Progress report of the Medical Officer of Health to 30th September, 1925 / Urban Sanitary District of the City of Port-of-Spain.

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URBAN SANITARY DISTRICT OF THE CITY OF PORT-OF-SPAIN.

PROGRESS REPORT OF THE MEDICAL OFFICER OF HEALTH
TO SOTH SEPTEMBER, 1925.

Laid before the City Council on the 22nd October, 1925.

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1925.



URBAN SANITARY DISTRICT OF THE CITY OF PORT-OF-SPAIN.

Progress Report of the Medical Officer of Health to 30th September, 1925.

SECRETARY LOCAL AUTHORITY.

SIR.

 I have the honour to submit for the information of the Local Authority the following progress report on the health conditions and sanitary administration of the Urban Sanitary District of the City of Port-of-Spain for the period of nine months ended 30th September, 1925.

HEALTH CONDITIONS.

2. The health conditions of the City for the nine months ended 30th September were an improvement on those which prevailed during the corresponding period last year, when 334 cases of enteric fever with 44 deaths were notified to the Medical Officer of Health, compared with 150 cases and the remarkably low mortality of 13 deaths this year, being a reduction of 55 per cent. in the number of cases, and 66 per cent. in the deaths registered. The number of cases would have been fewer still but for the fortuitous occurrence in September of three sets of carrier cases numbering 6, 5 and 4, respectively, which accounted for 15 out of a total of 31 notifications that month. These cases were traced to the presence of a carrier in each of the three homes affected. As regards the set of 6 cases, infection actually took place in the country through the agency of a carrier tablemaid from the City who had accompanied the family on a fortnight's holiday.

DISTRIBUTION OF ENTERIC CASES AND DEATHS.

3. The distribution of enteric cases and deaths, which were nearly evenly divided between the sewered and the unsewered districts, is as follows for the two periods:—

Table I.

Districts.			January to September.					January to September.				
City (sewered) St. Clair (sewered) Belmont (unsewered) East Dry River (unsewered) Woodbrook (unsewered)	1111/	::		6 49 65	cases do. do. do. do.	0 7 12	deaths do. do. do. do.		35 25	cases- do. do. do. do.	0 0 4	deaths, do. do. do. do.
Total		1,4		334	do.	44	do.		150	do.	13	do.



CHLORINATION.

- 4. On the assumption that the abnormal rise in the prevalence of enteric fever which took place in Port-of-Spain in February, 1924, was mainly due to the effect of specific—and probably heavy—pollution of the Maraval river, near which recent cases of this disease were found to have occurred, the Local Authority chlorinated the water supply from that source as a tentative measure of protection against further possible infection. Using bleaching powder, chlorination was begun at the end of February and, except for a few days when the supply of bleach ran short, the process was continued until the end of August last when the Paterson Chloronome apparatus imported from London was put into service and chlorine gas used in place of bleach.
- 5. Later, following bacteriological indications, the St. Ann's and Cocorite supplies were in turn chlorinated with bleaching powder, until recently when the installation of a Chloronome in each of these stations permitted the use of chlorine gas. Facilities for chlorinating the whole of the water supply from all the various sources were completed by putting up a Chloronome at the Diego Martin pumping station for use when required.

TASTE TROUBLES.

- 6. The peculiar taste sometimes imparted to the water by the chemical treatment to which it was subjected provoked a good deal of unfavourable comment during the experimental stages of the process. This public inconvenience was the cause of much anxious solicitude on the part of the Local Authority and their officers, and every effort, consistent with safety, was made to reduce the quantity of material used in order to minimise the production of "taste" in the water.
- 7. This year complaints have happily been few, and since the Chloronome apparatus has been in use at Maraval, in combination with a permanganate "detaster," the palatability of the water has been so completely restored that many consumers who formerly complained now inquire whether chlorination has been stopped altogether.

ENTERIC FEVER.

8. It is satisfactory to report that a remarkable decline in the prevalence of enteric fever in Port-of-Spain has taken place since the plan of chlorinating the water supply has been adopted.

In 1924 commencing with 29 cases, or a little below the average number for the month of January in the preceding six years, viz.:—1918-1923, the disease sharply rose to a peak with 99 cases in February, at the end of which month, as already stated, chlorination was begun. From the following month onwards the cases steadily declined until in June the number fell much below all the monthly averages for the previous six years and, still dropping from month to month, remained at a low level to the end of 1924.

9. This year the notifications each month from January to September have also kept below the mean monthly incidence of the disease for the six years immediately preceding the institution of chlorination.

MODES OF SPREAD.

10. It needs to be remembered that enteric fever is not a new disease in Port-of-Spain. It has been endemic for scores of years, and there are official records of epidemic outbreaks dating over fifty years ago. The disease, as is generally known, may be spread in a variety of ways—by direct contact with the sick; by food, milk, water and other beverages contaminated with bowel evacuations or the urine—which is equally dangerous—of persons suffering or convalescent from the disease; directly or indirectly by human carriers, namely, former sufferers who, though cured, still continue to pass the germs of the disease in their excreta, and also by flies, especially in places where these insect carriers have access to specifically infected cesspits, soiled bed clothes and other articles.

MARAVAL WATER SUPPLY.

11. With the exposed condition of the Maraval river in its course through the village and the occurrence there—not only recently but for an indefinite period in the past—of cases of enteric fever, many of which, no doubt, have subsequently become temporary or permanent carriers of the disease, it seems inevitable that the water supply from that source should be one of the principal elements among those which combine to keep up the endemicity of enteric fever in Port-of-Spain, and are responsible under favourable conditions for occasional rises in its prevalence.

EFFECT OF PURIFICATION.

12. The results thus far obtained from the purification of the water supply lend support to this view, and indicate that the contribution of the Maraval river to the common stock of causes responsible for the spread of enteric fever in the City has been seriously curtailed if not eliminated altogether.

RURAL DISTRICTS AND CITY.

- 13. The attached chart taken from the 1924 administration report of the Medical Inspector of Health, and brought up to date with the aid of figures kindly supplied by that officer, contrasts the seasonal prevalence of the disease in Rural Districts and Port-of-Spain, respectively, for the six years, 1918-1923, with its monthly incidence during 1924 and the first three quarters of 1925.
- 14. This chart records an almost simultaneous rise in town and country in the beginning of 1924, followed in both cases by a downward curve which in June reached a point below the lowest average for that month in the preceding six years.
- 15. But whereas in the case of the Rural Districts this drop in the curve proved to be temporary, having been succeeded in the latter half of 1924 by well-marked rises above the corresponding averages for the years 1918-1923, and, up to date, in 1925, by further rises transcending the high records of 1924, it is remarkable that in Port-of-Spain, where the water supply has been subjected to chlorination, the drop which also took place in June, 1924 has remained permanent. This, I venture to think, is a fair indication that the purification of the water before delivery is exercising a distinct check on the course of enteric fever in the City.

FUTURE OF CHLORINATION.

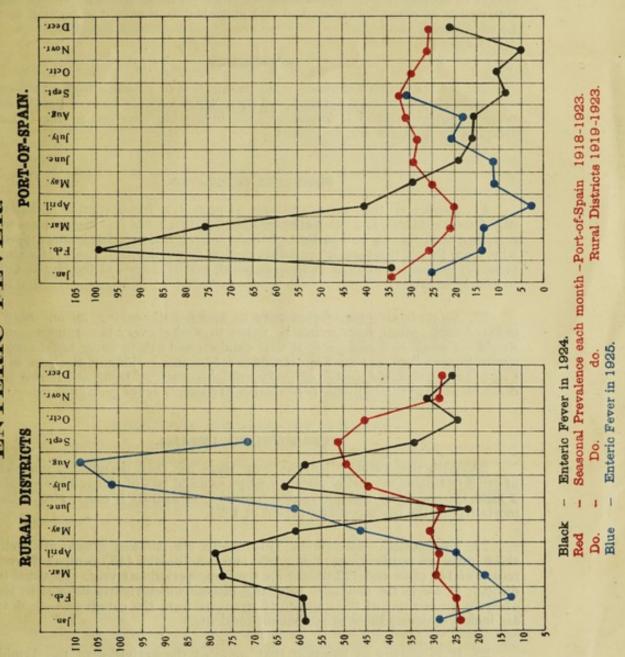
- 16. These facts are in evident conflict with a suggestion which has been made that the chlorination of the water supply is, or is likely to prove, a waste of public money.
- 17. On the contrary, the indications are that it is a sound precautionary measure of great value to the health of the City, and the important share which it is bound to take in controlling the spread of enteric fever and other water-borne diseases may with confidence be expected to become more and more apparent from year to year.

SEWERAGE AND CESSPITS.

18. The question of extending the sewerage system to the unsewered portions of the City is inextricably linked up with the augmentation of the water supply now engaging the attention of the Council. There is no doubt that when the whole City is sewered another important advance will have been made in the control of the existing causes of enteric fever. In the meantime the menace of the cesspits is receiving constant attention, and, exclusive of 4,519 pits sprayed with crude oil at the request of the owners, no fewer than 7,264, or over 800 pits per month, have been similarly treated, free of charge, as a special measure of precaution against the spread of enteric fever.

ENTERIC FEVER.

CHART



FOOD CONTROL.

19. A good deal of supervision is exercised by the sanitary staff on the sale of milk and other articles of food, but there is room for improvement in that direction, especially having regard to the legion of refreshment parlours that have sprung up all over the City since the Shops Hours Order came into force. It is hoped to tighten the control over possible infection from these sources and other classes of shops when the application for power to make bye-laws for the better supervision of places where cooked and uncooked food is sold is granted to the Local Authority.

DISINFECTION.

20. Strict attention is given to the disinfection of premises from which cases of enteric fever have been notified, and those which occur in barrack yards, where proper sanitary control is impossible, are invariably removed to the Colonial Hospital for isolation and treatment.

PROTECTIVE INOCULATION.

- 21. Besides all this, the advantages of protective inoculation is persistently urged upon contacts, as a rule with the desired results; but it is nevertheless to be regretted that there is still in Port-of-Spain a large body of non-immune persons who, from thoughtlessness or prejudice, neglect to avail themselves of this simple means of protection which is at their disposal, free of charge, at the Health Office in Charlotte Street.
- 22. As protective inoculation may be had for the asking, no one need be infected with enteric fever unless he wants to, and if every non-immune person would get inoculated and see to it that children and others under his charge are similarly protected, enteric fever would soon become a thing of the past in the City; and it is in the power of every one concerned to bring about this most desirable state of things by the performance of a simple act of good citizenship.

OTHER NOTIFIABLE DISEASES.

- 23. With the decline of enteric fever there has been no unusual prevalence of other notifiable infectious disease except chicken pox of which 27 cases, all of a mild type with no mortality, were notified, as against 8 cases, also without mortality, in the corresponding period of 1924.
- 24. **Tuberculosis.**—Pulmonary Tuberculosis also showed a welcome decline, the number of notifications being 135 and the deaths 115, compared with a record of 145 cases and 122 deaths for the same period last year. As usual it is difficult to assess the mortality from this disease which rightly belongs to Port-of-Spain on account of the number of strangers from the country whose deaths are included among those of permanent residents.
- 25. It is worthy of mention that some of the activities of the Trinidad Association for the Prevention and Treatment of Tuberculosis are usefully co-ordinated with those of the Local Authority in preventing the spread of tuberculous infection. By a mutual understanding the Tuberculosis Nurses report to the Public Health Department for necessary action insanitary conditions observed by them in the course of their domiciliary visits to Dispensary patients, and, reciprocally, the Sanitary Inspectors inform the Nurses of the names and addresses of persons of the poorer class in their respective districts who appear to them to be likely cases of tuberculosis. This arrangement works well and has often hastened the discovery of tuberculous cases and led to the early abatement of nuisances on premises occupied by them.

- 26. Diphtheria and Pneumonia.—There were 17 cases of diphtheria with 2 deaths, being a decline of 3 on the previous record in the number of cases but with no difference in the deaths.
- 27. The notifications and deaths from pneumonia numbered 66 and 47 respectively, a double increase on the previous year when 58 cases and 36 deaths were recorded. Wet weather and dampness probably accounted for a good many cases, especially among children living in insanitary houses.
- 28. Ophthalmia Neonatorum.—Ophthalmia Neonatorum was added during the year to the list of notifiable infectious diseases by the Governor's proclamation. It is a preventable disease resulting from maternal infection, and sometimes causes destruction of the sight of new-born infants. Up to date only one case has been notified.

TOTAL NOTIFICATIONS AND DEATHS.

29. Including non-pulmonary forms of tuberculosis, of which there were 9 notifications and 13 deaths, compared with 4 notifications and 18 deaths in the preceding record, the total number of cases of infectious diseases notified was 405, and the deaths, 190, as against 569 notifications and 222 deaths in the same period last year, being a decline this year of 29 per cent. in the notifications and 14 per cent. in the deaths.

HOSPITAL ISOLATION.

30. Of the 405 cases of infectious disease notified to the Medical Officer of Health 264, or 65 per cent., were isolated and treated at the Colonial Hospital. Such a high percentage of hospital isolation is a valuable asset in the control of infectious disease.

NON-NOTIFIABLE INFECTIOUS DISEASES.

31. There were 102 deaths, compared with 74 for the same period last year, from non-notifiable infectious diseases. Of these, whooping cough accounted for 5; influenza 2; dysentery, of which there were numerous cases of the amoebic type in the early part of the year, 23; ankylostomiasis, 7; syphilis, which is apparently becoming a formidable problem, 28; and malaria, 37.

NOTIFICATION OF MALARIA AND DYSENTERY.

- 32. As there are no known active breeding places of anopheles mosquitoes within the district it is improbable that many of these deaths are the result of local infection. Without notification it is impossible to obtain satisfactory records of the prevalence of this disease in the City, or to undertake any special survey for possible breeding places in the neighbourhood of a case until death has taken place.
- 33. The notification of malaria may perhaps be beset with difficulties in some of the Rural Districts, but there seems to be no good reason why such a useful measure should not be introduced in Port-of-Spain where the administrative conditions are not the same as in the country.
- 34. Better control of the bowel complaints included under the head of dysentery or, more properly, "the dysenteries," would also result, if this group were made notifiable—a suggestion now respectfully submitted for the consideration of the Local Authority.

POPULATION.

35. The population of Port-of-Spain estimated to the 30th June, 1924, was 63,954.

As the method adopted by the Registrar General for arriving at the mean population on which the birth and death rates are based requires data which do not become available until the year is over, it is not possible to calculate reliable rates for inclusion in this progress report, though, of course, they will form part of the next annual report.

UNOFFICIAL CENSUS.

36. In the monthly reports on the health of the City tables are given showing the distribution in the several districts of deaths from all causes, infectious diseases notified, and deaths resulting from them.

Without a knowledge of the population of these districts it is difficult to interpret the significance of the information supplied; to meet this want a house to house count of the number of persons living in each district was made by the sanitary staff. The figures which resulted are given below; they are unofficial but care was taken to make them as accurate as possible, and they are sufficiently close to the latest available estimates of the Registrar-General to be acceptable for the purpose they are intended to serve.

Table II.

Distribution of Population in City and Suburbs.

District.			Population.
City (sewered)		 	24,698
St. Clair (sewered)		 	1,140
East Dry River (unsewered)		 	14,676
Belmont (unsewered)	THE .	 	11,601
Woodbrook (unsewered)		 	8,544
Total		 	60,659

BIRTHS.

37. The number of live-births was 1,332, a decline of 112 on the corresponding period last year.

DEATHS.

38. 1,131 deaths were registered, an increase of 54 on the record for the same period in the preceding year, principally made up by the difference between (a) increases in the mortality from diseases of early infancy and of the heart and blood vessels, venereal diseases, bronchitis, and puerperal diseases, and (b) decreases in deaths from notifiable infectious diseases and old age.

STILL-BIRTHS.

39. The still-births numbered 114 which was 21 fewer than last year when 135 were registered. The proportion of still-births to live-births was 8.56 per cent. The influence of syphilis on the production of still-born children is very considerable, and should be actively combated not only medically but, also, by properly directed social efforts.

INFANT MORTALITY.

- 40. 214 children died under 1 year, yielding the high infant mortality rate of 161 per 1,000 live-births, compared with 139 for the corresponding months in 1924—an increase of 22 per 1,000. The causes of death may be broadly classified under those which are due to (1) prenatal influences and (2) environmental influences.
- 41. Included in (1) are congenital syphilis and other diseases commonly connected with syphilis, viz.: prematurity, congenital atrophy and debility, malnutrition, marasmus, congenital heart disease and intestinal obstruction, meningitis, convulsions and congenital disease of the liver and kidneys.
- 42. Under (2) are comprised (a) stomach and bowel troubles, viz.: gastroenteritis, diarrhoea and enteritis, dysentery, colitis, and indigestion, (b) lung diseases, including bronchitis, pneumonia and broncho-pneumonia, (c) accidents and diseases implying lack of care, comprising scalding and other injuries, asphyxia, umbilical sepsis, tetanus and abscess (d) malaria, whooping cough and dentition.

43. The following table shows the proportion of the total infant mortality allocated to each group of causes.

Table III.

(1) Prenatal influences—Congenital syphilis, &c. (2) Environmental influences—Stomach and bowel troub			per cent.
Lung diseases		7.0	do.
Accidents and lack of car Malaria, &c.		7·5 5·5	do.
Total	+	100.0	do.

- 44. Similar results were obtained from an analysis of the City's infant mortality statistics for the preceding period of five years—1920-1924, the figures for the several years also showing that while the proportion of deaths from stomach and bowel troubles, especially in the first six months of life, is steadily decreasing, largely, no doubt, in consequence of the praiseworthy efforts of the Child Welfare League, the reverse is taking place in regard to the mortality from congenital syphilis and other prenatal causes.
- 45. Contrary, therefore, to the popular notion that diarrhoeal diseases, mostly caused by unsuitable food, are chiefly responsible for the high infant mortality rate which is such a deplorable feature of the health conditions of the City, it is found on examining the death returns that more than half the number of infants who perish under one year are foredoomed weaklings, born with disease or diminished resistance to disease, the offspring of parents—especially mothers—suffering from ill-health due, it may be, to privation and want in some cases, but, principally, to syphilis and other preventable diseases.
- 46. This circumstance calls for greater effort in developing and extending the ante-natal side of the Maternity and Child Welfare work which has already proved so successful in reducing the infant mortality from maternal ignorance and improper feeding, and the best manner in which such efforts may be assisted is a question deserving the sympathetic consideration of the Local Authority.
- 47. Diarrhoea and Enteritis.—Deaths from diarrhoea and enteritis numbered 50, compared with 75 for the corresponding period last year, a decline of 33 per cent. which is consistent with the improvement in maternal care and the feeding of infants already referred to.

SANITARY CONDITIONS.

- 48. Rainfall.—This year has so far been wetter than the last. From records kindly supplied by the Agricultural Department, based on the average of measurements taken at St. Clair Experiment Station, the Colonial Hospital and Constabulary Headquarters, 31.5 inches of rain fell in the City, an increase of 4.5 inches on the corresponding nine months in 1924.
- 49. The wettest months were July, August and September, with 5.7, 9.4 and 6.6 inches of rainfall, respectively, and the driest February, April and May, with 0.5, 0.06 and 0.59 inches, respectively.
- 50. During the first three quarters of last year the wettest months were also July, August and September, with a little over one and a half inches of rainfall less than the total for the corresponding months this year; the driest months were February, with 0.06 inches of rainfall, and March and April, with 0.67 and 1.15 inches, respectively.
- The monthly average rainfall for the period under review was 3.5 inches, compared with 3 inches in 1924.
- 52. Water Examination.—By a friendly arrangement with the Medical Department bacteriological reports on the mixed water supply from Maraval, Cocorite and, occasionally, Diego Martin were furnished to the Medical Officer of Health by the Government Bacteriologist on every week day from March 13th onwards. In 201 days, up to the 30th September, 188 reports were supplied showing the absence of B. coli—one of the principal indicators of excremental pollution—on 176 occasions, or in 93.5 per cent. of the tests, and the presence of them on 12 occasions, or in 6.5 per cent. of the samples examined.

- of water taken direct from the various sources of supply and, besides their use in the control of chlorination, are serviceable records for the purpose of comparing the bacteriological content of the water at different seasons, and, as they accumulate, from year to year.
- 54. **Housing.**—Improvement in housing conditions is progressing slowly—it must be confessed, much too slowly. Owing to depression in trade and the general want of ready money, most of the owners of premises on whom notices are served to abate insanitary conditions of a structural character express themselves as being willing but unable to comply with the requirements of the notices, and apply for long extensions of the time specified for the completion of the necessary works.
- 55. Many of them ask that the works be performed by the Local Authority and the cost made payable on easy terms, as was done after the introduction of the sewerage system. This is well worthy of the serious consideration of the Local Authority, having regard to the improvement in the sanitary condition of the City which would rapidly follow if some such plan were adopted.
- 56. **Drainage**.—The breeding of mosquitoes in the Dry River, Woodbrook and Maraval River has been controlled by gangs regularly at work in these places, filling in holes, cleaning drains and straightening their course, and oiling pools: 4,415 gallons of crude oil were effectually used in the latter process.

SANITARY WORK.

57. A short summary of some of the principal items of work done, or caused to be done, by the sanitary staff to 30th September is compared below with last year's activities—

Table IV.

			3	1924.	1925.
Sanitary work done or caused to be do	ne.			JanSept.	JanSept.
a di Tananta da di La da	1111	YES .		06-	0
Sanitary Inspectors' visits to premises	1.4	**	**	79,867	81,622
Notices and verbal directions complied with			**	18,511	18,522
Cesspits sprayed with crude oil for enteric fever (free)		**		8,511	7,264
Offensive cesspits sprayed with crude oil (paid for)				3,498	4,519
Premises disinfected for Infectious Diseases		**	**	525	340
Premises disinfected for Vermin	**			448	455
Railway coaches disinfected for Leprosy		**		17	26
Visits to premises of Anti-mosquito Inspectors and men				16,984	17,326
Barracks ventilated and roofs closeboarded	2.2	**		155	89
esspits emptied	5.5	**		980	957
Sewer basins cleaned		**		999	962
New Privies and Cesspits constructed				311	222
Privies repaired or made flyproof	**	**		775	723
Yards cleaned	**	**		2,832	2,786
Drains cleaned				1,835	1,492
Sinks and Gullies cleaned		00		741	767
Vashing troughs and washing platforms cleaned		**		656	567
Orains constructed or repaired		- 11		441	379
sanitary Dustbins provided, repaired or covered			**	1,218	1,476
Premises cleared of bush	**	**	**	330	314
Accumulations of manure removed		2.2	**	535	447
Privies limewashed	37 6			914	973
remises limewashed (Barracks, Stables, Cowsheds, Facto	ries, S	nops, &c.)		423	783
Rats bought				472	494
Rats caught	2.0	11	2.0	4,219	3,199
Fotal rats destroyed				4,691	3,693

58. Anti-plague work.—Of a total of 3,693 rats, including bounty rats and rats caught by the rat catchers, 3,635 were examined by the Government Bacteriologist and found to be free from evidences of plague infection.

- 59. Unsound Food.—Under Part IXA of the Public Health (Amendment) Ordinance, 1919, 1,237 tins of milk, meat, fish, fruit and vegetables; 8 boxes of cheese; 21 barrels of onions and potatoes; 40 boxes of herrings and 1,215 loose plantains were seized and ordered to be destroyed. Prosecutions were instituted in 64 cases for the sale of unsound food or the exposure of food for sale without protection from contamination, and fines to the amount of £61 5s. 0d. recovered.
- 60. If the Local Authority is successful in making satisfactory arrangements with the Government for utilizing the services of the Analyst and the Bacteriologist for the examination of certain classes of adulterated and unsound foods, as has been proposed, the Local Authority will be better able to control the spread of enteric fever and other diseases from those sources than is now possible.
- 61. Sale of Iced Fish.—Following a report by the writer on the sale of iced fish at the Fish Market, several interesting letters were received from Baron Bliss, a visitor to the Colony on the yacht Sea King, recommending certain improvements in the capture and marketing of fish for the local trade.
- 62. This correspondence was considered by the Local Authority and transmitted to the Government, by whom the fisheries are controlled, with a suggestion that the whole question of the fishing industry, including the protection of spawning grounds and the pollution of the Gulf of Paria with fuel waste from oil-burning vessels, might with advantage be referred to a Committee for investigation and report.
- 63. It transpired, however, that the Government had already, at some previous time, appointed a Committee to consider certain aspects of the fishing trade. Of the two main points raised in Baron Bliss's letters (1) the protection of spawning grounds was referred to this Committee by His Excellency the Governor, and (2) the pollution of the Gulf with waste fuel oil was reserved to be separately dealt with by legislation which, it is understood, is now in progress.
- 64. In the meantime the ventilation of the question of the unsatisfactory supply of fresh fish to the City, and the public interest taken in the matter, have already resulted in a considerable improvement in the quality of the fish exposed for sale at the markets.
- 65. Prosecutions.—259 informations were laid before the City Magistrate for breaches of the Public Health Ordinance and the bye-laws made thereunder.

Convictions were obtained in 254 cases, and fines amounting to £119 11s. 0d. imposed.

66. Conclusion:—I am glad to acknowledge and bring to the notice of the Local Authority the zeal and efficiency with which the work of every member of the office and sanitary staff has been discharged.

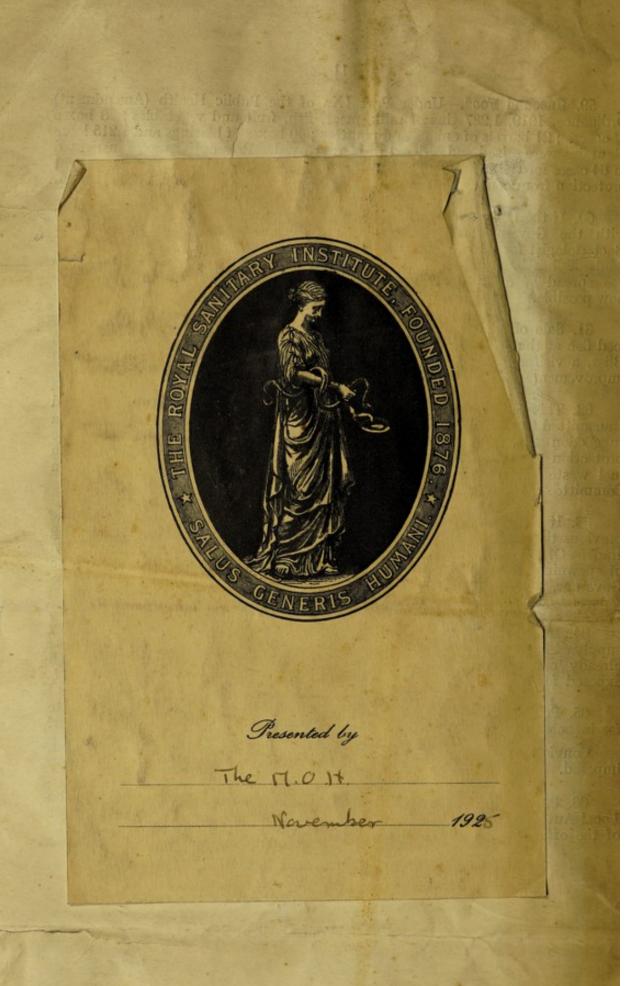
I have the honour to be,

Sir,

Your obedient Servant,

GEORGE H. MASSON, Medical Officer of Health.

Port-of-Spain, Trinidad, Public Health Department, Town Hall, 21st October, 1925.



GEORGE H. ILASSON.

of-Spain, Trinidad, Public Health Department, *
Town Health 21st Ontober.