

Annual report of the Director, Medical & Health Department / Colony of Mauritius.

Contributors

Mauritius. Medical and Health Department.

Publication/Creation

[Port Louis, Mauritius] : [Govt. Printer], [1916]

Persistent URL

<https://wellcomecollection.org/works/q5gepr5h>

License and attribution

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

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



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

COLONY OF MAURITIUS.

ANNUAL REPORT

ON THE

MEDICAL AND HEALTH DEPARTMENT

FOR 1916.

I.—STATISTICS OF POPULATION.

Population. The population of the Colony, 376,355 on December 31st 1916 showed an increase of 1,235 souls on that returned for the previous year. This increase is due to the excess of births over deaths, amounting to 1,729. The balance is restored by deducting from this figure the excess of departures over arrivals, 494.

Deaths. The total number of deaths registered during the year was 11,432, a decrease of 1,669 on that for the preceding year. The death-rate, 30.4 o/oo of the population compares with 34.8 o/oo for 1915.

The following statement shows the death-rates and the mean death-rates for the districts during the last quinquennial period :—

District.	1912.	1913.	1914.	1915.	1916.	Mean o/oo.
Port Louis ...	56.5	46.2 ₀	39.9	41.0	38.7	44.5
Pamplemousses ...	44.0	40.3	36.3	40.9	33.9	39.0
Riv. du Rempart ...	36.2	34.6	26.9	29.2	24.5	50.2
Flacq ...	36.9	39.6	34.6	34.4	33.5	35.8
Grand Port ...	36.5	35.6	33.4	37.5	32.3	35.6
Savanne ...	33.4	30.9	30.0	35.9	28.8	31.8
Plaines Wilhems ...	31.2	26.9	25.1	27.6	22.8	26.7
Moka ...	34.5	29.8	32.1	33.2	28.2	31.5
Black River ...	41.8	38.2	42.4	40.1	37.7	40.0
Whole Colony ...	38.7	35.5	32.5	34.8	30.4	34.4

It is interesting to note that in 1916, the district death-rates, with those for Port Louis and Plaines Wilhems standing as usual highest and lowest, follow in the same order as the means, while the individual rates are in all cases lower than the corresponding averages. It is also to be seen that the mortality has in each district been lower than the year before.

With regard to the principal causes of death, malaria stands foremost with 3,606 deaths, followed by Pulmonary Tuberculosis, Pneumonia, Bronchitis and Dysentery with 799, 707, 553 and 532 deaths respectively.

The percentage on total deaths was 31.5, 6.9, 6.1, 4.8 and 4.6 o/o and the proportion for the last five years, 31.8, 7.0, 7.1, 4.5 and 4.6 o/o respectively for each of the above causes of death.

Annexure I is the customary statement in connection with this section of the report.

Births. There was a slight rise in the number of births during the year: a total of 13,161; 67 more than the year previous, with a birth-rate of 35.0 o/oo of the population.

The following statement shows the district birth-rates with the average rates for the last five years :—

District.	1912.	1913.	1914.	1915.	1916.	Mean o/oo.
Port Louis ...	38.6	42.6	43.3	38.3	40.2	40.6
Pamplemousses ...	34.9	37.8	40.5	31.9	34.1	35.9
Riv. du Rempart ...	42.1	43.2	43.5	38.9	38.4	41.2
Flacq ...	32.2	37.3	39.6	33.3	33.1	35.0
Grand Port ...	33.3	42.2	41.1	35.9	36.3	38.3
Savanne ...	33.9	41.5	40.1	31.8	31.3	35.6
Plaines Wilhems ...	33.3	39.2	39.9	34.9	36.1	36.6
Moka ...	40.3	45.8	42.4	33.2	30.8	38.4
Black River ...	33.3	37.9	32.6	33.0	28.8	33.1
Whole Colony ...	35.5	40.8	40.8	34.8	35.0	37.4

The means for the five year period bring out Rivière du Rempart district with the highest birth-rate; Port Louis following with Moka, Grand Port, Plaines Wilhems, Pamplemousses, Savanne, Flacq and Black River.

For the year under review, Port Louis takes the lead, Rivière du Rempart coming next with Grand Port, Plaines Wilhems, Pamplemousses, Flacq, Savanne, Moka and Black River following.

The general birth-rate, though higher than in 1915, is below the five year average.

II.—PREVALENCE OF SICKNESS

AND

THE RECURRENCE OF PARTICULAR DISEASES.

The returns for the year under report show a decrease in the number of hospital admissions as well as in that of cases treated at the public dispensaries and of outdoor hospital cases as compared with the record for 1915.

The total figures are : hospital admissions 19,013 ; dispensary cases 53,697 ; hospital outdoor cases 5,406 ; the difference in favour of 1916 being 645, 4,019 and 539 in each case respectively.

The following table shows the figures and the averages for the last five years :—

	1912.	1913.	1914.	1915.	1916.	Average.
Hospital admissions ...	18,183	16,280	18,563	19,658	19,013	18,339.4
Dispensary cases ...	67,578	48,356	62,944	57,716	53,697	58,058.2
Outdoor hospital cases	5,891	7,574	5,818	5,945	5,406	6,126.8
Total ...	91,652	72,210	87,325	83,319	78,116	82,524.4

It is seen from the above that the dispensary and hospital outdoor cases, especially the former, are below the quinquennial average, while the hospital admissions are somewhat above the mean. Among the factors at play in keeping up this figure, the increased readiness to seek admission in certain hospitals must be kept in mind. This, coupled with the decreased general death-rate and the fact that the total of 78,116 sick who applied for treatment in the public Institutions during the year under review compares with an average of 82,524 for the last five years, allows of the inference that the high rate of admission may be ascribed to special features of cases calling for hospital treatment more than to increased sickness.

There were 1,036 deaths in the hospitals ; a case mortality of 5.4 o/o. 2,425 surgical operations were made with 44 deaths.

Malaria and Hypertrophy of Spleen.—The number of cases admitted into the hospitals was 2,905, 823 less than in 1915.

The case mortality was 1.17 against 1.63 o/o the year before.

The rate per thousand of the population of deaths registered under malaria was 9.6, comparing with 11.7 o/oo in 1915 and with 10.9 o/oo for the last quinquennial period. The corresponding rates for death ascribed to malaria and malarial cachexia are 9.9, 12.03 and 11.2 o/oo.

Malaria and Hypertrophy of the Spleen in the public hospitals and asylums during 1916 were as follows :—

Statement showing the admissions for Malaria and Hypertrophy of the Spleen in the public hospitals and asylums during the year 1916 :

<i>Institution.</i>	<i>Malaria.</i>	<i>Hypertrophy of Spleen.</i>	<i>Total.</i>
Civil Hospital ...	603	97	700
Port Louis Prison Hospital ...	61	...	61
Long Mountain ...	101	80	181
Poudre d'Or ...	157	41	198
Flacq ...	254	93	347
Mahébourg ...	125	7	132
Souillac ...	115	41	156
Barkly Asylum ...	422	57	479
Lunatic Asylum ...	53	...	53
Beau Bassin Prison ...	178	4	182
Reformatory ...	30	...	30
Moka ...	364	22	386
Total ...	2,463	442	2,905

The following statement shows the admissions for the last ten years :—

<i>Years.</i>	...1907.	1908.	1909.	1910.	1911.	1912.	1913.	1914.	1915.	1916.
Admissions..	4,272	5,071	3,929	2,338	2,117	3,063	2,546	2,925	3,728	2,905.

The number of cases treated at the public dispensaries was 16,008, a decrease of 4,633 on the previous year.

Annexure II shows the spleen-rates of children in schools for the two half-years of 1916.

The following statement shows the school spleen-rates for the last five years :—

<i>District.</i>	<i>Spleen-rates.</i>				
	1912.	1913.	1914.	1915.	1916.
Port Louis ...	30.06	22.3*	25.1	24.1	22.03
Pamplemousses ...	56.3	48.8	32.7	28.1	16.9
Rivière du Rempart ...	33.5	30.8	21.4	16.5	10.5
Flacq ...	40.7	43.9	33.3	28.9	24.8
Grand Port ...	32.9	28.1	23.3	20.3	18.6
Savanne ...	21.7	19.6	19.1	25.2	20.7
Black River ...	43.9	43.4	46.1	45.2	36.3
Plaines Wilhems ...	2.06	2.5	1.8	2.05	1.8
Moka ...	12.1	9.2	9.3	10.4	9.02
Whole Colony ...	24.2	20.6	18.4	17.2	14.7

* Figure for 2nd half-year only. During the 1st half-year the schools were closed on account of small-pox.

Dysentery :—Admissions for dysentery showed a reduction : a total of 586 against 732 in 1915. The death-rate was also lower; 9.8 o/o against 10.3 o/o. The average admissions for the last five years was 558.

Enteric fever :—There was an increase in the number of enteric fever cases admitted into the hospitals which amounted to 86; 30 more than the preceding year. The case mortality was 27.9 o/o with 24 deaths.

The total number of cases notified in the Colony was 227 against 188 in 1915 and an average of 202 for the last five year period.

The following table shows the distribution of the cases in the various districts :—

District.	January.	February.	March.	April.	May.	June.	July.	August.	September.	October.	November.	December.	Total.	
													1916.	1915.
Port Louis	3	3	5	2	2	4	...	2	...	4	1	1	27	24
Pamplemousses ... ..	...	...	1	...	2	1	...	1	1	...	1	...	7	6
Rivière du Rempart... ..	4	1	5	3	1	2	2	4	4	1	3	3	33	27
Flacq ... ..	...	...	...	...	...	...	...	...	...	...	...	...	...	2
Grand Port ... ..	...	1	...	1	2	...	...	1	2	2	1	1	11	9
Savanne	2	6	2	2	5	5	2	2	9	8	2	3	48	32
Black River	1	1	...	...	...	...	...	1	...	...	...	...	3	2
Plaines Wilhems	10	11	10	2	3	6	5	1	4	1	3	6	62	74
Moka	1	1	2	2	2	2	3	2	6	2	6	7	36	12
Total	21	24	25	12	17	20	12	14	26	18	17	21	227	188

Increased incidence is shown especially in the case of Moka and Savanne, while the disease has again been less prevalent in Plaines Wilhems, as was the case in 1915.

Diphtheria.—4 cases were admitted of which 2 proved fatal. The total number of cases notified was 35 with 5 deaths.

Influenza.—A further decrease in the admissions for influenza is reported; the figures being 1,106, 1,155, and 1,236 for 1916, 1915 and 1914 respectively. The death-rate 3.4 %, lower than 3.8 % for the previous year, is however higher than in 1914, 2.5 %.

The total number of deaths from influenza in the Island was 233 against 197 the year before; it is however somewhat lower than the average for the last five years, 246.

Pneumonia.—The number of admissions for pneumonia was nearly the same as the year before; 345 against 349. The death-rate was higher 33.0 o/o against 28.0 o/o.

There was also very little difference in the mortality from this cause in the Colony; 707 deaths against 710 in 1915. The average figure for the last five years is 913.

Tuberculosis.—The number of admissions reported in 1915 as showing a reduction has further decreased during the year under review. The total is 738 against 812 for the preceding year. The case mortality 20.05 o/o for 148 deaths was less by 2.97 o/o.

The following table shows the deaths in the whole Island for 1916 and 1915 as well as the averages for the last five years :—

Deaths due to :	1916.	1915.	Average for last 5 years.
Pulmonary tuberculosis	799	959	907
Pulmonary tuberculosis and Phthisis	842	1,016	982
All forms of tuberculosis	867	1,073	1,011

Cerebro-Spinal Meningitis.—One case which was cured was admitted for treatment. Three cases were notified with two deaths.

Beri-Beri.—60 admissions with 11 deaths against 95 cases with 10 deaths the year before.

Nephritis.—551 cases with 110 deaths against 660 admissions with 121 deaths in 1915.

Syphilis.—The admissions showed an increase: 438 with 6 deaths against 413 with 5 deaths the preceding year, while the outdoor cases were fewer: 454 against 472. Primary infection accounted for 148 of the admissions.

Leprosy.—On the 1st January 1916, the number of lepers in the St. Lazare Asylum was 79 (61 males and 18 females). During the course of the year there were 23 admissions (18 men and 5 women); 19 of the inmates (16 men and 3 women) died, and 10 men and 1 woman were discharged. There accordingly remained 72 inmates (53 males and 19 females) at the Asylum on December 31st 1916.

Erysipelas.—45 admissions with 9 deaths. The cases notified by private medical practitioners were 57 with 12 deaths.

Measles and Scarlet fever.—None reported.

Mental diseases.—During the course of the year there were 148 admissions (85 males and 63 females) into the Lunatic Asylum. Of these 74 were first admissions, 11 second admissions, 4 third admissions, 44 readmissions from probation and 3 readmissions from the Lunatic Branch Wards of the Barkly Asylum, while 12 persons received on interim order were discharged after having been found not insane.

Heredity, mental worry, alcoholism, epilepsy and gunjah smoking were put down as the principal causes of the mental trouble while the greater proportion of admissions was from Plaines Wilhems and Port Louis and among those without fixed occupation.

The daily average number of patients in the Asylum was 482.87 and that in the Branch Wards 93, against 484.98 and 89 respectively in 1915.

5 male criminal lunatics were admitted, and as 5 such lunatics of the same sex were discharged, the total number of this class of insanes remained on 31st December 1916 the same as the year before, viz.: 23 (20 males and 3 females). 101 patients (67 males and 34 females) were discharged from the Lunatic Asylum and the Barkly Asylum Branch Wards; of these, 15 cured were finally discharged, 67 were released on probation and 19 harmless imbeciles were transferred to the Branch Wards. There were 40 deaths in the Establishment.

At the close of the year under report the roll of inmates at the Lunatic Asylum was 486 (285 males and 201 females) and the imbeciles in the Branch Wards at the Barkly Asylum numbered 99 (69 males and 30 females).

The total number of certified lunatics in the Colony on 31st December 1916 was 743, an increase of 21 on the return for the preceding year. The ratio of insane to total population was 1 in 506 or 19.69 per 10,000.

Whooping Cough.—No case reported.

Varicella.—26 cases were notified of which nine were treated in the hospitals.

Dengue.—No case treated.

Plague.—During the course of the year, 22 cases of plague were notified, with a death-rate of 68.2 o/o.

The infection in all cases was contracted in the localities known as "La Louise," just beyond the Quatre Bornes Township in Plaines Wilhems and "Palma Road," the practically contiguous part of Black River district. 1 case which was found in Port Louis has been returned under its proper district and 5 cases occurred in Quatre Bornes. The cases show as follows:—Plaines Wilhems 16; Black River 6.

Between January and June, 5 cases were notified at long intervals and the others, save one reported at the beginning of the month, were detected in the last week of December.

Race incidence.—The population affected was as follows:—Indians 10 ; Mauritians (non-white) 10 ; Chinese 2.

Sex incidence.—14 males and 8 females ; with a percentage of 63.6 and 36.4 respectively.

Age incidence.—The cases were distributed in the age groups 6 to 10, 11 to 20 and 21 to 60 to the number 1, 5 and 16 respectively.

The following is a statement of the number of cases, deaths and death-rates since the outbreak of plague in the Colony :—

<i>Years.</i>	<i>Cases.</i>	<i>Deaths.</i>	<i>Death-rate.</i>
—	—	—	—
			%
1899	1,416	1,117	78.9
1900	796	593	74.5
1901	1,093	805	73.7
1902	506	384	76.3
1903	1,395	1,035	74.2
1904	568	449	79.0
1905	308	251	81.5
1906	434	344	79.3
1907	224	178	79.5
1908	167	137	82.0
1909	457	333	72.9
1910	731	553	75.6
1911	173	131	75.7
1912	656	541	82.5
1913	313	261	83.4
1914	125	111	88.8
1915	33	25	75.8
1916	22	15	68.2

Type of disease.—Bubonic 19 cases with 12 deaths ; Septicemic 2 ; Pneumonic 1 ; all fatal.

Disinfection, &c.—Active measures of disinfection including partial or complete destruction by fire of infected huts, were taken in connection with the outbreak of plague above reported and extensive destruction of rats was carried out.

In Port Louis the prophylactic campaign of disinfection and rat extermination has continued to be systematically carried out and it affords satisfaction to record that no case of local origin has occurred in the town since April 1915. During the course of the year, a total number of 3,306 disinfections were performed during which 891 dead animals (rats, mice and cats) were found.

The total number of rats destroyed in the Colony by the staff was 122,393 of which 55,532 in Port Louis. The infection rate among the rats trapped or found dead in the town was 0.4 o/o against 1.7 o/o the year before ; 80 o/o of these rodents were microscopically examined for plague bacilli.

Fumigation by means of the portable Clayton machines, now two in number, and with ordinary sulphur burners was as usual carried out in Port Louis. The number of dead rodents collected after the completion of these disinfections amounted to 2,069. Grain stores were claytonized on 135 occasions.

Lazarets and treatment.—6 of the cases were seen after death, and 2 in such a low state that they were assisted at home where they died. The remaining 14 cases were removed to the Barkly Asylum C.D. Wards and to the Grand River North West Lazaret. 7 of them recovered.

III.—VACCINATION.

The number of primary vaccinations made by the Public Vaccinators was 9,403 of which 9,285 were successful and 101 failed while in 17 children the results could not be ascertained. The proportion of vaccinations to total births was 71.4 o/o.

IV.—SANITARY ADMINISTRATION.

This matter is dealt with in Annexures III and IV.

V.—HOSPITALS & ASYLUMS.

The following table gives a summary of the work done at these Establishments during 1916 :—

Hospitals.	Remain- ing on 31.12.15.	Fresh cases.		Deaths.	Remain- ing on 31.12.16.	No. of Beds.
		Indoor.	Outdoor.			
Civil ...	168	6,127	423	327	188	290
Port Louis Prison ...	5	284	737	2	7	17
Long Mountain ...	9	1,149	273	71	13	35
Poudre d'Or ...	20	1,366	...	56	31	68
Flacq ...	14	1,344	9	69	23	82
Mahébourg ...	27	1,235	253	80	22	106
Souillac ...	19	1,393	31	86	41	78
Barkly Asylum ...	100	3,048	22	219	60	219
Lunatic Asylum ...	32	438	1,237	40	34	33
Beau Bassin Prison	18	500	2,373	15	22	32
Reformatory ...	...	46	30	...	...	10
Moka ...	34	2,083	18	71	43	67
Total ...	446	19,013	5,406	1,036	484	1,037

VI.—MISCELLANEOUS.

Port and Quarantine.—During the course of the year the number of arrivals of ships was 289 (258 steamers and 31 sailing vessels). Free pratique was granted by the Health Officer to 242 of the vessels; 22 refused pratique and 24 received pratique after detention for disinfection of the clothes and effects of the steerage passengers. In one instance four cases of small-pox were detected on board. The crew and passengers were vaccinated, the latter being landed at Cannoniers' Point Quarantine Station with the patients except one who being cured proceeded on his voyage. The ship worked in quarantine during the remainder of her stay in harbour and there was no fresh case at the Quarantine Station. The passengers were liberated after completing the period of observation, and the patients when cured.

The Clayton apparatus was employed 23 times for the disinfection afloat of grain cargo. The steam stoves at the Harbour Disinfecting Station were worked on 17 different occasions for the disinfection of the effects of outgoing passengers and of certain articles imported or shipped. Infected clothing and bedding from Port Louis and the rural districts were also dealt with on 108 occasions at the Station.

Anti-malarial Works.—The minor works have continued to receive the attention of the Sanitary Wardens. Major works were carried out especially in connection with the Mon Gout, Espérance, Mon Rocher, Mon Plaisir, Beau Plan marshes, and Rivers des Pamplemousses and Calebasses in Pamplemousses district, as well as in Rivière Sèche, Rivière Française, Rivelets Pont Blanc and Grande Barbe in Flacq district. In Port Louis, the digging of the Champ de Lort drain was undertaken.

LABORATORY WORK.

Chemical and Medico-legal.—The number of samples or articles of evidence referred to the Government Analyst for examination and report during the course of the year was 149.

They relate to the following offences :—

Rape ...	8 cases.
Murder or attempt at murder ...	3 "
Manslaughter ...	1 "
Wounds and blows ...	2 "
Poisoning ...	6 "
Illegal possession of poison ...	1 "
Bestiality ...	1 "
Illicit distillation 4, illegal possession of gunjah 1, pollution of rivers 2, examination of guano 1 ...	8 "
Sale of food and drink unfit for consumption :— milk 36, flour 2, rum 1, ghee 1 ...	40 "

Total... 70 cases.

The various Government Departments forwarded the articles as follows :—

Medical and Health Department	...	...	...	63 articles.
Police	...	...	...	70 „
Revenue	...	...	...	14 „
Customs	...	...	...	2 „
Total				149

In addition to the above, two lactometers were controlled for the Health Department and a sample of denaturants was tested at the request of the Inland Revenue Department.

Bacteriological and Clinical :—The following is a summary of the work done :—

Microscopical examination for malaria, filariasis, diphtheria, plague, affections of the genito-urinary passages, cerebro-spinal meningitis, syphilis, tuberculosis, dysentery, diarrhoea and intestinal parasites	...	...	...	433
Widal's reaction for typhoid and paratyphoid	...	...	...	215
Wasserman's reaction	...	...	...	12
Bacteriological Examinations involving cultures	...	...	...	189
Differential leucocyte counts	...	...	...	69
Blood counts (red cells only)	...	...	...	3
Vaccines (autogenous)				
Typhoid	...	...	...	19
Staphylococcus 19, Bac coli communis 6, Bac coli communior 3, Streptococcus 3, Bac paracoli 2, Bac lactis aerogenes 1, Bac pyocyanus 1, Bac paratyphosus 1, a diphtheroid organism 1, a diplococcus 1	...	...	...	38
Examination of urine	...	...	...	108
Quantitative examination of urea in blood	...	...	...	2
Hæmoglobin estimation	...	...	...	2
Albumino-reaction of sputum for tuberculosis	...	...	...	1

In addition 8 neoplastic growths were received which, on section, proved to be specimens of : large round celled sarcoma 1, chondro sarcoma 1, spindle celled sarcoma 2, simple fibroma 2, simple papilloma 1, myxo fibroma 1.

The preparation of antityphoid vaccine for prophylactic use by the Wright Leishman method was continued, but the demand was less than the year before. Only 168 persons were vaccinated.

The following research and experimental work was undertaken :— An investigation into the blood parasites of birds in Mauritius disclosing infestation with Leucocytozoon or Halteridium or both. Study of a disease of goats due to combined infestation with Strongylus (hæmonchus) Contortus and coccidium cuniculi. Investigation into the possible intermediate hosts of certain trematode worms in Mauritius. Over 800 fresh water snails were dissected of which 2.45 o/o (belonging to a single genus) were found infested with rediæ and cercariæ. It has not yet been possible to determine the species of trematodes represented, but though bilharziosis is not rare in the localities from which the snails were obtained, the cercaria of Bilharzia Hæmatobium has not so far been met with.

Departmental changes, &c.—Legislation connected with the work of this Department comprised an Ordinance to amend the Pharmacy Ordinance 1912, providing for a modified examination for qualification as assistant pharmacists in the case of students employed as such for more than ten years and an Ordinance amending the Public Health Ordinance No. 32 of 1894-95 prescribing action with regard to vegetable growth in lakes, ponds and rivers under certain circumstances. Regulations were also made to prohibit the pollution by washing, &c., of certain rivers and in connection with night soil services.

In November 1916, Dr. du Vergé who was acting as Government Medical Officer, Rivière du Rempart, left the Department to proceed to England with a view to offer his services to the War Department. He was replaced by Dr. Lamberty whose post as Acting Dispensary Medical Officer, Port Louis, was taken by Dr. Aubergé.

In October the execution of the major anti-malarial works in the Rivière Sèche section, Flacq, was entrusted to the Director of Public Works and Mr. Le Meur ceased to be attached to this Department.

The year closed with the retirement from the service of Dr. Clarenc who had for the last 48 years filled the post of Dispensary Medical Officer, St. Pierre. Dr. Clarenc's connection with this Department has been so far the longest on record and it affords me great satisfaction to acknowledge the enlightened professional assistance he has given to my predecessors in office and to myself, while expressing my regret at the loss of his valuable services.

27th August, 1917.

F. J. R. MOMPLÉ,

Acting Director, Medical & Health Department.

ANNEXURE I.

**Statement of deaths from principal diseases
during the year 1916.**

Obtained from Civil Status returns.

Diseases.	January.	February.	March.	April.	May.	June.	July.	August.	September.	October.	November.	December.	Total.
Plague ...	1	3	1	1	...	1	...	...	...	...	...	7	14
Enteric fever ...	7	6	5	2	5	2	6	2	6	3	6	2	52
Malarial fever...	316	282	358	360	374	247	316	277	290	278	256	252	3,606
" Cachexia	15	11	4	10	7	12	14	6	4	16	14	5	118
Dysentery ...	38	43	48	48	64	59	57	41	46	38	24	26	532
Whooping Cough	1	1	1	...	...	...	...	...	...	...	...	...	3
Influenza ...	10	1	4	8	10	8	35	72	31	21	25	8	233
Pneumonia ...	40	28	31	33	57	48	76	123	94	64	57	56	707
Bronchitis ...	30	28	36	27	51	47	77	61	45	54	50	47	553
Phthisis ...	3	2	2	4	4	...	4	5	6	6	...	7	43
Tuberculosis ...	56	59	63	46	61	60	75	72	81	85	83	58	799
Erysipelas ...	2	1	...	...	...	1	1	1	1	1	1	3	12
Measles ...	...	...	...	...	...	...	...	...	...	...	...	...	...
Diphtheria ...	...	1	...	...	1	1	1	1	...	...	...	...	5
Cerebro-Spinal Meningitis	1	...	...	...	...	1	...	...	...	...	...	...	2

ANNEXURE II. A.

Statement showing the Spleen-rates of children in Schools.

Half-year ended 30th June 1916.

District.	Total children on roll.	Children examined.	Spleens.					Spleen-rate.	Average spleen.
			1	3	6	9	Total with spleen.		
Port Louis ...	5,925	3,745	2,842	526	214	163	903	24.11	1.91
Pamplemousses ...	1,659	613	508	56	24	25	105	17.13	1.70
Riv. du Rempart..	1,396	842	753	57	14	18	89	10.57	1.39
Flacq ...	2,401	1,271	912	197	89	73	359	28.25	2.12
Grand Port ...	3,013	1,865	1,502	306	45	9	363	19.46	1.49
Savanne ...	1,532	991	761	197	30	3	230	23.20	1.57
Black River ...	547	284	165	60	34	25	119	41.9	2.72
Plaines Wilhems..	6,001	4,397	4,315	65	14	3	82	1.86	1.05
Moka ...	1,571	972	868	57	20	27	104	10.7	1.44
Total ...	24,045	14,980	12,626	1,521	487	346	2,354	15.71	1.55

Figure 1 = Normal spleen.
 " 3 = Three times the size of normal spleen.
 " 6 = Six times " "
 " 9 = Nine times " "

ANNEXURE II. B.

Statement showing the Spleen-rates of children in Schools.

Half-year ended 31st December 1916.

District.	Total children on roll.	Children examined.	Spleens.					Total with spleen.	Spleen-rate.	Average spleen.
			1	3	6	9				
Port Louis ...	5,543	3,733	2,988	409	202	134	745	19.95	1.77	
Pamplemousses ...	1,648	1,161	967	106	58	30	194	16.71	1.64	
Riv. du Rempart..	1,329	853	763	54	9	27	90	10.55	1.43	
Flacq ...	2,179	1,512	1,180	173	87	72	332	21.96	1.89	
Grand Port ...	2,910	1,568	1,292	230	41	5	276	17.60	1.45	
Savanne ...	1,444	815	670	128	14	3	145	17.79	1.42	
Black River ...	516	316	217	44	19	36	99	31.32	2.48	
Plaines Wilhems..	5,727	3,809	3,739	58	9	3	70	1.84	1.05	
Moka ...	1,477	1,043	966	51	15	11	77	7.38	1.25	
Total ...	22,773	14,810	12,782	1,253	454	321	2,028	13.68	1.49	

ANNEXURE III.

Sanitary condition of the Island.

Annual Report for the year 1916.

I have the honor to submit the following annual report on the sanitary condition of the Island during the year 1916, which is based on the several reports received from the various local Sanitary Authorities.

The usual returns showing the duties performed and the contraventions detected by the staff of the Sanitary officers are herewith submitted.

The general description of the work done is as follows :—

1. PORT LOUIS.—During the year under review the Sanitary Officers paid 11,441 visits to private premises and lodging houses. The inspections of shops, markets, bake-houses, slaughter-houses and butchers' shops amounted to 2,004 and special enquiries and other duties, &c., including attendance at cremations and exhumations as well as controls of the milk trade were attended to on 7,025 occasions.

2. The staff made 1,481 inspections of stables, pigsties and cowsheds and controlled the night soil service and the public latrines 361 times during the year.

3. The private gratuitous latrines, cemeteries, noxious factories, docks, camps, water-courses, &c., called for 513 inspections.

4. Quarantine duties were attended to on an aggregate of 37 days by the disinfectors of the staff.

5. The waste-lands in the town and its suburbs were cleaned of rank vegetation over an extent of 499,480 square yards.

6. The Sanitary Officers attended Court on 282 occasions.

7. The total number of contraventions of the different enactments detected during the year amounted to 890, and out of these 35 had not been finally dealt with when the year was closed. The amount of fines collected amounted to Rs. 1,824.05.

8. 526 Schedules were served upon the Municipal Corporation for nuisances, the removal of which the Municipality is responsible for, under the provisions of Ordinance No. 23 of 1903, and 154 of them still remained unabated at the end of the year.

9. Public nuisances due to defective gutters, gully-holes, regards, broken underground water-pipes continued to be very numerous and in many instances, the nuisances continued for days and weeks before they were remedied.

10. The condition of the bed and banks of the various streams of the town is still defective in many respects. These public nuisances must again be referred to, especially in view of the favourable conditions they offer to the development and spread of malaria in Port Louis.

11. The present method of water distribution in Port Louis has, as yet, received no attention and until it is modified no improvement in the constant waste of water on private premises can be contemplated.

12. The scavenging service was not performed in a regular and satisfactory manner during the first four months of the year. The contractor rescinded his contract at the end of April, and from the 1st of May to the end of the year the service was performed by the Municipality. The principal thoroughfares were properly attended to, but the streets in the outlying parts of the town were somewhat neglected. The service of the town was greatly neglected after the cyclone of the 26th of May and the matter had to be reported several times to the Municipal Authorities before the accumulated refuse was efficiently removed. Scavenging neglects were reported on 538 occasions. The scavenging service of the extra urban area has been attended to by means of a gang of labourers and two carts employed by this Department, extra assistance being occasionally given when required.

13. Besides the public nuisances above referred to, 19 were brought to the notice of the Honourable the Director of Public Works, 5 to that of the Honourable the General Manager of Railways, while 1,324 notices and requests were served in connection with nuisances detected on private premises.

14. 206 inspections were made by the staff in connection with dhobies' workshops and bake-houses in the town.

15. The application of the Swine Destruction Ordinance resulted in the shooting of 137 pigs by the Police in the extra urban areas of the town of Port Louis.

16. The water carriage system has been further extended in Port Louis by the construction of 2,900 feet of sewers and 18 private premises have been connected with the Drainage System.

17. 921 orders under Ordinance No. 21 of 1900 were issued by the Sanitary Warden of Port Louis for the removal of insanitary conditions detected in the shops, stores and private premises in the town of Port Louis and out of that number, 800 were reported by the staff as complied with before the year was closed.

18. 83 notices were issued under Regulations No. 258 of 1914 with a view to secure a more satisfactory method in the storage of grain and other stores in Port Louis facilitating in that way the destruction of rodents in those stores by means of Sulphur fumes.

19. There has been no change in the water supply of the town. It remains, as has already been pointed out by my predecessors, unsatisfactory and exposed to pollution, especially that branch of Bathurst Canal which supplies water to the inhabitants residing in the upper part of Pamplemousses Road. It is to be hoped that the Municipal Corporation will soon take in hand that all-important question of providing the town with a pure water-supply.

20. PLAGUE.—22 cases of plague occurred in Plaines Wilhems and Black River districts with 15 deaths giving a death-rate of 68.2%. Of these 22 cases, 6 were seen after death, 2 in extremis and 14 were removed to Government Hospitals, viz. : 8 to Barkly Asylum and 6 to Grand River N.W. Lazaret. 5 deaths occurred at Barkly Asylum, giving a death-rate of 62.5 % and 2 at Grand River N.W. Lazaret, giving a death-rate of 33.3 %. Port Louis and the other districts remained free. The last case registered in Port Louis occurred on the 5th April 1915.

21. Rigorous preventive measures were taken by the Sanitary Wardens in the two infected districts immediately the first case was detected, with the result that the disease gradually decreased and finally disappeared on the 27th of January 1917 when the last case was registered.

22. DISINFECTION.—3,306 premises were disinfected in Port Louis. Most of those disinfections were carried out preventively in premises situated in infected localities, 204 were made on account of plague infected rats and 54 for infectious diseases other than plague.

23. FUMIGATION.—1,267 premises were fumigated by means of Sulphur dioxide :—204 by the two Clayton apparatuses and 1,063 by the ordinary Sulphur burners. The number of rats destroyed by this process amounted to 2,069.

24. DESTRUCTION OF RODENTS.—The staff is composed of 63 rat-catchers and 3 poisoners. The number of traps placed in the various parts of the town including its suburbs, amounted to 5,742. The number of rodents destroyed was 55,532 in Port Louis and 66,860 in the country districts.

25. GRAVID FEMALES.—799 gravid females were destroyed in Port Louis during the year under review and the number of young ones found in them amounted to 4,189.

26. RAT INFECTION.—45,390 rodents were microscopically examined during the year. Of these 204 were found plague infected, giving a rate of infection among rodents of 0.4 o/o for 1916 as against 1.7 o/o for 1915.

RURAL DISTRICTS.

27. The Sanitary Officers detected 3,016 contraventions of the Sanitary Enactments. Action was taken in 2,257 cases and the fines collected amounted to Rs. 7,659.63. 19,881 notices were issued by the Sanitary Authorities for the abatement of nuisances on private premises; 2,417 gave rise to prosecutions and the fines imposed amounted to Rs. 3,162.91.

28. The total amount of Revenue collected from the cemeteries and markets was Rs. 20,742.33.

29. The total number of animals killed in the three public slaughter-houses was 4,328 and the fees collected amounted to Rs. 8,230.

30. The working of the following noxious factories has been sanctioned during the year under review :—

Aloe Fibre Factory	...	...	2
Lime Kiln	...	...	1
Total	...	...	3

31. Anti-malarial measures on the lines laid down by Professor Ross were continued under the supervision of the Sanitary Engineer. The spleen census and the treatment of School children with quinine have been attended to during the year by the Sanitary Authorities and a number of sanitary and anti-malarial works have been carried out under their supervision.

32. House to house distribution of quinine was carried out by three Quinine Distributors under the directions of the Sanitary Wardens. This free distribution of quinine has been a great boon to persons residing in malarial localities, especially to those who are poor and living far away from places where this drug could be obtained.

F. L. KEISLER,

28th June, 1917.

Acting Chief Sanitary Officer.

ANNEXURE IV.

Progress of Major Anti-Malarial Works during the year 1916.

FLACQ.

Rivière Française.—The large marsh of 40 acres at Constance (d'Arifat) has been completely drained and is now planted with sugar cane.

In 1914 and 1915 preliminary works had been carried out in the bed of Rivière Française, below the marsh, having for their immediate object the drainage of the swamps on both banks of the river and for their ultimate object the drainage of the large marsh. A properly graded bed 6 feet wide and 4 feet deep had been given to the river which was previously flat on a length of 4,000 feet.

During the early months of 1916 heavy rains having caused the river to flood its banks and water having collected in the cultivated fields close by, the width of 6 feet was increased to 10 and the depth also increased. This was done on a length of 2,000 feet; and the work having been carried out almost exclusively in rock necessitating heavy and continuous blasting proved to be very difficult and costly. Subsequent heavy rains have however shown it to be effective and final.

In order to drain the marsh itself, a channel 8 feet wide and 4 feet deep, following more or less the lie of the land, was cut across it on a length of 3,000 feet. This work had also to be effected in hard rock necessitating heavy blasting.

The whole of the marsh has now been planted and heavy rains have not yet caused the formation of pools any where on its extent.

PAMPLEMOUSSES.

Mon Goût.—The marshes existing on the former "Mon Goût" Estate, now parcelled out, have been drained. Some of them were formed by the want of a proper discharge channel to carry away water issuing from springs in their immediate neighbourhood, whilst others owed their existence to the imperfect condition of the stream running through the estate and were to be found along the flatter portion of its banks.

By deepening and grading the stream and connecting the marshes to it by means of subsidiary trenches, a suitable discharge was provided which carried away to the Pamplémousses River the once stagnant waters. The marshes have disappeared and the reclaimed land has been planted with sugar cane. 6,500 feet of stream have been deepened by 2 feet 6 inches and widened to 3 feet 6 inches average. Three roadway bridges on the stream have been rebuilt.

Espérance.—On the former "Espérance" Estate, now also parcelled out, a most insalubrious marsh, overgrown with aquatic vegetation and affecting seriously the sanitary condition of the locality, existed. It was caused by the water of the above mentioned "Mon Goût" stream spreading on low-lying land without proper discharge channel. Besides this marsh other smaller marshes and swamps were to be found along the wide and flat banks of the "Mon Goût" stream which runs right across "Espérance" Estate.

A properly graded stream was made partly by improving what already existed, partly by making new channels. 3,800 feet of channel were provided on an average width of 3 feet 6 inches and depth of 2 feet 6 inches. Four roadway bridges were rebuilt. All the marshes and swamps have disappeared and the land has been planted.

Langlois Canal.—This canal which conveys water to Mr. Langlois' property situated in Pamplémousses village was really a water way scraped in the ground with practically no fall at all. A large objectionable swamp overgrown with obnoxious vegetation existed on it, whilst the whole of its course was a wide strip of almost stagnant water with aquatic vegetation on both sides. A properly graded high level deviation canal partly in hard earth with high banks, partly in masonry, has been provided on a length of 1,350 feet. 700 feet of the canal where the banks and slope were fairly good were improved. The swampy course of the former canal has been drained by a properly graded low-level trench and the whole of the reclaimed land planted.

Pamplémousses River Mount Section.—In previous years the course of the Pamplémousses river had been properly canalized from "Rosalie" Estate down to the "Mount" Reservoir. During 1916 the canalization was carried onwards to the new "Maison Blanche" Dyke on a length of 3,000 feet.

This work was all the more necessary that the estate hospital and camp as well as populated areas were to be found along the banks of the river which were in a particular bad condition facilitating the growth of aquatic vegetation, the existence of pools and marshes; mosquitoes were very abundant there.

A proper bed 8 feet wide and 3 feet 6 inches deep with a good and even gradient has been provided. As a good deal of rock, necessitating heavy blasting, was met with, the work did not prove very easy to carry out. Two bridges carrying roadways were also rebuilt. The banks of the stream are now dry and have been planted with sugar cane and coffee.

Labourdonnais Canal.—This canal had to be improved on a length of 1,200 feet because along its lower section was to be found a most insalubrious marsh affecting the centre of Pamplémousses village. Its upper section was so flat that it caused water to stagnate on the "Mon Plaisir" grounds favouring the growth of mosquitoes which were abundant in the locality. A concrete channel 3 feet wide by 18 inches deep was constructed along the lower section, on a length of 500 feet. The ground was so soft that the foundations of the channel had to be carried to a depth of 3 feet 6 inches. Along the upper section a channel 700 feet long 2 feet wide and 3 feet deep was blasted almost entirely in rock. The culvert under the "Bois Rouge" road was also reconstructed. As a result of this work, water no longer stagnates on the "Mon Plaisir" grounds or along the banks of the canal and what used to be marshy land along the lower section has now been planted with sugar cane.

Beau Plan.—In a previous report the works undertaken to drain the "Beau Plan" marsh were described and it was stated that the marsh had been drained. Subsequent heavy rains having shown that pools could be formed in the very low lying portion of the marsh, the central channel which had been cut right across the marsh had to be deepened by 2 feet on a length of 2,300

feet and 800 feet more herring bone trenches were cut. This work which had to be carried out rather deep under ground proved to be difficult on account of the rocky nature of the ground. Two culverts were reconstructed.

Mon Rocher.—On "Mon Rocher" Estate there existed a marshy area of about 5 acres caused by the want of a proper channel to carry away the water from the springs of the locality as well as the rain water accumulating during the wet season on the low lying land. The imperfect channel which ran through rocky ground was accordingly deepened 3 feet on a length of 2,500 feet, and made 4 feet 6 inches wide. 2,000 feet of side trenches were also cut. On the path of the channel there were two culverts one under the Railway and the other under the "Bois Rouge" road. The first one was deepened 2 feet and rebuilt in concrete. The second one which was in loose stones was pulled down altogether and rebuilt in masonry. The whole area has now been dried and is partly planted. These works have rendered possible the planting in sugar cane in some 10 acres of land which had never been cultivated before.

Tombeau River.—The channelizing of the bed of the river above the Municipal dam mentioned in last year's report was continued. 2,300 feet were treated. Along 800 feet a channel 7 feet wide by 5 feet deep was blasted entirely in solid lava rock, a most arduous operation far exceeding in dynamite consumption anything that had previously been done. Along 600 feet a channel which runs through rather soft earth was made 10 feet wide with banks 4 feet high and a flat gradient. Along 900 feet the channel (also 10 feet wide) runs through hard ground made up of boulders embedded in hard soil. It however had to be carried to the somewhat great depth of 8 feet in order to drain a large and deep pond higher up stream. This section of the work also necessitated some heavy blasting.

The present appearance of the river so far treated differs entirely from the past. What used to be a long lake 30 feet wide overgrown with aquatic vegetation is now a piece of dry land with a running stream in the middle.

DRAINAGE WORKS.

New drains were made at :—Camp Natou (lower section), Souillac, Pamplémousses.

Whilst repairs were effected to :—Camp Natou (upper section), Barkly Asylum, Mahebourg.

LAZARETS.

Repairs were effected to the following lazarets :—Curepipe, Souillac, Poudre d'Or and Camp Coriolis.

PUBLIC LATRINES.

Eight public latrines have been repaired in the rural districts.

CEMETERY BUILDINGS.

Repairs were effected to the following cemetery buildings :—Bois Marchand, Cap Malheureux, Pointe Lascars, Plaine Magnien, St. Amand, Trois Ilots, Flic-en-Flac.

BUILDING PERMITS.

For straw huts	...	...	...	1,474
For better class buildings	...	...	...	312
For repairs	...	...	...	187
				<hr/>
Total	...	...	...	1,973
				<hr/>

29th August, 1917.

J. Lois NAZ,
Sanitary Engineer.