1912.

"Report by Dr. Murison, stating that acting under instructions from the Chairman of the Committee at its last meeting, he interviewed the Managers of the Hardwood Co., in whose premises an Indian who died at Clairwood had been infected with Plague. These premises consist of a large wood and iron shed adjacent to W. F. Johnstone's workshops in the Brickhill Road area. The contents consist of a large quantity of short logs of wood and numerous small stacks of valuable woods, such as mahogany, etc., and these stacks should be turned over in order to discover any rats concealed therein, and the wooden floor of the shed should also be taken up. As mentioned by him before, it was no good to cause such work to be done unless it could be carried through expeditiously, and to carry out the necessary work a gang of at least 40 boys would be required. Acting in obedience to the Chairman's instructions of demanding that the occupier should carry out this work, the difficulty of obtaining sufficient labour by the occupier at once appeared. The Hardwood Co. had told him that in order to replace some of their employees who had fled on learning of the death of one of their fellow-workers from Plague, it took them several days to obtain the services of two natives. Dr. Murison's contention had been from the beginning of this outbreak that whatever work was necessary to be done in order to eradicate Plague from the Borough the workmen employed should be employees of the Plague Committee, always ready and available. He had previously drawn attention to the inefficient way in which anti-Plague work had been carried out when the duty of cleansing and disinfecting premises had been placed upon the occupier of the premises which he was led to believe was the legal position under the Quarantine Laws. He thought he could not do better than repeat—this time in writing—another instance of how measures are being carried out for the eradication of Plague under existing circumstances, taking the present case of Hardwood Co. referred to, although nearly every other case of any moment had been on somewhat similar lines:—He called on the Hardwood Co. to pull up the floor in order to prevent it acting as harbourage for rats, infected or otherwise, and to remove the logs of wood in order to discover if rats were nesting and harbouring there. In order to prevent the

Clark & Thiselton, was received at my laboratory on 16th March. Plague infection in human beings and rats had therefore been known to exist in this area for 22 days.

Three days later a Plague infected rat was found lying between West and Palmer Streets, in premises occupied by Messrs. P. Lazarus and J. Kean, Contractors, as stables, native quarters, etc. These premises were taken in hand in the usual manner, being first evacuated, but although a number of rats and mice were captured and examined none were found to be Plague infected. These premises are within easy and direct distance from W. F. Johnstone's Timber Yard.

From that date no further Plague infection was discovered in the Brickhill Road area till April 14th, when an Indian employed by the Hardwood Timber Company, Morrison Street, whose premises are separated by a narrow lane from those of Mr. W. F. Johnstone, died at Clairwood Flats. The post-mortem and microscopic examination of specimens showed the cause of death to be Plague. The deceased sometimes slept at the premises in Morrison Street, the last date on which he did so being April 11th. Infection in all probability was contracted at his work. Here again I had to draw the attention of the occupiers of the premises to the necessity for carrying out Section 20 of the By-laws, at the same time offering to provide the necessary men and material to destroy infection in the process of removing and re-stacking the timber.

Having recognised the inefficiency of By-law 20 in dealing with such a disease as Plague, and having made verbal communications on this subject to the Committee, I addressed a report to the Secretary of the Plague Committee. I may point out that Section 20 of the Borough By-laws was drafted by the Inspector of Nuisances and myself, and was never intended to apply to such conditions as disinfection, etc., of premises where Plague infection existed.

EXCERPT FROM MINUTES, PLAGUE COMMITTEE MEETING, 24th APRIL, 1912.

"Report by Dr. Morison, stating that acting under instructions from the Chairman of the Committee at its last meeting he interviewed the Managers of the Hardwood Co., in whose premises an Indian who died at Clairwood had been infected with Plague. These premises consist of a large wood and iron shed adjacent to W. F. Johnstone's workshops in the Brickhill Road area. The contents consist of a large quantity of short logs of wood and numerous small stacks of valuable woods, such as mahogany, etc., and these stacks should be turned over in order to discover any rats concealed therein, and the wooden floor of the shed should also be taken up. As mentioned by him before, it was no good to cause such work to be done unless it could be carried through expeditiously, and to carry out the necessary work a gang of at least 40 boys would be required. Acting in obedience to the Chairman's instructions of demanding that the occupier should carry out this work, the difficulty of obtaining sufficient labour by the occupier at once appeared. The Hardwood Co. had told him that in order to replace some of their employees who had fled on learning of the death of one of their fellow-workers from Plague, it took them several days to obtain the services of two natives. Dr. Morison's contention had been from the beginning of this outbreak that whatever work was necessary to be done in order to eradicate Plague from the Borough the workmen employed should be employees of the Plague Committee, always ready and available. He had previously drawn attention to the inefficient way in which anti-Plague work had been carried out when the duty of cleansing and disinfecting premises had been placed upon the occupier of the premises which he was led to believe was the legal position under the Quarantine Laws. He thought he could not do better than repeat—this time in writing—another instance of how measures are being carried out for the eradication of Plague under existing circumstances, taking the present case of Hardwood Co. referred to, although nearly every other case of any moment had been on somewhat similar lines. He called on the Hardwood Co. to pull up the floor in order to prevent it acting as harbourage for rats, infected or otherwise, and to remove the logs of wood in order to discover if rats were nesting and harbouring there. In order to prevent the dispersal of rats contained in the premises he desired the work to commence at daylight and continue till completed, which must be before sundown. The largest stack leaned up against the wall of the room in which the Indian was infected, so that its acting as a possible harbourage was most likely. The Hardwood Co. first pointed out the impossibility of their obtaining sufficient labour to do this work. As regards the floor, they were unable to pull this up without the permission of the landlord. The landlord's agent was interviewed, and Dr. Murison was informed that he had no power to give any such permission, but he (the agent) would communicate with a gentleman in Johannesburg who was interested in this particular building. He believed, however, that this gentleman would also be unable to give the necessary permission, and if such was the case the agent would advise that the Johannesburg gentleman cable to the firm at Home who own the building for instructions. When these were received he would inform Dr. Murison of their purport. The Committee could quite well see that this was altogether an inadequate method of dealing with such a disease as Plague, and in the interests of the public health of the Borough he thought that all work which in the opinion of the executive officers was necessary in order to eradicate or prevent the spread of Plague infection should be carried out by a staff of workmen always available and under the supervision of such officers. In the meantime, the contents of these premises, so far as practicable, had been treated with pulicide and disinfectant. He did not consider any serious danger to life existed at present in these premises, as all the employees had practically fled, but there was the possibility of a potential source of infection existing there which ought to be searched out and destroyed as quickly as possible.

After discussion it was resolved: That Dr. Murison be authorised to proceed immediately with the carrying out of such works as may in his opinion be necessary for the prevention of the spread of infection and for the thorough disinfection of premises and removal of rat harbourage from the known centres of infection, such work to be carried out by labourers to be supplied by the Government and Municipal Departments in equal proportions as from time to time required, with gangers and experienced inspectors furnished by the Municipality, the several Departments to be re-imbursed the actual cost of all labour supplied."

Having received this authority from the Plague Committee several gangs of natives and Indians were at once employed at these premises and the whole of the timber, etc., was turned over, and ground, floors, etc., sprayed with pulicide. Not only the Hardwood Timber Co.'s premises, but the whole area was then dealt with by a large staff of labourers, nearly 100 in number, and all likely rat harbourages in that area were exposed and dealt with. A considerable number of rats were killed in the process. No further developments of the disease re-appeared in this neighbourhood.

On April 24th, a Plague infected rat was found at 55, Stanger Street, about 120 yards distant, at the further end of a street on which W. F. Johnstone's premises abutted. This extension of the disease was doubtless due to the work of rat extermination carried on by the gangs in the infected area driving some of the rats from their usual harbourages. These infected premises, 55, Stanger Street, are situated close to the Durban Gaol. The structure of the building consists partly of brick and partly wood and iron, and is of a poor character. They were occupied by various Indian families, totalling 10 adults and 7 children. There were also three Indian families living in an adjoining building in Prince Alfred Street. All these people were considered to be in danger, and were cleared out of the premises the same afternoon, accommodation being provided in buildings in Ordnance Road, belonging to the Corporation. Just outside of the iron fence which encloses No. 55, Stanger Street property was a large heap of building debris, chiefly broken bricks. The infected rat was found just inside of the fence and distant only a few feet from this heap. Two large gangs were set to work: one to cut the grass in the neighbourhood generally, the other to turn over all bricks and rubbish about the place. In this heap no less than 19 rats were found, mostly dead and much decomposed. One was killed and was found to be Plague infected.

dispersal of rats contained in the premises he desired the work to commence at daylight and continue till completed, which must be before sundown. The largest stack leaned up against the wall of the room in which the Indian was infected, so that its acting as a possible harbourage was most likely. The Hardwood Co. first pointed out the impossibility of their obtaining sufficient labour to do this work. As regards the floor, they were unable to pull this up without the permission of the landlord. The landlord's agent was interviewed, and Dr. Murison was informed that he had no power to give any such permission, but he (the agent) would communicate with a gentleman in Johannesburg who was interested in this particular building. He believed, however, that this gentleman would also be unable to give the necessary permission, and if such was the case the agent would advise that the Johannesburg gentleman cable to the firm at Home who own the building for instructions. When these were received he would inform Dr. Murison of their purport. The Committee could quite well see that this was altogether an inadequate method of dealing with such a disease as Plague, and in the interests of the public health of the Borough he thought that all work which in the opinion of the executive officers was necessary in order to eradicate or prevent the spread of Plague infection should be carried out by a staff of workmen always available and under the supervision of such officers. In the meantime, the contents of these premises, so far as practicable, had been treated with pulicide and disinfectant. He did not consider any serious danger to life existed at present in these premises, as all the employees had practically fled, but there was the possibility of a potential source of infection existing there which ought to be searched out and destroyed as quickly as possible.

After discussion it was resolved: That Dr. Murison be authorised to proceed immediately with the carrying out of such works as may in his opinion be necessary for the prevention of the spread of infection and for the thorough disinfection of premises and removal of rat harbourage from the known centres of infection, such work to be carried out by labourers to be supplied by the Government and Municipal Departments in equal proportions as from time to time required, with gangers and experienced inspectors furnished by the Municipality, the several Departments to be re-imbursed the actual cost of all labour supplied."

Having received this authority from the Plague Committee several gangs of natives and Indians were at once employed at these premises and the whole of the timber, etc., was turned over, and ground, floors, etc., sprayed with pulicide. Not only the Hardwood Timber Co.'s premises, but the whole area was then dealt with by a large staff of labourers, nearly 100 in number, and all likely rat harbourages in that area were exposed and dealt with. A considerable number of rats were killed in the process. No further developments of the disease re-appeared in this neighbourhood.

On April 24th, a Plague infected rat was found at 56, Stanger Street, about 120 yards distant, at the further end of a street on which W. P. Johnstone's premises abutted. This extension of the disease was doubtless due to the work of rat extermination carried on by the gangs in the infected area driving some of the rats from their usual harbourages. These infected premises, 56, Stanger Street, are situated close to the Durban Bank. The structure of the building consists partly of brick and partly wood and iron, and is of a poor character. They were occupied by various Indian families, totalling 19 adults and 7 children. There were also three Indian families living in an adjoining building in Prince Alfred Street. All these people were considered to be in danger, and were cleared out of the premises the same afternoon, accommodation being provided in buildings in Ordnance Road, belonging to the Corporation. Just outside of the iron fence which encloses No. 56, Stanger Street property was a large heap of building debris, chiefly broken bricks. The infected rat was found just inside of the fence and distant only a few feet from this heap. Two large gangs were set to work; one to cut the grass in the neighbourhood generally, the other to turn over all bricks and rubbish about the place. In this heap no less than 19 rats were found, mostly dead and much decomposed. One was killed and was found to be Plague infected.

The wooden floor of the building was afterwards taken up, the wooden linings removed and several sheets of iron taken off the roof. The bodies of several rats were found under the floors, but all too much decomposed for examinations. Numerous rat nests and other evidences of rat infestation were found behind the linings and between the ceilings and roof. It was probably only the prompt evacuation of these premises that averted some human cases occurring at this place. The usual operations of disinfecting and puliciding were carried out at once, and on April 27th the two gangs of Indians and natives furnished by the Corporation that had been cleaning up in the Brickhill Road area were augmented by a gang of Togt natives sent by the Chief Magistrate, and also by a gang of convicts from the Gaol. With these forces a clean sweep was made of the whole area from Pine Street to Ordnance Road, and from Brickhill Road to the Railway Workshops. All grass and weeds was cut short and destroyed, all rubbish removed, timber turned over and re-stacked, rat runs followed up, and all cover for rats removed as far as possible. At the same time a vigorous crusade against rats and mice was carried out, and several hundreds were killed.

Notwithstanding these operations Plague infection was not exterminated, but spread to adjacent premises off Stanger Street, and only separated from the original Stanger Street focus by a very large and empty dilapidated wood and iron shed. The premises affected by this extension of infection consisted of two wood and iron rooms, with kitchens, etc., occupied by Indians. On May 24th an Indian boy living at this place died there after two days' illness, and the post-mortem examination disclosed the fact that he had died of Plague.

The usual precautionary measures were adopted and the other inmates of the premises removed for safety. On the 27th, whilst I was inspecting the premises the occupier, an Indian, brought his driver, a Zanzibar native, for inspection. On examination I saw the boy had Plague, and had him removed to Salisbury Island, where he died shortly afterwards. He had been out of the Borough on holiday from the 24th, and sickened on the 25th April.

Naturally every endeavour was made to obtain evidence of rat infection in or around these quarters, but although a staff of over 73 natives and Indians were employed no rats could be discovered. A reward of two shillings and sixpence per rat was offered to the labourers employed for any rodents found on these premises, but none were obtained. I am satisfied that the disease was conveyed by infected fleas that had left the dead rats found in the heap of building debris on the adjoining land, and in the absence of rat hosts had attached themselves to the unfortunate human hosts.

The next person to be attacked was a son of the Governor of the Gaol, who sickened on 28th May, and was removed to the Island on 31st May. The Governor's residence is situated in Stanger Street, immediately opposite the large wood and iron shed which intervenes between the two Plague infected premises last mentioned. This was the second European infected during the outbreak, and fortunately he made a good recovery.

The other inmates of the Governor's house were removed to a hotel, and the whole of the buildings disinfected and treated with pulicide. Afterwards the iron roof was removed from the house to permit of rat extermination and the wooden floors taken up. No Plague infected rats were found. As the building was of a poor character, very old, and had been condemned by P.W.D. Engineers years before, the Government subsequently had it demolished.

Among other places dealt with in connection with the Stanger Street extension of the outbreak was the Native Barracks belonging to the Borough Police Department. These buildings, which are of wood and iron, are situated alongside the residence of the Governor of the Gaol and almost equally near to the other two infected places in Stanger Street. From their construction they were very liable to invasion by rats, and the large number of natives housed in them rendered it imperative that everything possible should be done to protect the inmates. All the wood linings affording cover for rats were removed, and all openings by which rats could get into the buildings were either closed up or protected.

The wooden floor of the building was afterwards taken up, the wooden linings removed and several sheets of iron taken off the roof. The bodies of several rats were found under the floors, but all too much decomposed for examination. Numerous rat nests and other evidences of rat infestation were found behind the linings and between the ceilings and roof. It was probably only the prompt evacuation of these premises that averted some human cases occurring at this place. The usual operations of disinfecting and puliciding were carried out at once, and on April 27th the two gangs of Indians and natives furnished by the Corporation that had been cleaning up in the Brickhill Road area were augmented by a gang of Togt natives sent by the Chief Magistrate, and also by a gang of convicts from the Gaol. With these forces a clean sweep was made of the whole area from Pine Street to Ordnance Road, and from Brickhill Road to the Railway Workshops. All grass and weeds was cut short and destroyed, all rubbish removed, timber turned over and re-stacked, rat runs followed up, and all cover for rats removed as far as possible. At the same time a vigorous crusade against rats and mice was carried out, and several hundreds were killed.

Notwithstanding these operations Plague infection was not exterminated, but spread to adjacent premises off Stanger Street, and only separated from the original Stanger Street focus by a very large and empty dilapidated wood and iron shed. The premises affected by this extension of infection consisted of two wood and iron rooms, with kitchens, etc., occupied by Indians. On May 24th an Indian boy living at this place died there after two days' illness, and the post-mortem examination disclosed the fact that he had died of Plague.

The usual precautionary measures were adopted and the other inmates of the premises removed for safety. On the 27th, whilst I was inspecting the premises the occupier, an Indian, brought his driver, a Zanzibar native, for inspection. On examination I saw the boy had Plague, and had him removed to Salisbury Island, where he died shortly afterwards. He had been out of the Borough on holiday from the 24th, and sickened on the 25th April.

Naturally every endeavour was made to obtain evidence of rat infection in or around these quarters, but although a staff of over 78 natives and Indians were employed no rats could be discovered. A reward of two shillings and sixpence per rat was offered to the labourers employed for any rodents found on these premises, but none were obtained. I am satisfied that the disease was conveyed by infected fleas that had left the dead rats found in the heaps of building debris on the adjoining land, and in the absence of rat hosts had attached themselves to the unfortunate human hosts.

The next person to be attacked was a son of the Governor of the Gaol, who sickened on 28th May, and was removed to the Island on 31st May. The Governor's residence is situated in Stanger Street, immediately opposite the large wood and iron shed which intervenes between the two Plague infected premises last mentioned. This was the second European infected during the outbreak, and fortunately he made a good recovery.

The other inmates of the Governor's house were removed to a hotel, and the whole of the buildings disinfected and treated with pulicide. Afterwards the iron roof was removed from the house in pursuit of rat extermination and the wooden floors taken up. No Plague infected rats were found. As the building was of a poor character, very old, and had been condemned by P.W.D. Engineers years before, the Government subsequently had it demolished.

Among other places dealt with in connection with the Stanger Street extension of the outbreak was the Native Barracks belonging to the Borough Police Department. These buildings, which are of wood and iron, are situated alongside the residence of the Governor of the Gaol and almost equally near to the other two infected places in Stanger Street. From their construction they were very liable to invasion by rats, and the large number of natives housed in them rendered it imperative that everything possible should be done to protect the inmates. All the wood linings affording cover for rats were removed, and all openings by which rats could get into the buildings were either closed up or protected.

Similar protective measures were carried out by the authorities at the Durban Gaol.

The Railway Stores Department and Workshops had apparently been in the habit for a long time of dumping refuse, including a certain amount of waste food, in the neighbourhood. This refuse heap had attained considerable proportions, and afforded excellent cover for rats. On representations being made the refuse was removed and buried.

The following excerpt of a report submitted to the Plague Committee and taken from the Minutes, gives my opinion of the probable source and manner of infection of the Brickhill Road area. This area is situated about a mile distant from the nearest infected Wharf Sheds, with intervening premises of all descriptions, all of which, with one exception, remained free of Plague infection throughout the whole outbreak. The exception referred to was that of Lazarus's stable, which was not infected till the 19th March, when one Plague rat was found. In all probability this rat had migrated from W. F. Johnstone's premises in the immediate neighbourhood.

"Dr. Murison reported *re* infection of Clark & Thiselton's, W. F. Johnstone's, and Clark & Kent's premises, stating that infection might have been taken to these premises by (a) immigration of rats, (b) flea infection of produce, and (c) germ infection of produce. Rat invasion from the infected foci at the Point would scarcely extend over a distance of a mile, which was the distance from 'G' Shed to Clark & Thiselton's premises, without evidence of Plague at intervals *en route*. The transportation, however, of Plague infected rats was not an impossibility, for the reason that on 14th January the R.M.S. "Briton" was berthed at "D" Shed, which at that time undoubtedly contained Plague infected rats, and part of a consignment of oat straw, viz., two tons, was for Clark & Thiselton. This lay in the open space at the end of "D" Shed from the 15th to the 19th January, when it was removed by Clark & Thiselton. It was quite possible for Plague infected rats to have sheltered themselves in this stack of oat straw, and quite possible for a rat to have burrowed into a bale and been conveyed to Clark & Thiselton's premises. Clark & Thiselton were requested to turn over some bags of seed oats landed at the same time from the "Briton" as a necessary condition before permission to remove it was given to them, but they were not asked to do anything in reference to the oat straw. Flea conveyance and even germ conveyance by means of this oat straw to Clark & Thiselton's premises was also possible, and the length of time elapsing between the 19th January and the 20th February, when the boy took ill, was, he should think, a fairly ordinary period for the Plague to develop under such circumstances. On the occurrence of the second case he ordered Clark & Thiselton to remove their natives and Indians from their quarters, except those on the second floor, and they were at present being housed on some sand dunes to the north of their stables. The premises had been treated with the pulicide used by this Department. As regards the original oat straw, only a few bales now remained, and these had been taken outside the forage shed. A railway wagon-load of hay, however, from up-country, had recently been put into the same shed, and this had been and might be regarded as having been exposed to infection. In his opinion this hay should be removed to a barge and Claytonised, and afterwards deposited in one of Clark & Thiselton's rat-proof stores on Point Road, from which daily requirements could be drawn, this doing away at present with the storage of produce at their stables. The building in which their forage was stored was an old stable, freely allowing the ingress or egress of rats, or other animals up to an elephant in size." It was

"**Resolved**: That Dr. Murison be asked to take all steps necessary for the "proper disinfecting of Clark & Thiselton's premises and produce and fodder "contained therein; that Dr. Fernandez be asked to undertake the Claytonising "of the stock; and that this Committee is of opinion that the premises should "not be used for the storage of fodder (other than that required for daily con-"sumption) until such time as they provide proper storage accommodation for "fodder."

This was accordingly done.

It is, however, fair to state that Dr. Fernandez did not agree with my opinion of the manner in which infection had been conveyed to the Brickhill Road area. He was "of opinion that the most reasonable explanation was that of rat infection from the wharf area *via* Milne's Drain."

STORM'S BARRACKS, POINT.

On the 10th March an Indian woman died in these Barracks after an illness of less than 30 hours. I had the body removed to the Mortuary, where a post-mortem was made by Dr. Birtwell, and from the appearances presented and subsequent microscopic examinations of specimens taken from the body the cause of death was seen to be Bubonic Plague.

Thirty-nine Indians were living in these Barracks, and on account of the structural condition of the premises and the likelihood of rats being present I considered it advisable to have the buildings at once evacuated. Tents were provided on Bamboo Square, to which they were removed on the 11th, and where they resided until permanent accommodation could be found for them. On the same day, the 11th, three Indians living in these Barracks were removed to Salisbury Island suffering from Plague.

On investigation it was found that an adult female Indian from these Barracks had died in Addington Hospital on the 7th March, after a short illness without any well-defined physical signs of disease. There can now be no doubt but that this woman died from Plague, and was the primary case in these Barracks. After removal to the tents, one Indian was removed on the 14th suffering from Plague, and on the 16th an Indian was found dead in one of the tents, and post-mortem examination revealed that death had been due to Plague.

An Indian residing in Storm's Barracks disappeared on the evening of the 9th March, and went to Cato Manor. On the 13th he applied at Addington Hospital and was admitted as an in-patient, where he died on the 15th. Post-mortem examination showed that death had been due to Plague.

It will thus be seen that out of a population of 39, 8 persons were attacked with Plague, 7 of whom died.

For weeks prior to Plague appearing in these Barracks, every endeavour had been made to capture rats or mice on these premises, but without result. It may be mentioned that these buildings had been regarded as likely to harbour Plague infection, and had been kept under constant supervision since the outbreak of Plague. On the 11th March, however, the day on which three cases were removed from these Barracks to Salisbury Island, an Indian woman was seen to carry out of the Barracks a small parcel and bury it in the sand a short distance away from the Barracks. The site was pointed out, and on being uncovered a dead rat and portion of another were found. The body of the whole rat was found to be Plague infected.

Four days before the first case of Plague occurred in these Barracks a number of rat traps that for the previous seven weeks had been put in and around Storm's Barracks were removed owing to the fact that no rats had been caught. Poison had also been freely used at the same place.

After the premises were evacuated the disinfectors carried out the work of disinfection of the buildings and all contents. Police guards were set to prevent any unauthorised person entering the Barracks until disinfection was completed and the premises considered safe to re-enter.

KAPLAN'S STORE.

Situated close to those Barracks is an isolated room used as a general store and catering for a Coolie and Kafir trade. At the commencement of the Plague outbreak I inspected this store, and instructed the occupier to carry out certain repairs, etc., in order to render his premises rat-proof. As he continued to

It is, however, fair to state that Dr. Fernandez did not agree with my opinion of the manner in which infection had been conveyed to the Brickhill load area. He was "of opinion that the most reasonable explanation was that of rat infection from the wharf area *via* Milne's Drain."

STORM'S BARRACKS, POINT.

On the 10th March an Indian woman died in these Barracks after an illness f less than 30 hours. I had the body removed to the Mortuary, where a post-mortem was made by Dr. Birtwell, and from the appearances presented and ubsequent microscopic examinations of specimens taken from the body the ause of death was seen to be Bubonic Plague.

Thirty-nine Indians were living in these Barracks, and on account of the tructural condition of the premises and the likelihood of rats being present I onsidered it advisable to have the buildings at once evacuated. Tents were rovided on Bamboo Square, to which they were removed on the 11th, and where they resided until permanent accommodation could be found for them. n the same day, the 11th, three Indians living in these Barracks were removed o Salisbury Island suffering from Plague.

On investigation it was found that an adult female Indian from these Barracks had died in Addington Hospital on the 7th March, after a short illness ithout any well-defined physical signs of disease. There can now be no doubt but hat this woman died from Plague, and was the primary case in these Barracks. fter removal to the tents, one Indian was removed on the 14th suffering from Plague, and on the 16th an Indian was found dead in one of the tents, and post-mortem examination revealed that death had been due to Plague.

An Indian residing in Storm's Barracks disappeared on the evening of the h March, and went to Cato Manor. On the 13th he applied at Addington Hospital and was admitted as an in-patient, where he died on the 16th. Post-mortem examination showed that death had been due to Plague.

It will thus be seen that out of a population of 39, 8 persons were attacked ith Plague, 7 of whom died.

For weeks prior to Plague appearing in these Barracks, every endeavour d been made to capture rats or mice on these premises, but without result. may be mentioned that these buildings had been regarded as likely to harbour ague infection, and had been kept under constant supervision since the out-eak of Plague. On the 11th March, however, the day on which three cases ere removed from these Barracks to Salisbury Island, an Indian woman was en to carry out of the Barracks a small parcel and bury it in the sand a short stance away from the Barracks. The site was pointed out, and on being covered a dead rat and portion of another were found. The body of the whole t was found to be Plague infected.

Four days before the first case of Plague occurred in these Barracks a mber of rat traps that for the previous seven weeks had been put in and ound Storm's Barracks were removed owing to the fact that no rats had been ught. Poison had also been freely used at the same place.

After the premises were evacuated the disinfectors carried out the work of sinfection of the buildings and all contents. Police guards were set to event any unauthorised person entering the Barracks until disinfection was mpleted and the premises considered safe to re-enter.

KAPLAN'S STORE.

Situated close to these Barracks is an isolated room used as a general store d catering for a Coolie and Kafir trade. At the commencement of the Plague tbreak I inspected this store, and instructed the occupier to carry out certain pairs, etc., in order to render his premises rat-proof. As he continued to ignore further representations on this subject made to him, or otherwise declined to carry out the work, or unnecessarily delayed to do so, proceedings under our Borough By-laws were instituted against the occupier. These proceedings took place three weeks prior to the appearance of Plague in the premises adjoining his store. When, however, Plague occurred amongst human beings and rats within a few feet of these premises I immediately served a closing order under By-law 32. He was then requested to carry out the purification and disinfection of his premises under By-law 70, but this he also declined to do. The Plague Committee instructed me to carry out all the work required to eliminate possible infection, and this was accordingly done. Several dead rats and mice were found inside the store, which was found to be a veritable rat colony, particularly behind the wooden linings of the store.

The number of persons attacked with Plague, both inside and outside the Borough during this outbreak, totals 32 individuals, and it will be noticed that Storm's Barracks, with a population of only 39 persons, contributes 25 per cent. of the total cases.

We subsequently learned that the Indians in those Barracks had for several weeks previously been secretly removing and burying rats that had died on these premises, and in this way probably concealed evidences of Plague rat infection, which had they been brought to our notice might have enabled us to take such steps as would have stamped out the disease before it reached the human population in the Barracks, with so disastrous results.

The houses adjoining these Barracks, which were of an inferior description, were voluntarily evacuated, and none of the inmates developed Plague.

PLAGUE IN AFRICAN BOATING COMPANY'S BUILDINGS, ALEXANDRA SQUARE, POINT.

On the 28th March a Plague infected rat was found in the bond store of these premises.

These buildings are substantial brick structures with iron roof, and are two and three storeys high. The ground floor consists of warehouse, baggage-room, and offices.

The goods stored in these buildings were chiefly contained in cases, and there was very little foodstuffs.

On 2nd April a dead rat was found in an adjoining store, which was in temporary use as King's Warehouse, the regular King's Warehouse having had to be brought into disuse after it was found Plague infected.

Although these two buildings were separated from each other by good substantial brick walls, the fact of Plague occurring practically simultaneously in them caused the two places to be regarded as one focus of the disease. The whole of the contents of both buildings were removed and disinfected. Such goods as could not be sprayed, i.e., foodstuffs, were put in insulated railway vans and there treated by the formalin-permanganate process elsewhere described.

An Indian, employed by the African Boating Company, who was engaged during the disinfection of these premises in handling goods, was found sick on the afternoon of 5th April in the African Boating Company's Barracks, Point. On examination by Dr. Fernandez that evening it was found he was suffering from Plague, but before he could be removed to the Island death took place.

There was no further development of the disease after the premises and contents had been disinfected.

These were the last premises in the Borough area at the Point to be Plague infected.

ignore further representations on this subject made to him, or otherwise declined to carry out the work, or unnecessarily delayed to do so, proceedings under our Borough By-laws were instituted against the occupier. These proceedings took place three weeks prior to the appearance of Plague in the premises adjoining his store. When, however, Plague occurred amongst human beings and rats within a few feet of these premises I immediately served a closing order under By-law 42. He was then requested to carry out the purification and disinfection of his premises under By-law 10, but this he also declined to do. The Plague Committee instructed me to carry out all the work required to eliminate possible infection, and this was accordingly done. Several dead rats and mice were found inside the store, which was found to be a veritable rat colony, particularly behind the wooden linings of the store.

The number of persons attacked with Plague, both inside and outside the Borough during this outbreak, totals 32 individuals, and it will be noticed that Storm's Barracks, with a population of only 39 persons, contributes 25 per cent of the total cases.

We subsequently learned that the Indians in these Barracks had for several weeks previously been secretly removing and burying rats that had died on these premises, and in this way probably concealed evidences of Plague rat infection, which had they been brought to our notice might have enabled us to take such steps as would have stamped out the disease before it reached the human population in the Barracks, with so disastrous results.

The houses adjoining these Barracks, which were of an inferior description, were voluntarily evacuated, and none of the inmates developed Plague.

PLAGUE IN AFRICAN BOATING COMPANY'S BUILDINGS, ALEXANDRA SQUARE, POINT.

On the 29th March a Plague infected rat was found in the bond store of these premises.

These buildings are substantial brick structures with iron roof, and are two and three storeys high. The ground floor consists of warehouse, baggage-room, and offices.

The goods stored in these buildings were chiefly contained in cases, and there was very little foodstuffs.

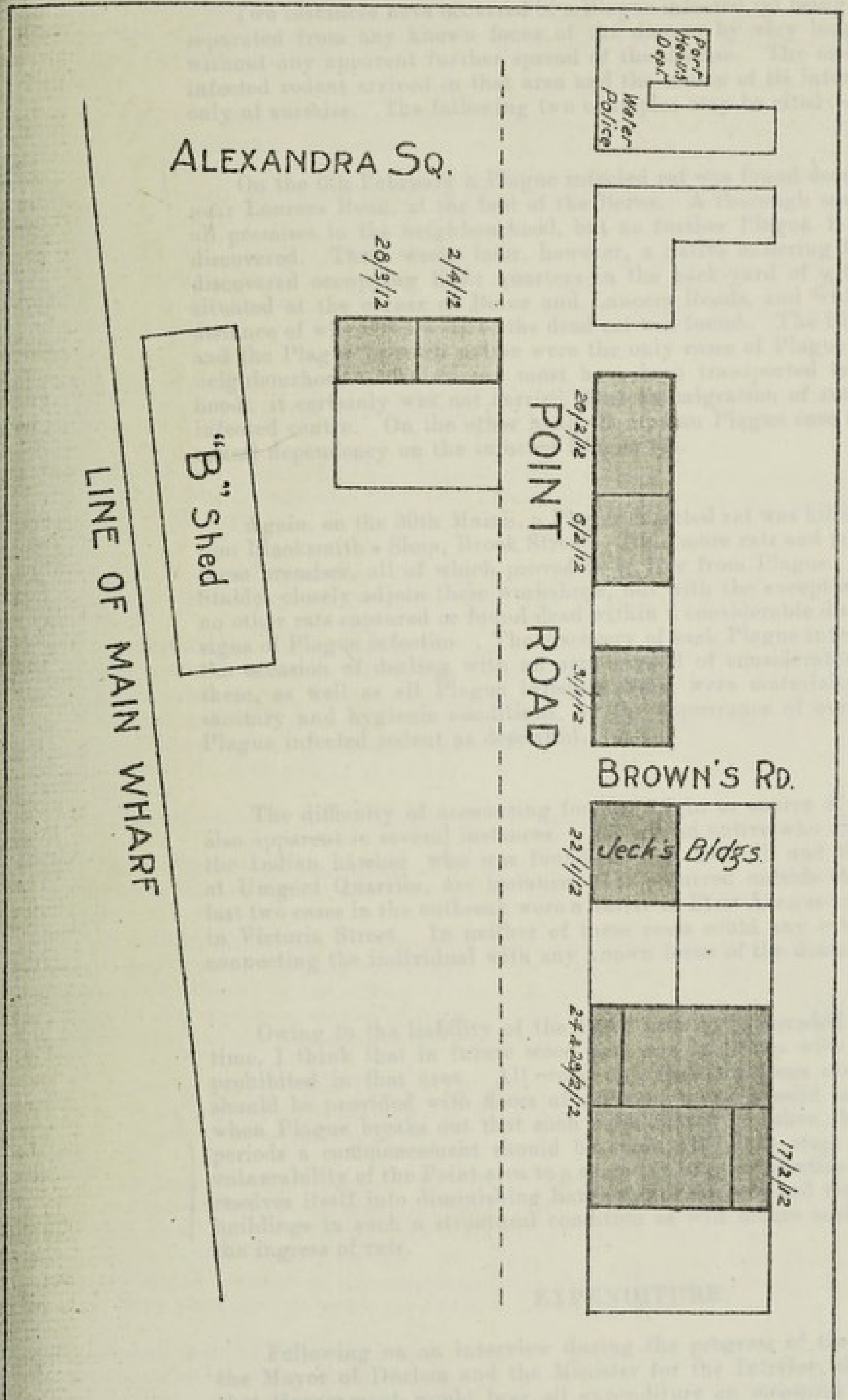
On 2nd April a dead rat was found in an adjoining store, which was in temporary use as King's Warehouse, the regular King's Warehouse having had to be brought into disuse after it was found Plague infected.

Although these two buildings were separated from each other by good substantial brick walls, the fact of Plague occurring practically simultaneously in them caused the two places to be regarded as one focus of the disease. The whole of the contents of both buildings were removed and disinfected. Such goods as could not be sprayed, *i.e.*, foodstuffs, were put in insulated railway vans and there treated by the formalin-permanganate process elsewhere described.

An Indian, employed by the African Boating Company, who was engaged during the disinfection of these premises in handling goods, was found sick on the afternoon of 5th April in the African Boating Company's Barracks, Point. On examination by Dr. Fernandez that evening it was found he was suffering from Plague, but before he could be removed to the Island death took place.

There was no further development of the disease after the premises and contents had been disinfected.

These were the last premises in the Borough area at the Point to be Plague infected.



Plague infected premises in Borough area, Point, infected by direct extension from Sheds and Wharves

SPORADIC CASES.

Two instances have occurred of a Plague infected rat being found in a place separated from any known focus of the disease by very long distances, and without any apparent further spread of the disease. The mode by which the infected rodent arrived in that area and the source of its infection are matters only of surmise. The following two examples may be cited:—

On the 6th February a Plague infected rat was found dead on the roadway near Lancers Road, at the foot of the Berea. A thorough search was made of all premises in the neighbourhood, but no further Plague infected rats were discovered. Three weeks later, however, a native suffering from Plague was discovered occupying Kafir quarters in the back-yard of a Chinaman's shop situated at the corner of Berea and Lancers Roads, and within a very short distance of where the body of the dead rat was found. The Plague infected rat and the Plague infected native were the only cases of Plague infection in this neighbourhood. The disease must have been transported to this neighbourhood; it certainly was not carried there by migration of rats from a Plague infected centre. On the other hand the human Plague case may have had no causal dependency on the infected Plague rat.

Again, on the 30th March, a Plague infected rat was killed in the Corporation Blacksmith's Shop, Brook Street. Nine more rats and mice were got from these premises, all of which proved to be free from Plague. The Corporation Stables closely adjoin these workshops, but with the exception of this one rat, no other rats captured or found dead within a considerable distance showed any signs of Plague infection. The discovery of such Plague infected rat was made the occasion of dealing with an area around of considerable magnitude, and these, as well as all Plague infected areas, were materially improved as to sanitary and hygienic conditions, by the appearance of even such a solitary Plague infected rodent as described.

The difficulty of accounting for the origin or source of human cases was also apparent in several instances. The second native who died at King's Rest, the Indian hawker who was found dead at Redhill, and the native umfaan at Umgeni Quarries, are instances that occurred outside the Borough. The last two cases in the outbreak were a native in First Avenue and an Indian child in Victoria Street. In neither of these cases could any evidence be obtained connecting the individual with any known focus of the disease.

Owing to the liability of the Point area to be invaded by Plague at any time, I think that in future wood and iron buildings with linings should be prohibited in that area. All wood and iron buildings already in existence should be provided with floors of concrete or other solid material. It is not when Plague breaks out that such steps should be taken, but in inter-plague periods a commencement should be made with such steps as will lessen the vulnerability of the Point area to a spread of Plague infection. This practically resolves itself into diminishing harbourages for rats and maintaining existing buildings in such a structural condition as will secure such premises against the ingress of rats.

EXPENDITURE.

Following on an interview during the progress of the outbreak between the Mayor of Durban and the Minister for the Interior, the latter intimated that Government would bear all expenditure on measures taken in the Port area, on Salisbury Island, and in all areas under Government control, outside the jurisdiction of the Durban Borough. For expenditure incurred in dealing with Plague in the Borough the question whether the Corporation would bear the whole of such expense or only a proportion, was left over for later consideration, Government to continue making all payments in respect of all areas as in the past.

SUMMARY.

From a perusal of the foregoing narration and reference to a map of the Borough of Durban, it will be noticed that four centres of infection developed during the 1912 outbreak.

FIRST. POINT AREA.—Here the parent source of infection was the Government Wharves and Sheds, but which spread to adjacent Borough premises by direct extension of Plague infected rats. Both human beings and rats were affected with the disease in this area.

SECOND. BURMAN'S STORE.—Here Plague rats only were found. Owing to the early detection of the disease, for which Mr. Burman is entitled to every praise, and closure of store, no human cases occurred.

THIRD. STRANG'S STORE.—Here only human cases occurred. No Plague infected rats were found.

FOURTH. BRICKHILL ROAD AREA.—Here both Plague infected human beings and rats were found, and known infection lasted for 101 days.

The last mentioned three foci can only be accounted for by the direct *transportation* of Plague infection to them from an infected source.

Reference has been made in the report to the removal of the inmates of Plague infected premises. This was done at Sullivan's house, Jeck's Buildings, Burman's Store, Maritime Buildings, Clark & Thiselton's Stables, the Water Police Native Quarters, the Point Railway Barracks, "Storm's" Barracks, Stanger Street premises, Hardwood Timber Co.'s premises, and the residence of the Governor of the Gaol.

This measure was dictated solely for the personal safety of the inmates.

All contacts were kept under close surveillance for a period of two weeks, but during that time were allowed to follow their usual occupations.

No prophylactic inoculations were employed either amongst contacts or those employed in carrying out Plague work. As already stated, great confidence was reposed in the efficacy of the pulicide as a preventive of infection. None of the workmen employed were allowed to advance into any infected premises beyond the area sprayed with pulicide.

In conclusion, I desire to place on record the able and willing assistance given by all departments and officials of the Durban Corporation when called upon in connection with Plague work.

The Inspector of Nuisances, Mr. W. C. Daugherty, and his staff of Inspectors rendered very valuable assistance, and I am very pleased to state that on their own initiative they carried out sanitary improvements which must be of lasting benefit to the Borough. Mr. Daugherty personally took charge of the rat brigade formed at the commencement of the Plague outbreak, and in other ways acted as a valuable colleague to me throughout.

Special mention requires to be made of Mr. R. Walker, Infectious Disease Inspector, for his zeal and untiring energy in the superintending and carrying out of Plague prevention work in all infected areas and premises. His work extended from 7 a.m. up till sometimes 10 or 11 p.m. Our own Disinfecting Staff worked early and late, and to them also my thanks are due.

Mr. Fletcher, Borough Engineer, readily supplied whatever labour was demanded, although to do so necessitated the interruption of other pressing work.

The Town Clerk, Town Solicitor, and Secretary of the Plague Committee were valuable friends in assisting to solve many problems that arose during the carrying out of anti-Plague operations.

The assistance of the Police had at times to be evoked, and the Chief Constable, Mr. Donovan, was never found wanting in supplying help required from his Department.

The Stores Department has probably been *the* Department that has had more calls made upon it than any other for immediate and urgent attention to requisitions, and I willingly bear testimony to the courtesy and despatch that Mr. Stiebel showed to my many applications.

No.	Date.	Name.	Race.	Age and Sex.		Where Employed.	Residence.	Result	
				M.	F.			Cured.	Died.
1	15-1-12	D. Sullivan	E	62	—	E. and F. Sheds, Point	Stellawood, Umbilo	—	1
2	16-1-12	Moonien	A	27	—	Sweeping Wharves and Sheds	N. Harbour Dept. Bks., Point	—	1
*3	22-1-12	R. Maharaj	A	30	—	Umlaas Milling Co.	Reunion	—	1
4	5-2-12	B. K. Mtakati	N	34	—	Hayne & Co. (Wharves and Sheds)	Togt Barracks, Bell St.	1	—
5	12-2-12	Dularchand	A	14	—	Eli Buck's Dairy	Block N. Room 364, Magazine Bks.	—	1
*6	16-2-12	Joe Kamer	N	Ad.	—	Hayne & Co., Bluff	Bluff	—	1
7	20-2-12	Ramsamujh	A	19	—	Cotts & Co. (Wharves and Stores)	Cotts & Co.'s Bks., Point	—	1
8	21-2-12	Ungaza Ntuli	N	19	—	Clark & Thiselton's Stables	Clark & Thiselton, Brickhill Rd.	1	—
*9	25-2-12	Jeremiah Ntambu	N	25	—	J. Strang's, died at Inanda	Strang, Pr. Edward Street	—	1
10	25-2-12	M. Ntuli	N	21	—	Strang's, Pr. Edward Street	do. do.	1	—
11	29-2-12	Subah	A	14	—	Scholar	48 Shepstone St.	—	1
12	29-2-12	Kusana	N	26	—	Royal Laundry, Berea Road	100 Berea Road	—	1
13	29-2-12	Umhlongo Majola	N	35	—	Clark & Thiselton's Stables	Clark & Thiselton, Brickhill Rd.	—	1
14	4-3-12	M. Dhlamini	N	26	—	do. do.	do. do.	1	—
15	7-3-12	Lutchmia	A	—	25	Chiazzari & Co., Point	Dunsterville's Bks., Bell St.	—	1
16	10-3-12	Tupamah	A	—	Ad.	Hawker on Docks	do. do.	—	1
17	11-3-12	Gala	A	18	—	Akitt & Anderson	do. do.	—	1
18	11-3-12	Ali Bubu	A	—	38	do. do.	do. do.	1	—
19	11-3-12	Appamah	A	—	23	Natal Shipping Co.	do. do.	—	1
20	14-3-12	Basavaraju	A	25	—	Akitt & Anderson	do. do.	—	1
21	15-3-12	Govinda Gounden	A	40	—	Chiazzari & Co.	do. do.	—	1
22	16-3-12	Verasamy	A	34	—	Day Labourer	do. do.	—	1
*23	22-3-12	Samuel Ka Momewa	N	48	—	?	King's Rest, Bluff	—	1
*24	26-3-12	?	A	Ad.	—	Hawker	Found dead at Redhill	—	1
25	6-4-12	S. V. Subbiah	A	31	—	A. B. Co., Point	A. B. C. Bks., Point	—	1
26	12-4-12	Batche	A	Ad.	—	Timber Hardwood Co.	Timber Hardwood Co.'s Qrs.	—	1
*27	16-4-12	M. Mbedwini	N	13	—	Bentley's Quarries, Umgeni	At Quarries and Hut on river bank	—	1
28	25-5-12	Vantas	A	16	—	Cigar Maker, Smith Street	Stanger Street	—	1
29	27-5-12	Abdool	N	24	—	Stanger Street, Peer Buckas	Stanger Street	—	1
30	31-5-12	Arthur L. Deane	E	21	—	Clerk of Court, Pinetown	Central Gaol	1	—
31	18-6-12	Mnandi	N	28	—	Labourer, Mason & Watkinson's	72 First Avenue	—	1
32	15-7-12	Aliabee	A	—	8	... ...	150 Victoria St	—	1

* Those names marked with an asterisk are cases of Plague, which were discovered outside the Borough and dealt with by the District Health Officers concerned. Their names have been included in this list in order to show the total number of cases of Plague occurring during this outbreak; another reason being that infection in all these cases was probably contracted in the Borough or on Government property situated at the Point.

MUNICIPAL BACTERIOLOGICAL LABORATORY.

Examinations of specimens suspected of Plague were made in the Municipal Laboratory. Directions as to the mode to be followed in collecting and conveying the bodies of dead rats to the Laboratory were advertised and circulated.

The following is a list of *Positive* Plague Specimens examined.

Time did not permit of pursuing many interesting problems that cropped up from time to time. Inoculation experiments on guinea pigs were carried out in several cases where the microscopic appearances were doubtful. The organs chiefly examined in rats were spleen, liver, blood, and maxillary glands.

LIST OF PLAGUE INFECTED SPECIMENS EXAMINED AT MUNICIPAL BACTERIOLOGICAL LABORATORY.

No.	Date.	Whence Obtained and by Whom.	Human.	Rat.
1	15-1-12	Mortuary (D.S.) per Dr. Birtwell	1	—
2	21-1-12	Burman's Store per Mr. Daugherty	—	1
3	„	„ „ Dr. Murison	—	1
4	„	„ „ „	—	1
5	„	„ „ „	—	1
6	„	„ „ „	—	1
7	„	„ „ „	—	1
8	„	„ „ „	—	1
9	„	„ „ „	—	1
10	„	„ „ „	—	1
11	„	„ „ „	—	1
12	3-2-12	Maritime Buildings per Ratcatcher Wheeler	—	1
13	6-2-12	Outside 117 Berea Road per Sanitary Inspecter Smith	—	1
14	11-2-12	Room 364, Magazine Barracks (D) per Dr. Birtwell	1	—
15	26-2-12	Brickhill Road per W. F. Johnstone	—	1
16	„	„ „ Clark & Kent	—	1
17	27-2-12	„ „ „	—	1
18	„	„ „ W. F. Johnstone	—	1
19	28-2-12	Shepstone St. (S.) per Dr. Murison	1	—
20	29-2-12	Mortuary (M.D.) per Dr. Birtwell	1	—
21	2-3-12	Brickhill Road per Clark & Kent	—	—
22	4-3-12	„ „ W. F. Johnstone	—	1
23	5-3-12	„ „ Clark & Thiselton	—	1
24	„	„ „ „	—	1
25	„	„ „ „	—	1
26	„	„ „ „	—	1
27	9-3-12	„ „ W. F. Johnstone	—	1
28	10-3-12	Bell Street (T.) per Dr. Birtwell	1	—
29	11-3-12	Storm's Barracks per San. Inspr. Hyslop	—	1
30	„	Brickhill Road per Clark & Kent	—	1
31	14-3-12	„ „ W. F. Johnstone	—	1
32	16-3-12	„ „ „	—	1
33	17-3-12	Mortuary (V) per Dr. Birtwell	1	—
34	19-3-12	211 Pine Street per P. Lazarus & Co.	—	1
35	30-3-12	Brook Street per M. Sands	—	1
36	1-4-12	Point per African Boating Co.	—	1
37	„	„ „ „	—	1
38	2-4-12	King's Warehouse, A.B.C. Block	—	1
39	6-4-12	Indian Depot (S.V.S.) per Dr. Birtwell	1	—
40	24-4-12	Coolie Quaters, Stanger Street	—	1
41	25-4-12	„ „ „	—	1
42	29-4-12	Outside Governor of Goal's House	—	1
43	25-5-12	Mortuary (V.) per Dr. Birtwell	1	—
44	15-6-12	„ (J.M.) „ „	1	—
45	4-7-12	„ (A.) „ „	1	—

Numerous specimens obtained post-mortem and the bodies of 1,459 rats were examined and found negative.

Annexure "B']

SMALL-POX OUTBREAK, 1912.

Small-pox, after an absence of six years from the Borough, made its appearance in January—almost at the same time as Plague.

The first case in the outbreak was probably a Mozambique native employed as a tinsmith in Commercial Road. This man left Durban about the 13th January, intending to take a holiday. His movements immediately after that time have never been ascertained, but some days later he turned up sick at Prospect Hall, and was given shelter by some Indians living there. He died on the 24th of January, without being seen by a medical practitioner, but the necessity for a death certificate caused the people with whom he had been living to call in a medical man after death, when it was seen that he had been suffering from Small-pox. The medical practitioner who viewed the body made certain inquiries, which went to show that the native lived and worked in premises in Commercial Road, Durban. All those whom we had reason to believe had been in contact with him were vaccinated and kept under supervision and the premises disinfected. A most pains-taking search was made without finding out much about the deceased beyond the fact that he was said to have lived continuously in Durban for over a year.

The next case was a Togt native living in the Central Togt Barracks and working in one of the Corporation gangs, who was found sick on the 25th January. His illness was not then sufficiently advanced to enable a diagnosis to be made, but as there was a certain amount of suspicion about him he was removed to Congella and kept under observation till the disease developed. In the meantime disinfection was carried out at the Barracks. Immediately on the development of the case to a point where the nature of the disease could be definitely diagnosed the patient was removed to the Beach Epidemic Hospital for Coloured cases, and arrangements made to vaccinate the whole of the inmates of the barracks. This vaccination was carried out by Drs. Birtwell, Adams, and myself in the evening. Thereafter a close watch was kept on all the contacts, and fortunately no other cases occurred. This was really the first case which occurred *in* the Borough. The native stated that he had been working in Durban for a year, and the source of his infection could not be traced.

On the morning of January 26th, a doctor asked me to see a native umfaan suffering from a skin eruption, who had been sent to his consulting rooms. On arrival I was able to confirm his diagnosis of Small-pox, and the patient was at once removed to the Beach Hospital. This native had been employed in a newspaper printing office in the vicinity of the place where the first mentioned case occurred. He had been over two months in town, and no other probable source was found. All the usual process of disinfection was carried out; the other natives employed in the printing shop were at once bathed, put into new clothes, and vaccinated; and vaccination was offered to all the European employees who cared to avail themselves of this protection. One of the latter who was not vaccinated afterwards developed the disease at his home outside the Borough, but though a strict watch was kept over all the contacts living in Durban none of them were affected.

The precautionary measures adopted would seem to have been fairly effectual, for no more cases of Small-pox occurred among residents of the Borough till the 28th March.

On the 5th February, a native, on his arrival at Durban Railway Station from Hatting Srpuit, and a native child brought into Durban for medical advice from Phoenix on the 9th, were found to be suffering from Small-pox. Both cases were removed to hospital and all the usual precautionary measures carried out.

SMALL-POX OUTBREAK, 1912.

Small-pox, after an absence of six years from the Borough, made its appearance in January—almost at the same time as Plague.

The first case in the outbreak was probably a Mozambique native employed as a tinsmith in Commercial Road. This man left Durban about the 15th January, intending to take a holiday. His movements immediately after that time have never been ascertained, but some days later he turned up sick at Prospect Hall, and was given shelter by some Indians living there. He died on the 24th of January, without being seen by a medical practitioner, but the necessity for a death certificate caused the people with whom he had been living to call in a medical man after death, when it was seen that he had been suffering from Small-pox. The medical practitioner who viewed the body made certain inquiries, which went to show that the native lived and worked in premises in Commercial Road, Durban. All those whom we had reason to believe had been in contact with him were vaccinated and kept under supervision, and the premises disinfected. A most pains-taking search was made without finding out much about the deceased beyond the fact that he was said to have lived continuously in Durban for over a year.

The next case was a Togt native living in the Central Togt Barracks and working in one of the Corporation gangs, who was found sick on the 29th January. His illness was not then sufficiently advanced to enable a diagnosis to be made, but as there was a certain amount of suspicion about him he was removed to Congella and kept under observation till the disease developed. In the meantime disinfection was carried out at the Barracks. Immediately on the development of the case to a point where the nature of the disease could be definitely diagnosed the patient was removed to the Beach Epidemic Hospital for Coloured cases, and arrangements made to vaccinate the whole of the inmates of the barracks. This vaccination was carried out by Drs. Birtwell, Adams, and myself in the evening. Thereafter a close watch was kept on all the contacts, and fortunately no other cases occurred. This was really the first case which occurred in the Borough. The native stated that he had been working in Durban for a year, and the source of his infection could not be traced.

On the morning of January 29th, a doctor asked me to see a native umfaan suffering from a skin eruption, who had been sent to his consulting rooms. On arrival I was able to confirm his diagnosis of Small-pox, and the patient was at once removed to the Beach Hospital. This native had been employed in a newspaper printing office in the vicinity of the place where the first mentioned case occurred. He had been over two months in town, and no other probable source was found. All the usual process of disinfection was carried out; the other natives employed in the printing shop were at once bathed, put into new clothes, and vaccinated; and vaccination was offered to all the European employees who cared to avail themselves of this protection. One of the latter who was not vaccinated afterwards developed the disease at his home outside the Borough, but though a strict watch was kept over all the contacts living in Durban none of them were affected.

The precautionary measures adopted would seem to have been fairly effectual, for no more cases of Small-pox occurred among residents of the Borough till the 28th March.

On the 5th February, a native, on his arrival at Durban Railway Station from Hatting Spruit, and a native child brought into Durban for medical advice from Phoenix on the 9th, were found to be suffering from Small-pox. Both cases were removed to hospital and all the usual precautionary measures carried out.

In view of the two first mentioned cases and of the fact that several other cases had occurred just outside the Borough boundary, it was felt that steps must be taken to protect the inhabitants of this town. Accordingly, on the 16th February, the vaccination of the native population of the Borough was started. This work will be referred to under Vaccination.

As already stated, no cases occurred in Durban from February 9th to March 28th, when an Indian male, employed by the South African Railways, and living in the Railway Barracks, Depot Road, was reported by Dr. Birtwell to be suffering from Small-pox, and was removed to the Beach Epidemic Hospital. His quarters, etc., were disinfected, and Dr. Birtwell vaccinated all contacts in the Barracks and Railway Hospital. No other cases occurred here.

On the 6th April, a native, who had been employed by an Indian storekeeper in Grey Street, feeling sick, went to visit his brother employed as a house-boy by a resident in Chelmsford Road. He had come from his kraal to Grey Street, and was eleven days there. When the lady of the house discovered his presence his face was covered with a profuse eruption. She at once communicated with this department, and the native was removed to the Small-pox Hospital. Disinfection of these premises and of the quarters in Grey Street where the patient had previously lived, and vaccination of the contacts at both places were performed without delay.

Notwithstanding these precautions a house-boy employed at the Chelmsford Road premises developed the disease about a fortnight later, and was also removed to Hospital.

This appears to have headed off the disease in this direction, but on the 30th April two children residing in Cathedral Road were found to have eruptions on them. They were removed to the Observation Cottage at Congella. When the disease developed sufficiently to be recognisable as Small-pox they were removed to the Beach Hospital. Enquiries elicited the information that other two children residing in the same house had been similarly affected some time before, and after recovering had gone to Cato Manor. This information was conveyed to the District Health Officer, Pinetown, in whose district Cato Manor is situated.

Vaccination of all the residents in the neighbourhood to the number of over 400 was promptly carried out, but notwithstanding such precautionary measures another case, an Indian woman living at the same address, and who was absolved from vaccination owing to advanced pregnancy, developed the disease on 12th May, and was removed to hospital with the other cases. No further developments occurred in this area.

On 31st May the disease broke out in a fresh locality in the person of an Indian child living in Shire's Barracks, Umgeni. The child had been taken by his parents to the Depot Central Hospital, where it was found to have Small-pox. He was removed to the Beach Hospital, and in addition to disinfecting all places exposed to infection, the work of vaccinating all the other inhabitants of Shire's Barracks was at once started.

Up to this point it will have been noted that the incidence of the disease never constituted any grave general danger to the public. Our efforts had been entirely successful in limiting the cases to at most three to any one focus, and in all for the five months of the year not more than a dozen cases had occurred. The disease had also been confined entirely to Natives and Indians, both of which sections of the population were by this time much better protected by vaccination than the European and Coloured classes. But now occurred an outbreak of the disease which for a time taxed all the resources of the staff to combat, though there was never any question of our ultimate success in stamping out the conflagration.

On June 3rd, I was asked by Dr. Sakir to see a young man living in Neville Lane who, in his opinion, was suffering from Small-pox. I was able to confirm this diagnosis, and the appearance of some of the other inmates raised suspicions that they also might be cases. As the light was failing by this time I contented

myself with placing a guard of native constables under charge of a European constable round the house for the night. A more thorough examination of the family made in daylight next morning revealed the fact that every person living in the house—10 in number—was suffering from the disease. Two of the patients, aged 8 and 9 years, were in an advanced state of the disease, and I formed the opinion that they had been suffering for close on three weeks. Enquiry at the school they attended showed that they had been absent for that length of time. This school is in close proximity to 12, Cathedral Road where three cases occurred, as before noted, in the month of May, and the probable date of development of the disease in these two cases leads one to suspect that they may have contracted the infection from that source.

Hitherto all the patients had been treated in the Native and Indian Epidemic Hospital at the Beach, but as the family now affected were Mauritians, other accommodation had to be found for them. Accordingly they were that morning removed to the hospital block of the old Boer Prisoners of War Camp at Congella, and this building proved very useful throughout the outbreak.

Naturally an extensive campaign of vaccination was instituted in the vicinity, and every resource of disinfection was exploited to prevent the spread of the disease. It was to be expected that such a large focus of infection would result in a number of other cases occurring among friends, visitors, and neighbours. Unfortunately, our work was rendered harder by the fact that this class of patient and their friends not only did not assist us by giving us full information regarding contacts with their cases, but flatly and persistently, for the most part, denied that anyone had visited them or that they had been visited by friends. However, it was not long before other cases began to occur, and from 7th to the 24th June, 13 cases were found, all of whom were probably infected directly or indirectly from the Neville Lane centre. Of these five were Europeans living in the immediate neighbourhood, one was a native umfaan employed next door, and the others were coloured persons chiefly relations or friends of the Neville Lane family. Included among the latter is a man who left Durban about the time the outbreak was discovered and went to Maritzburg, where he developed the disease some ten days later.

A European male, living in Hewitt Road, who had visited a European in Neville Lane, in whom the disease was developing, contracted the disease on the 20th June, and like all the others was immediately removed to hospital.

As an instance of the thorough manner in which every possible source of infection was followed up, it may be mentioned that one of the patients was found to have been for a day in a private nursing institution before the disease was recognised. The eruption had appeared before being sent to the institution, so she was in an infectious condition. Disinfection was at once carried out at this institution and vaccination of the staff and several patients. The driver of the cab in which this patient was taken home from this institution stupidly denied having done so, and as all other cab-drivers took up a similar attitude, we had no alternative but to disinfect the whole of the licensed cabs in town. The police sent the cabs to the Disinfecting Station and checked them as they arrived.

In the meantime another case had been found belonging to Shire's Barracks, Umgeni. The patient, an Indian child, had been taken to the Depot Hospital by his parents for treatment, and when the disease was recognised he was removed to the Beach Hospital.

On June 24th an Indian child was being brought into the Borough at Umgeni by her parents, when her condition was noticed, and she was stopped until seen by Dr. Park Ross, who found her to be recovering from Small-pox. This family lived in Shire's Barracks also, but had been living outside the Borough near Umgeni for three weeks before the case was discovered.

It is probable that this case was also infected in the Barracks.

These Barracks are situated close to the Borough boundary, less than half-a-mile from that part of Prospect Hall, where the original case—the Mozambique native first referred to—died. Following that case a dozen Small-pox myself with placing a guard of native constables under charge of a European constable round the house for the night. A more thorough examination of the family made in daylight next morning revealed the fact that every person living in the house—10 in number—was suffering from the disease. Two of the patients, aged 8 and 9 years, were in an advanced state of the disease, and I formed the opinion that they had been suffering for close on three weeks. Enquiry at the school they attended showed that they had been absent for that length of time. This school is in close proximity to 12, Cathedral Road where three cases occurred, as before noted, in the month of May, and the probable date of development of the disease in these two cases leads one to suspect that they may have contracted the infection from that source.

Hitherto all the patients had been treated in the Native and Indian Epidemic Hospital at the Beach, but as the family now affected were Mauritians, other accommodation had to be found for them. Accordingly they were that morning removed to the hospital block of the old Boer Prisoners of War Camp at Congella, and this building proved very useful throughout the outbreak.

Naturally an extensive campaign of vaccination was instituted in the vicinity, and every resource of disinfection was exploited to prevent the spread of the disease. It was to be expected that such a large focus of infection would result in a number of other cases occurring among friends, visitors, and neighbours. Unfortunately, our work was rendered harder by the fact that this class of patient and their friends not only did not assist us by giving us full information regarding contacts with their cases, but flatly and persistently, for the most part, denied that anyone had visited them or that they had been visited by friends. However, it was not long before other cases began to occur, and from 7th to the 24th June, 13 cases were found, all of whom were probably infected directly or indirectly from the Neville Lane centre. Of these five were Europeans living in the immediate neighbourhood, one was a native umfaan employed next door, and the others were coloured persons chiefly relations or friends of the Neville Lane family. Included among the latter is a man who left Durban about the time the outbreak was discovered and went to Maritzburg, where he developed the disease some ten days later.

A European male, living in Hewitt Road, who had visited a European in Neville Lane, in whom the disease was developing, contracted the disease on the 20th June, and like all the others was immediately removed to hospital.

As an instance of the thorough manner in which every possible source of infection was followed up, it may be mentioned that one of the patients was found to have been for a day in a private nursing institution before the disease was recognised. The eruption had appeared before being sent to the institution, so she was in an infectious condition. Disinfection was at once carried out at this institution and vaccination of the staff and several patients. The driver of the cab in which this patient was taken home from this institution stoutly denied having done so, and as all other cab-drivers took up a similar attitude, we had no alternative but to disinfect the whole of the licensed cabs in town. The police sent the cabs to the Disinfecting Station and checked them as they arrived.

In the meantime another case had been found belonging to Shire's Barracks, Umgeni. The patient, an Indian child, had been taken to the Depot Hospital by his parents for treatment, and when the disease was recognised he was removed to the Beach Hospital.

On June 28th an Indian child was being brought into the Borough at Umgeni by her parents, when her condition was noticed, and she was stopped until seen by Dr. Park Ross, who found her to be recovering from Small-pox. This family lived in Shire's Barracks also, but had been living outside the Borough near Umgeni for three weeks before the case was discovered.

It is probable that this case was also infected in the Barracks.

These Barracks are situated close to the Borough boundary, less than half-a-mile from that part of Prospect Hall, where the original case—the Mozambique native first referred to—died. Following that case a dozen Small-pox cases had subsequently developed at Prospect Hall, and as it is known that daily inter-communication took place between that district and Shire's Barracks, the probability is that the cases in these Barracks had obtained their infection from the Prospect Hall area.

The whole of the Indians living in Shire's Barracks (350 persons) and the vicinity had been vaccinated when the first case occurred there at the beginning of June, but the parents of the last case had evidently evaded this operation. Judging from the stage of the disease when the case was found, the patient had probably been attacked with the disease about the same time as the first case, but to evade being removed to hospital, was taken away from the ~~Barracks for~~ concealment. No further cases occurred at these Barracks.

A European, employed in the Corporation Electric Department as a meter reader, and living in Mitchell Road, developed the disease on 28th June, and on 4th July a European woman, living with her family in McArthur Street, was found to be suffering from Small-pox. Both cases were removed to Hospital at Congella, and the usual precautionary measures of disinfecting premises and vaccinating contacts carried out. There was no further development of the disease from either case.

Mention has already been made of the difficulty experienced in obtaining information from Mauritians affected, and the two following and last cases in the outbreak afford a good example of how this stupid and unsocial policy affects the people most concerned themselves. On 17th July, two coloured children, living at Umbilo, were reported to be suffering from Small-pox, and removed to hospital. One was 23 months old and the other less than three weeks. As the latter had never been out of doors, it was clear that infection must have been carried to the house shortly after its birth and probably by some visitors. On enquiry it was found that this family was related to the family in Neville Lane, with whom the outbreak started. Another family similarly connected had been found concealing the disease in their home at Greenwood Park about the 6th July, and though we were met with the usual denials of any intercourse, it is impossible for one to get over the suspicion that the infection was probably brought from these cases at Greenwood Park to the house in Umbilo.

There were probably nearly thirty cases either in, or connected directly or indirectly with the Neville Lane centre.

No more cases occurred after the two last mentioned on July 17th.

The last of the European and Coloured cases were discharged from hospital on August 19th, and the last from the Native and Indian Hospital on the 10th August. From first to last three deaths occurred, viz., one Mauritian man and child and one Indian child. This is equivalent to a death rate of 7.5 per 100.

When at the beginning of June the disease was found amongst others than Natives and Indians, we were faced with the difficulty of obtaining hospital accommodation. In the past European cases had always been treated in the European Epidemic Hospital on the Beach, but the extension of the Beach Improvement Scheme had made the use of this building impossible for such a disease as Small-pox. The first cases were therefore removed to the old Boer Prisoners of War Camp. From the number of cases that occurred in a few days it was evident that the accommodation at the latter place would soon be inadequate, and you therefore authorised the Borough Engineer to remove two wood and iron cottages from the corner of Stellawood Road to the Camp, and to arrange for the erection of a new two-ward hospital block at the same place. Fortunately, the outbreak was quelled before it became necessary to use the new block, but towards the end before the new wards were ready the temporary accommodation provided by the two old cottages was severely taxed.

As no accommodation exists in which to segregate "contacts," the plan was adopted where necessary of confining them to their own homes under the surveillance of police guards and supplying them with food. With detached houses this procedure is probably as effectual as removing the people to a segregation camp, costs less, and is more appreciated by the people concerned.

In connection with previous vaccination of cases of Small-pox occurring during this outbreak, I regret no accurate statement can be made. The veracity of many of the patients was not to be depended upon as to whether the operation had been performed. In a number of cases the eruption was fully developed before the case was seen.

There are definite statements that sixteen of the cases had never been vaccinated, fifteen were vaccinated in infancy, and one person had been vaccinated a few years ago and was an extremely mild discreet case. The remainder could give no information on the subject, but visible signs of vaccination were wanting, although the same statement can be made of eleven out of the fifteen said to have been vaccinated in infancy. It might be mentioned that a European adult, vaccinated as a contact, passed through an unmodified attack, the eruption developing eight days after vaccination. An Indian child, vaccinated ten days previous to the eruption appearing, had a somewhat modified attack.

The following table shows the degree of severity of the cases treated in Hospital: —

	European	Native	Indian	Mauritian	TOTAL
Slight Cases	2	2	1	5	10
Severe Cases	4	3	4	5	16
Confluent Cases	2	3	1	8	14
Totals	8	8	6	18	40

VACCINATION.

The Corporation of Durban, fully alive to the seriousness of a Small-pox outbreak, but having no authority to inaugurate a vaccination crusade as apart from actual contacts with Small-pox cases, communicated with Government on the subject of the necessity for such prophylactic measures being immediately adopted. In order to prevent negotiations causing delay the Corporation offered to carry out the vaccination throughout the Municipality at their own expense. To this Government agreed, and gave the desired authority, and the Government District Vaccinator, Dr. Birtwell, was associated with this work.

On February 16th, Dr. Francois and Dr. Adams commenced vaccinating all natives coming into the town either on a visit or for work, and all natives taking out passes at the Togt Office. From this date to the end of May, with the assistance of Dr. Caldwell, who was appointed as "whole-time" vaccinator, the vaccination at the Togt Office was kept up, and many thousands of natives vaccinated. During this time also the Native Barracks of all the large employers of labour, especially in the Point district, were visited in the evenings and several thousands of natives vaccinated. In the latter half of March Dr. Adams attended at the various Police Stations at times advertised in the daily papers for the purpose of vaccinating house-boys, but the attendances were scanty and hardly justified the time spent in this way. By the end of March the majority of the natives in the Borough had been vaccinated, but owing to the occurrence of several cases of Small-pox among Indians it was thought advisable to continue the vaccination among them. The Indian Government-aided Schools were first tackled, and subsequently the Railway Barracks and the Corporation Barracks. In this way over 5,000 Indians were vaccinated, and the Government made a contribution of £50 towards the expenses which the Municipality had incurred in vaccinating Indians and Indian scholars. In the Indian quarter of the town it was found desirable to employ Dr. Lilian Robinson as a vaccinator, on account of the objection of the Mahommedans to male doctors visiting their women's quarters.

Wherever actual cases of Small-pox appeared these vaccinators were drafted to the neighbourhood in order to vaccinate contacts and those likely to have been in contact.

Early in June, however, a more severe outbreak was discovered among coloured people living in Neville Lane, and an energetic house-to-house vaccination was undertaken. It was here necessary to obtain further assistance in the work of vaccinating, and Dr. Young, Surgeon of the s.s. "Gascon," which was undergoing repairs in the dock, was engaged. To this vaccination there was a great deal of opposition, and it became necessary to invoke the help of the Chief Magistrate, who furnished letters to be served on the objectors threatening prosecution. An attempt was made to vaccinate every person not recently vaccinated within an area of 150 yards round any case of Small-pox. As the cases of Small-pox were found as far apart as Umbilo and near Umgeni Lagoon, the vaccination covered a fairly wide area of the town. Not only were "contacts" at home dealt with, but also "contacts" at work.

As there seemed a possibility of Small-pox spreading to the European population in the middle of June, 1912, it was decided that a special attempt should be made to get Europeans protected. The Tuberculosis Bureau in the Town Hall was opened for vaccination on June 21st for four hours, and 153 persons attended; on the 24th, 246 persons; on the 25th, 237; but the scare was soon over, and on July 3rd only 51, and on the 5th 23 persons presented themselves for vaccination. The Bureau was kept open for vaccination until August 20th, but only a few persons availed themselves of the opportunity offered by the Corporation.

During these two months Dr. Freer and Dr. Watkins Baker, of Camperdown, were employed by the Government to assist in vaccinating work, and a fair number of employees of persons who only employ a few servants, e.g., laundries, workshops, etc., were visited, and vaccination performed. In addition some of the persons residing in the environs of Durban to the south were vaccinated, e.g., the Bluff, Jacobs, South Coast Junction, etc.

In addition to the vaccinations done immediately under control of the Public Health Department, in the month of June, 1,100 European Railway employees were vaccinated by the District Surgeon, and 2,600 children were vaccinated at the European Government Schools by vaccinators employed direct by Government.

The total number of vaccinations performed in the Borough of Durban by the vaccinators employed by the Corporation and the Government was approximately 37,500, divided as follows:—

Europeans	5,400
Indians	5,000
Natives	27,100
Total	37,500