

Report for the year ended 31st December 1920 of the Medical Officer of Health for the Port of London.

Contributors

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Willoughby, Willoughby Mason.

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PORT OF LONDON SANITARY COMMITTEE.

ANNUAL REPORT

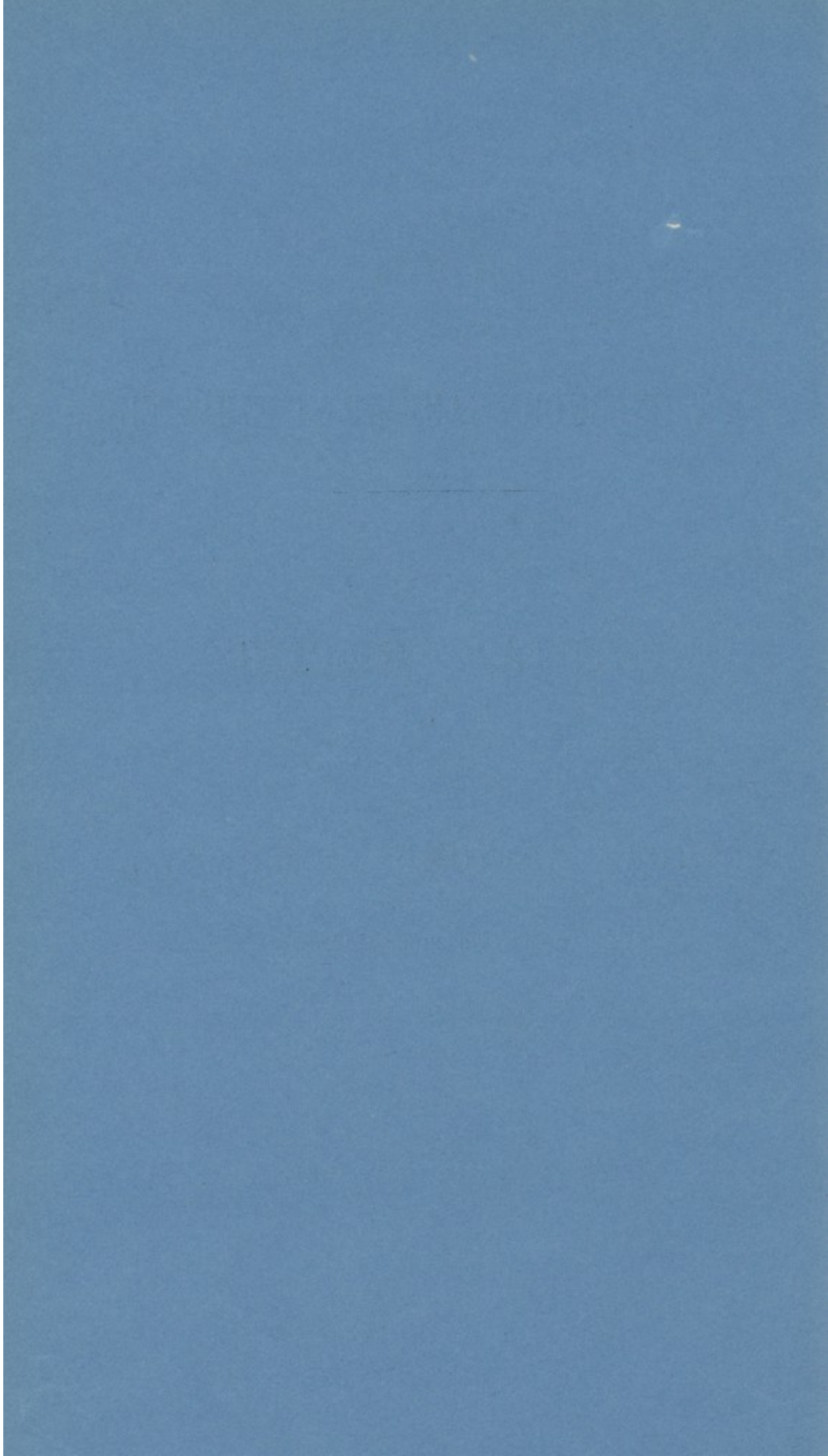
OF THE

MEDICAL OFFICER OF HEALTH,

To 31st DECEMBER, 1920.



Presented 21st July, 1921.



REPORT,

FOR THE YEAR ENDED 31ST DECEMBER, 1920,

OF THE

MEDICAL OFFICER OF HEALTH

FOR THE

PORT OF LONDON.

BY

WILLOUGHBY MASON WILLOUGHBY, B.A., M.D.,
B.C., Cantab., D.P.H. Camb.,

Medical Officer of Health, Port of London.



LONDON:

PRINTED BY CHARLES SKIPPER & EAST, 49, GREAT TOWER STREET, E.C. 3.



ROLL, *Mayor.*

A Common Council holden in the Chamber of
the Guildhall of the City of *London*, on
Thursday, the *21st* day of *July*, 1921.

THE Port of London Sanitary Committee did this day deliver into this Court a Report in writing under their hands, of their proceedings, and submitting the Annual Report of the Medical Officer of Health of the Port to the 31st December, 1920 ; which was read.

ORDERED, That the Report be printed, and a copy sent to every Member of this Court.

B E L L .

*To the Right Honourable the Lord Mayor, Aldermen and Commons
of the City of London, in Common Council assembled.*

WE, whose names are hereunto subscribed, of your Port of London Sanitary Committee, to whom it has been referred to carry into execution the powers assigned to the Corporation, as the Port of London Sanitary Authority, beg to submit for the information of your Honourable Court the Annual Report of Dr. Willoughby Mason Willoughby, the Medical Officer of Health of the Port of London, for the year ended the 31st December, 1920, which Report contains a full and detailed account of the work done in the Port during that period by the Medical Officers and Inspectors.

In connection with the effective work continuously carried out by your Medical Officer, we desire to bring to the notice of your Honourable Court his several analyses of conditions under which Plague occurs on ships, and of the influence of the rat on the disease. Dr. Willoughby's scientific examinations and practical conclusions on a series of ships bringing Plague into the Port have advanced the knowledge of Plague on shipboard and the methods by which danger arising therefrom may be met in a way which we submit reflects credit on the Corporation and has enhanced the good repute of the Port of London Sanitary Authority.

The Port Sanitary Authorities (Infectious Diseases) Regulations, 1920, embody powers and duties which for some time have been sought by your Committee and afford a basis on which more effective control over infectious disease in general and the conditions contributing thereto may be exercised.

We desire to express our appreciation of the valuable contribution on the subject of Ship Rats by the Medical Officer of Health at the Congress of the Royal Sanitary Institute held at Birmingham last year, a summary of which will be found in the Report.

No rat infected with Plague has been found on shore within the jurisdiction of the Authority throughout the year.

The customary work of your officers has been carried out in a satisfactory manner, as detailed in the Report.

An Account of Receipts and Expenditure in connection with the Port of London Sanitary Authority for the year ended the 31st March, 1921, is appended, in accordance with the Order of your Honourable Court, for the information of the Court.

All which we submit to the judgment of this Honourable Court. Dated this nineteenth day of July, 1921.

ALBION T. SNELL.
WM. H. THOMAS.
ROBT. PEACHEY.
THOS. PIMM.
A. C. GOODINGE.

HUGH SHIRREFF.
F. BARTHORPE.
W. W. GREEN.
VICKERS DUNFEE.
CECIL F. J. JENNINGS.
THOS. GOLDNEY.

OFFICES

OF THE

Port of London Sanitary Authority

AND

Medical Officer of Health

AT

51, KING WILLIAM STREET,

GREENWICH S.E. 10.



TELEGRAPHIC ADDRESS - "MEDOFF, GREEN, LONDON."
TELEPHONE No. - - - GREENWICH 360.

BOARDING STATIONS.

RIVER THAMES - - - HULK "HYGEIA," GRAVESEND.
RIVER MEDWAY - - - GARRISON POINT, SHEERNESS.
TELEPHONE No. (HULK "HYGEIA") - - - GRAVESEND 325.

HOSPITAL FOR INFECTIOUS DISEASES

AT

DENTON, NEAR GRAVESEND.

TELEPHONE No. (HOSPITAL) - - - GRAVESEND 257.
Ditto (MEDICAL OFFICER OF HEALTH) ,, 86.
Ditto (DEPUTY DITTO) - - - ,, 373.

LIMITS OF THE PORT OF LONDON.

The limits of the Port of London as at present defined commence at High Water Mark in the River Thames at Teddington Lock, in the County of Surrey, and extend down both sides of the River Thames to an imaginary straight line drawn from the Pilot Mark at the entrance of Havengore Creek, in the County of Essex, to the lands end at Warden Point, in the Isle of Sheppey, in the County of Kent, such point being the North-Western limit of the Port of Faversham, and shall extend up and include both sides of the River Medway to an imaginary straight line drawn from the South-East point of land westward of Coalmouth Creek, thence across the said River Medway to the Westernmost point of the piece of land which forms the Eastern side of the Stangate Creek, or, in other words, the North-West point of Fleet Marsh, and from thence in a Southerly direction to Iwade Church, in the said County of Kent, and thence in a North-Easterly direction to Elmley Chapel, in the said Isle of Sheppey, a supposed direct line from Elmley Chapel to Iwade Church, being the Western limit of the Port of Faversham, and the said Port of London shall include the Islands of Havengore Creek aforesaid, called Pottton and Rushey Islands, and so much of the said Creek and watercourse as extends from it to the town of Rochford, and shall also include all other islands, rivers, streams, creeks, waters watercourses, channels, harbours, docks and places within the before-mentioned limits contained.

4

INDEX.

	PAGE		PAGE
Actinomycosis - - - -	45	Medical Inspection - - - -	7
Aliens - - - - -	7	Mumps - - - - -	28
Beef - - - - -	45	Mutton and Lamb - - - -	45
Canal Boats Acts - - - -	56	Notification of Infectious Disease - - - -	10
Cerebro-spinal Meningitis - - - -	21	Nuisances - - - - -	52-3
Chicken-pox - - - - -	21	Nuts - - - - -	47
Cholera - - - - -	13	Offal - - - - -	46
Continued Fever - - - - -	21	Offensive Cargoes - - - -	54
Diphtheria - - - - -	18	Onchocerca - - - - -	45
Dysentery - - - - -	27	Plague - - - - -	10
Enteric Fever - - - - -	17	Pneumonia - - - - -	27
Erysipelas - - - - -	28	Pork - - - - -	45
Establishment, &c. - - - -	5	Port, Limits of, &c. - - - -	3
Fish - - - - -	46	Prepared Foods and Provisions, &c. - - - -	48
Food Inspection - - - - -	44	Preserves, Jam, &c. - - - -	47
Foreign Meat Regulations - - - -	44	Rabbits - - - - -	46
Fruit - - - - -	46-7	Rat and Mice Destruction Act - - - -	38
Gastro-Enteritis - - - - -	28	Rats - - - - -	31-41
German Measles - - - - -	20	Sanitary Conveniences, &c. - - - -	54
Grain - - - - -	48	Sanitary Inspection - - - - -	51-5
Hospital - - - - -	41-55	Sausages - - - - -	46
Infectious Disease - - - - -	8-41	Scarlet Fever - - - - -	19
" " Regulations - - - -	8	Small-pox - - - - -	14-17
Influenza - - - - -	24-6	Staff - - - - -	5-56
Introductory - - - - -	6	Sundry Foodstuffs - - - - -	44-50
Launches, Hulks, &c. - - - -	55	Tuberculosis (Pulmonary, &c.) - - - -	23
Malaria - - - - -	22	Typhus Fever - - - - -	14
Meal and Flour - - - - -	48	Unsound Food - - - - -	42-50
Measles - - - - -	19	Veal - - - - -	46
Meats, Canned - - - - -	46	Venereal Disease - - - - -	29
" Smoked, Salted and Sundry - - - -	46	Yellow Fever - - - - -	13-14

INDEX TO TABLES.

TABLE.	PAGE	TABLE.	PAGE
I. Medical Inspection - - - -	7	XXV. Venereal Disease - - - -	29
II. Infectious Disease--Summary - - - -	9	XXVI. Miscellaneous Diseases - - - -	30
III. Compulsory Notification of Infectious Disease, with number of Deaths - - - -	10	XXVII. Vessels and Premises Disinfected - - - -	31
IV. Plague - - - - -	10	XXVIII. Number of Disinfections of Effects - - - -	31
V. Cholera - - - - -	13	XXIX. Rats Destroyed - - - -	32
VI. Yellow Fever - - - - -	13	XXX. Rats - Fumigation of Vessels - - - -	33
VII. Typhus Fever - - - - -	14	XXXI. Rats - - - - -	33
VIII. Small-pox - - - - -	14	(Foreign) - - - - -	33
IX. Enteric Fever - - - - -	17	XXXII. Hospital Cases, &c. - - - -	41
X. Diphtheria - - - - -	18	XXXIII. Unsound Food - Seized, &c. - - - -	42
XI. Scarlet Fever - - - - -	19	XXXIV. Unsound Meat - Destroyed, Weights, &c. - - - -	43
XII. Measles - - - - -	19	XXXV. Sanitary Inspection - Summary - - - -	51
XIII. German Measles - - - - -	20	XXXVI. Sanitary Inspection - Nuisances on Vessels - - - -	52
XIV. Continued Fever - - - - -	21	XXXVII. Sanitary Inspection - Nuisances in Shore Premises - - - -	53
XV. Chicken-pox - - - - -	21	XXXVIII. Sanitary Inspection - New Works - - - - -	54
XVI. Cerebro-spinal Meningitis - - - -	21	XXXIX. Sanitary Inspection - Offensive Cargoes - - - -	54
XVII. Malaria - - - - -	22	XL. Canal Boats - - - - -	60
XVIII. Tuberculosis - Pulmonary - - - -	23		
XIX. Influenza - - - - -	24		
XX. Pneumonia - - - - -	26		
XXI. Dysentery - - - - -	27		
XXII. Erysipelas - - - - -	28		
XXIII. Mumps - - - - -	28		
XXIV. Gastro-Enteritis - - - - -	28		

APPENDIX.

Return of Rats examined for evidence of Plague.
Revenue Account.

STAFF.

LIST OF OFFICERS FORMING THE STAFF OF THE PORT OF LONDON
SANITARY AUTHORITY, 31ST DECEMBER, 1920.

Office.	Name of Officer.	Date of Appointment to Present Position.
MEDICAL OFFICER OF HEALTH -	W. M. Willoughby, B.A., M.D., B.C., D.P.H.Camb.	February, 1916.
DEPUTY - - - - -	Lieut.-Col. J. S. Warrack, R.A.M.C., T.D., M.A., M.D., C.M. Aberdeen, D.P.H.Camb., Barrister-at-Law.	February, 1916.
ASSISTANT MEDICAL OFFICERS—		
GRAVESEND - - - - -	W.D. Betenson, M.R.C.S., L.R.C.P., Lond., D.P.H. Lond. (Acting Deputy M.O.H. and M.O., Denton Hospital).	July, 1907.
SHEERNESS - - - - -	A. Kidd, M.R.C.S., L.R.C.P., Lond., D.P.H.	1909.
	E. V. Legge, M.A., M.D., B.C., B.A.O., L.M. Dublin.	1909.
GREENWICH OFFICES—		
Clerk - - - - -	W. J. Albrow - - - - -	March, 1890.
1st Assistant - - - - -	E. A. Sorrell - - - - -	October, 1894.
2nd ditto - - - - -	W. C. Barham - - - - -	June, 1903.
Junior ditto - - - - -	J. A. Gillis - - - - -	April, 1914.
Ditto - - - - -	A. W. Moore - - - - -	January, 1920.
Caretaker - - - - -	F. Hudgell - - - - -	November, 1906.
FOOD INSPECTORS - - - - -	*W. Anderson, Cert.R.San.Inst. - - - - -	July, 1898.
	*T. W. Bailey, Cert.R.San.Inst. - - - - -	July, 1901.
	*A. Garland, Cert.R.San.Inst. - - - - -	December, 1917.
SANITARY INSPECTORS - - - - -	*W. G. Wetjen, Cert.R.San.Inst. - - - - -	August, 1898.
	*W. W. Burr, Cert.R.San.Inst. - - - - -	August, 1898.
	*H. R. Hopkins, Cert.R.San.Inst. - - - - -	February, 1899.
	*P. R. Lambe, Cert.R.San.Inst. - - - - -	January, 1900.
	*J. H. Rolfe, Cert.R.San.Inst. - - - - -	September, 1901.
	*W. Elward, Cert.R.San.Inst. - - - - -	March, 1909.
	*F. J. Massie, Cert.R.San.Inst. - - - - -	March, 1909.
	*W. J. Berry, Cert.R.San.Inst. - - - - -	February, 1914.
DENTON HOSPITAL—		
Medical Officer - - - - -	Lieut.-Col. J. S. Warrack, R.A.M.C., T.D., M.A., M.D., C.M. Aberdeen, D.P.H. Camb., Barrister-at-Law.	1916.
Matron - - - - -	J. Jackson - - - - -	February, 1918.
Assistant Nurse (Temporary) - - - - -	M. Woodward - - - - -	November, 1919.
Ditto (Do.) - - - - -	M. Evans - - - - -	March, 1920.
Ditto (Do.) - - - - -	M. Woodward - - - - -	May, 1920.
Ditto (Do.) - - - - -	D. Harvey - - - - -	November, 1920.
Cook, General (Do.) - - - - -	D. Clare - - - - -	May, 1920.
Wardmaid (Do.) - - - - -	E. Clare - - - - -	March, 1920.
Porter, &c. (Do.) - - - - -	J. H. Robinson - - - - -	August, 1917.
Gardener (Do.) - - - - -	S. Waterman - - - - -	April, 1919.
STEAM LAUNCHES—		
"LADY TRUSCOTT"—		
Master - - - - -	W. Jarvis - - - - -	April, 1911.
Engineer - - - - -	J. A. Hardman - - - - -	December, 1911.
Mate - - - - -	A. F. Rough - - - - -	November, 1914.
Stoker - - - - -	A. E. Howard - - - - -	February, 1912.
"DAVID BURNETT"—		
Master - - - - -	C. H. Price - - - - -	October, 1913.
Engineer - - - - -	J. Steen (see "George Briggs") - - - - -	September, 1914.
Deckhand - - - - -	Vacant - - - - -	
Stoker - - - - -	Do. - - - - -	
"GEORGE BRIGGS"—Motor Launch—		
Master - - - - -	C. Strange - - - - -	October, 1913.
Engineer - - - - -	J. Steen - - - - -	October, 1913.
GREENWICH MOORINGS—		
FUMIGATING BARGE "THOMAS"—		
Stoker, &c. - - - - -	Vacant - - - - -	
BARGE "ELLA VICARS"—		
Watchmen - - - - -	{ H. A. Clarkson - - - - -	May, 1912.
	{ E. Ditch - - - - -	December, 1914.
GRAVESEND—		
HULK "HYGEIA"—		
Shipkeeper - - - - -	A. Salter - - - - -	July, 1898.
Ditto - - - - -	J. H. Salter - - - - -	January, 1920.

* These Inspectors possess the Special Certificate of the Royal Sanitary Institute for Inspectors of Food.

PORT OF LONDON SANITARY OFFICES,
51, KING WILLIAM STREET,
GREENWICH, S.E. 10.

TO THE WORSHIPFUL THE PORT OF LONDON
SANITARY COMMITTEE.

GENTLEMEN,

I have the honour to present herewith my Annual Report for the year ending 31st December, 1920.

MEDICAL INSPECTION.—The total number of vessels medically inspected during the year was 763, and the total number of cases of illness reported to your Medical Officers was 1,493, of which number 80 cases were removed to Denton Hospital.

ALIENS.—An outline of the scheme of inspection suggested by your Medical Officer of Health will be found on page 7.

INFECTIOUS DISEASE.—There are no features of outstanding importance to report relative to the incidence of infectious disease in the Port. A comparison of the figures in the Tables shows a slight rise above the average in the number of cases of Cholera reported on vessels during the voyage, also of Small-pox and Diphtheria. Two cases of Plague were removed to Hospital, both cases proving fatal. There were also two deaths from Small-pox.

Notes of cases presenting points of general interest are, as usual, appended.

A summary of the Port Sanitary Authorities (Infectious Diseases) Regulations, 1920, is given on page 8. These Regulations are of great importance as freeing Port Authorities from too minute a written regulation of their work in Infectious Disease, and as allowing them scope for effective dealing with insanitary conditions leading to infections whatever the type of disease and method of communication and of prevention.

Your Medical Officer of Health adopted the course of circulating among the shipping of the Port a few notes on practical measures to be taken on board ship with a view to preventing or abating an outbreak of Influenza. (See page 26.)

A list of the cases and character of Venereal Diseases reported is also given. The contribution of the Corporation to the Treatment Centre at the Royal Albert Dock was increased during the year from 300*l.* to 400*l.* per annum.

The total number of vessels disinfected on account of Infectious Disease was 87.

RATS.—The total number reported destroyed throughout the Port during the year was 79,905. The result of the examination of dead rats for evidence of Plague was 3,665 examined, the number found infected being nil. Twenty-nine vessels were fumigated for destruction of rats in the Port, and the total number of dead rats recovered after such fumigation was 4,955. A list is also given showing the vessels entering the Port which were reported to have been fumigated abroad for the same purpose.

An analysis of the Rats and Mice Destruction Act, 1919, with details of precautionary measures, together with a summary of a Paper contributed by your Medical Officer at the Congress of the Royal Sanitary Institute at Birmingham, is set out on page 38.

FOOD INSPECTION.—The total approximate weight of goods condemned as unfit for human food was 4,102 tons (Table XXXIII.). The Report describes the method of disposal of this quantity, of which 912 tons were positively destroyed by fire or burial. Descriptive notes of other food material dealt with are also given.

SANITARY INSPECTION.—The total number of visits of inspection was 27,519. The yearly average for the ten years ending 31st December last being 33,779.

A perusal of the figures shown in Table XXXV. shows that visits to vessels from foreign ports practically equal the average, other inspections show a lower ratio. Of the total visits, 6,825 were made by launch.

Particulars are given in Tables XXXVI. and XXXVII. of the character of the insanitary conditions found and of the number of vessels, &c., affected.

CANAL BOATS.—The Annual Report on the Working of the Canal Boats Acts and Regulations is appended to this Report.

TABLE I.—MEDICAL INSPECTION—GRAVESEND. From 1st January to 31st December, 1920.

	Jan.	Feb.	March	April	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Total.
Number medically inspected	72	67	72	73	73	78	50	65	54	59	46	54	763
Number of passengers ...	196	334	372	349	270	683	665	402	431	480	154	536	4,872
Number of crew ...	3,766	2,551	2,033	2,417	1,996	2,023	1,924	3,199	2,906	2,296	2,358	2,343	29,812
Number of foreign arrivals	606	627	750	667	814	835	743	862	802	791	713	741	8,951

ALIENS.

Your Medical Officer was engaged from time to time at the Ministry of Health on the following Sub-Committee and reference:—

Mr. Haldane Porter	-	-	Home Office.
Mr. MacLachlan	-	-	Ministry of Health.
Mr. Gwyer	-	-	Ditto.
Dr. Reece	-	-	Ditto.
Dr. Craig	-	-	Ditto.
Col. Harrison	-	-	Ditto.
Dr. Willoughby	-	-	Port of London Sanitary Authority.

To advise the Ministry of Health as to the principles which should guide the Medical Inspectors charged with the duty of examining the physical condition of Aliens on their arrival in this country.

Pending the evolution of a scheme for the examination of Aliens the three Boarding Medical Officers at Gravesend examine Aliens on ships during their tour of duty, unless with their expert knowledge of shipping the procedure would be useless because of the difficulties. In addition to want of convenience for examination, with the utmost diligence the opportunity for examination is not sufficient in the absence of powers to stop vessels for the purpose at Gravesend and of provision for transport of the Medical Officer from one ship to another. His Majesty's Customs with the "Quarantine" Launch are very helpful, but given the greatest goodwill, considering the duties of the launch, the arrangements for transport must from time to time break down.

It appears that there are three possible schemes for the examination of Aliens:—

- (1) Examination on ship board on arrival at Gravesend, vessels being stopped when necessary, for the purpose.
- (2) Examination on ships in various docks and wharves, on arrival at their places of berthing in the Port.
- (3) That every Alien entering the Port should be landed at some one convenient point for examination.

Scheme (1) could be carried out by the present staff with the addition of one Medical Officer detailed for Alien work and with provision of transport. This arrangement obtained under the former Aliens Act, but the numbers of Aliens that constituted a ship an immigrant ship were then 12 or 20, and the ships were few, whereas now every Alien comes under scrutiny, and every ship carrying Alien passengers is for examination. At present there are many restrictions on free intercourse which makes the number of ships carrying Aliens small and the work light. These conditions may not always obtain.

Examination on the ships can be made partially satisfactory from the medical point of view, but only with difficulty.

Scheme (2) might be attempted with the addition of two Medical Officers, one spending half his time on Aliens; but it is not yet apparent what the amount of work would be considering the restrictions on free intercourse that exist. The completeness of medical examination could not easily be arranged for if made at many different points. The intervals of arrival of ships are irregular. Means for dealing with any medical conditions found would need multiplication. Examination would still be made on board ship. This scheme is the most objectionable of the three.

Scheme (3). During the War Aliens were landed at Tilbury. With the re-introduction of such a measure and provisions of an office for medical examination, all difficulties of examination of Aliens in the Port would be met.

Decency and order could be realised in a way that is impossible on board ship, transport for the Officers is at hand in the ferry and train, a convenient and medically satisfactory examination could be arranged both as regards place and necessary apparatus, the Immigration Officer and the Medical Inspector could be in constant touch during the examination, and stopping to land the Aliens would form a wholesome check on ships which bring these in ones and twos.

In my opinion the last scheme is the only completely satisfactory one from a medical point of view for the working of the Aliens Act in the Port of London.

The questions of policy requiring decisions are :—

- (1) The compulsory stopping of ships for examination of Aliens on board at Gravesend.
- (2) The landing of passengers at Tilbury.

THE PORT SANITARY AUTHORITIES (INFECTIOUS DISEASES) REGULATIONS, 1920.

1. These Regulations came into force on August 1st.
2. Among the definitions, " Infectious Disease " means " any epidemic or acute Infectious Disease."

3. Power is given to the Medical Officer of Health to board any ship, bring a ship to, or, if necessary, moor or anchor her in a convenient place for his visit or examination.

4. Power is given to the Medical Officer of Health—

- (a) To examine any person suffering from Infectious Disease.
- (b) To examine any person on an infected or suspected ship, or on a ship where he has reasonable grounds for suspecting that persons are present who during the three weeks preceding the arrival of the ship have been exposed to Infectious Disease.
- (c) To examine any person reasonably believed to be verminous.
- (d) To detain for examination any person whom he is empowered to examine.
- (e) To cleanse such person and his clothing or effects.
- (f) To prohibit landing of persons except under such conditions, specified in writing, as are reasonably necessary for the prevention of spread of infection.
- (g) To require the Master to take or assist in steps—
 - (a) For prevention of spread of infection by persons.
 - (b) For removal of conditions likely to convey infection.
 - (c) For the destruction of vermin and removal of conditions which harbour vermin.

The Medical Officer of Health may be required by the Sanitary Authority or by the Minister of Health to exercise these powers. Any directions by the Minister to the Medical Officer of Health shall forthwith be communicated to the Sanitary Authority.

5. The Medical Officer of Health may cause any person suffering from Infectious Disease to be removed to Hospital, or, if his condition does not permit of this, prohibit his removal or departure from the ship except with his consent.

6. It is the duty of the Master—

- (1) To notify to the Medical Officer of Health—
 - (a) Any case of infectious disease on his ship.
 - (b) The presence of dead rats or mortality or sickness among rats in the ship.
- (2) To furnish all information reasonably required of him.
- (3) To comply with requirements or directions made in pursuance of the Regulations.
- (4) To give " reasonably required " assistance.

7. It is the duty of every person on the ship to comply with all directions, requirements or conditions given, made or imposed, and to furnish all information reasonably required.

8. The Sanitary Authority may, and, if required by the Minister of Health, shall—

- (a) Appoint Medical Officers at approved remuneration.
- (b) Appoint other persons to exercise or perform such duties or powers as the Sanitary Authority shall assign to them.
- (c) Provide or arrange for—
 - (1) Waiting and examination rooms.
 - (2) Apparatus or means for cleansing and disinfection of ships, persons, clothing and other articles.
 - (3) Premises for temporary accommodation.
 - (4) Hospital accommodation.
 - (5) Means of transport.
- (d) Do all such other things as in the opinion of the Sanitary Authority or Minister are necessary for enabling that the Regulations be complied with.

9. The Regulations are not in derogation of any of the provisions of regulations at present in force.

(a) The definition of "Infectious Disease" given is an inclusive term which covers all the ship infections in which interference may be desirable on the part of a Port Sanitary Authority.

(b) The power set out in paragraph 3 was sought by your Worshipful Committee in the peculiar circumstances of the Port of London, where the boarding station is at some distance from the extensive docks. Such power had hitherto only been given in case of Cholera, Yellow Fever and Plague; it is necessary in case of Small-pox, Typhoid or other Infectious Disease or in the examination of a ship suspected of carrying infection. Through paragraph 4 (b) passengers from inland infected places are brought under examination whatever the state of the port of embarkation or condition of the ship as regards known infection, a valuable departure from precedent which will be applied to short voyage passenger ships when occasion demands.

(c) Paragraph 6 (a) throws upon the Master the onus of declaring mortality or sickness among rats or the presence of dead rats. (By definition "Master" includes "officer or any other person for the time being in charge or command of a ship.") The necessity for this was seen and urged by your Worshipful Committee in connection with the Plague-infected ships which have entered and rat mortalities which from time to time have occurred in the Port.

(d) Paragraph 4 (g) implies powers of disinfection somewhat equivalent to those of the Rats and Mice Destruction Act as regards rats—the burden of the work being placed where the advantages accrue. It also covers the removal of other verminous conditions on the same lines; the presence of infection is not necessary to action in removing conditions likely to convey infection or which harbour vermin.

The regulations have assumed their present form in place of the draft of 1919. They are, in my opinion, a complete charter to a Port Sanitary Authority for effective work in infectious disease, regularising procedures which hitherto have been practicable only by the co-operation of the steamship companies, and conveying duties to the Masters and travelling public which shall ensure the recognition on their part of their responsibilities to the community. The basis of the regulations would appear to be "reasonable necessity."

TABLE II.—INFECTIOUS DISEASE.

DISEASE.	1911.	1912.	1913.	1914.	1915.	1916.	1917.	1918.	1919.	Mean annual number for 10 years ending 31st December, 1920.	1920.
(a) CASES REPORTED :											
Cholera (including suspected cases)	9	2	19	...	2	5	2	...	9	5.8	10
Yellow Fever (ditto)	...	...	4	...	...	...	...	...	...	0.6	2
Plague (ditto)	...	9	4	4	4	...	18	12	20	7.7	6
Small-pox ...	13	34	19	9	47	15	2	16	43	22.5	27
Scarlet Fever ...	11	10	40	30	18	5	...	8	4	13.7	11
Diphtheria ...	18	37	16	10	18	7	9	23	25	18.4	21
Enteric Fever ...	70	61	65	67	64	61	43	26	77	58.5	51
Measles ...	175	61	64	228	337	836	168	256	52	269.0	513
German Measles ...	...	3	4	...	10	8	33	4	7	8.1	12
Erysipelas ...	11	3	3	3	9	1	...	...	3	3.6	3
Typhus Fever ...	...	1	...	...	...	...	1	...	...	0.3	1
Continued Fever ...	5	9	13	2	7	5	2	2	...	4.6	1
Relapsing Fever ...	...	...	...	...	...	...	...	19	...	1.9	...
Tuberculosis :—											
Pulmonary ...	...	71	151	127	96	53	45	38	51	69.9	67
Other kinds (including Miners' Phthisis).	...	...	7	45	6	19	26	20	35	16.0	2
Other diseases (including Chicken-pox).	38	42	38	50	48	44	166	2,552	1,887	563.1	766
TOTAL...	350	343	447	575	666	1,059	515	2,976	2,213	1,063.7	1,493
(b) TREATED IN PORT SANITARY HOSPITAL :											
Cholera (including suspected cases)	...	...	...	...	...	...	...	...	1	0.1	...
Yellow Fever (ditto)	...	...	...	...	...	...	...	...	...	...	...
Plague (ditto)	...	1	2	1	...	...	9	12	10	3.7	2
Small-pox ...	6	2	9	2	10	2	...	1	13	5.5	10
Scarlet Fever ...	6	...	3	8	10	2	...	5	1	3.8	3
Diphtheria ...	3	...	7	1	3	1	1	...	1	2.1	4
Enteric Fever ...	22	35	29	30	17	34	15	7	42	24.2	11
Measles ...	7	27	18	9	33	4	3	2	...	13.8	35
Erysipelas ...	...	1	...	...	1	...	1	...	...	0.4	1
Typhus Fever ...	...	...	...	...	...	...	...	...	...	...	...
Continued Fever ...	4	7	9	1	5	4	8	6	...	4.5	1
Other diseases (including Chicken-pox).	8	7	14	9	11	6	24	24	22	13.8	13
TOTAL...	56	80	91	61	90	53	61	57	90	71.9	80

TABLE III.

Return of the number of cases of Infectious Disease notified to the Ministry of Health during the year 1920, and of Deaths from the diseases notified.

This Table includes all cases actually introduced or occurring within the Port, but does not include cases reported as having occurred on vessels during the voyage, but which had either recovered or been removed from the vessel before arrival at Gravesend.

	<i>Notified.</i>	<i>Deaths.</i>
Plague (including suspected) - - -	2	2
Small-pox - - - - -	8	2
Scarlet Fever - - - - -	9	...
Diphtheria (including Membranous Croup) - - -	20	...
Enteric (Typhoid) Fever - - - - -	20	1
Puerperal Fever - - - - -	...	...
Typhus Fever - - - - -	...	...
Cholera - - - - -	...	...
Relapsing Fever - - - - -	...	...
Continued Fever - - - - -	2	...
Cerebro spinal Fever - - - - -	...	...
Acute Poliomyelitis - - - - -	...	...
Erysipelas - - - - -	3	...
Ophthalmia Neonatorum - - - - -	...	...
Tuberculosis: Pulmonary - - - - -	27	...
Other kinds - - - - -	2	...
Chicken-pox - - - - -	9	...
Whooping Cough - - - - -	...	...
Measles - - - - -	76	1
German Measles - - - - -	1	...
Influenza - - - - -	56	...
Pneumonia - - - - -	35	1
Malaria - - - - -	31	1
Dysentery - - - - -	4	...
Other Diseases - - - - -	9	...
	<u>314</u>	<u>8</u>

TABLE IV.—PLAGUE (including suspected cases).

Date.	Name of Vessel, Port of Registry and Official No.	Where from.	No. of Cases.	How dealt with.
1920.				
Feb. 17	s.s. "Alps Maru" - - -	Kobe - - -	1	Admitted to Port Sanitary Hospital.
March 4	s.s. "Alps Maru" - - -	Ditto - - -	1	Ditto.
April 30	s.s. "Nevasa," of Glasgow, 133,012.	Calcutta - - -	1	Landed at Suez.
May 21	s.s. "Peebles," of Newcastle, 142,381.	Santa Fé - - -	1	Landed at Rosario.
June 2	s.s. "Wolverton" - - -	Buenos Ayres - - -	1	Ditto.
Dec. 1	s.s. "Burma" - - -	Java - - -	1	Bubo. Landed at Suez. (Suspected Plague.)
		Total - - -	<u>6</u>	

s.s. "ALPS MARU"—PLAGUE.

OUTBREAK.—On the 17th February your Medical Officer was informed of a case of Plague on the above vessel lying in the Millwall Dock.

The following conditions were found:—

The ship left Kobe on the 29th November, 1919, and arrived at London on the 9th February, 1920, and in Millwall Dock on the 14th February.

The homeward voyage included calls at Yokohama, Moji, Shanghai, Hong Kong, Singapore and Colombo, at all of which ports cargo was taken in, Colombo, only, presenting a foul bill as regards Plague. Further calls were made at Suez and Port Said.

The ship lay head-on to the quay in Millwall Dock on Saturday and Sunday the 14th and 15th February, and started discharging into craft on the 16th February, lying at the buoys.

THE CASE.—Tsunezo Sawahata, 24 years old, was taken ill on the 15th February and developed a right Femoral Bubo on the 16th February. This was diagnosed as Plague by the ship's surgeon and reported a.m. 17th February. The patient had been ship's storekeeper up to two days before his illness, when he became cook, but still fetched his stores as often as not. The patient was removed to Denton Hospital, and the diagnosis was confirmed the same evening microscopically, by your Medical Officer, and subsequently by the Pathologist to the Ministry of Health. The patient died on the 19th February and was cremated on the 20th.

DISPOSAL OF SHIP.—The ship was removed to the quarantine grounds on the 18th February as soon as the circumstances of tide permitted, and certain barges with cargo already discharged were traced to their destinations or held pending disposition of their cargo under supervision.

THE CARGO.—Flax, seed, copra, ground nuts, white peas, green peas, sesame seeds, potato starch, beans and cocoa, distributed throughout the ship amid a burthen of 9,000 tons, and in many thousands of bags constitute a cargo typically attractive to rats.

Most of the cargo was destined for Hamburg or Antwerp, and only a small proportion (2,660 bags) of the bagged material above mentioned, for London.

A large part of the cargo was cased goods, teak, oil in drums, tobacco and other material unapproachable by or unattractive to rats.

A feature of the stowage was the distribution of the bagged attractive material in every hold and on every deck in the holds in view of multiple ports of discharge.

RATS.—Your Medical Officer was shown a dead rat found in the bath-room in the living quarters on the main deck, and dead rats were spoken of as seen by the stevedores, who also complained of the smell of dead rats in the holds.

Dead rats had been seen in several hatches by the ship's company, and three dead rats in all had been found in the living quarters up to the time of my visit. These had unfortunately been burned during the visit on confirmation of the diagnosis. (The ship is wholly manned by Japanese; no one amongst these speaks good English.)

THE VOYAGE.—The Surgeon's Certificate on arrival showed that there had been no febrile illness on the ship, no case suspicious of Plague and no observed mortality or morbidity amongst the rats.

A case of "Strangulated Hernia" landed at Port Said on 23rd January for operation, casually mentioned to your Medical Officer, was enquired into, since the regional symptoms of Plague may conceivably be confused with those of Strangulated Hernia in the absence of suspicion. This case was not mentioned on arrival of the ship at Gravesend.

PRECAUTIONS.—The living quarters of the ship were provisionally fumigated. All discharge of cargo was stopped and the hatches replaced. The barges in use were inspected and allowed to proceed for discharge.

It was found that the ship had not been alongside the quay during her stay in dock though barges had formed a gangway.

Tide and light did not permit of the ship leaving the dock for twenty hours since the engines were adrift and towage was the only means of progression. Meanwhile all possible communication with the quays were severed, the ship lying free at the buoys in mid dock.

Prophylactic serum was obtained and put on board the ship without delay. The whole of the crew was inoculated and reinoculated.

A refumigation of the living quarters and a steaming of all crew's bedding and clothing was carried out at Gravesend.

Pending discharge of the cargo and arrangements thereto the ship lay at the Bight in Gravesend Reach.

The crew was lodged entirely amidships. The ship was fumigated when empty at Kobe on the 26th November by the CO₂CO (Flue Gas) process.

The living quarters were all situated on the main deck amidships.

The crew was inoculated on the 20th and 27th February—successive inoculations—by the ship's Surgeon.

On discharging into lighters and barges the following difficulties to the ship and to effective sanitary control became apparent:—

- (1) There was a dearth of barges in the Port.
- (2) The discharge would be protracted over a very long period.

The conditions were represented to the Ministry of Health, with the suggestion that the ship should proceed to her final ports of discharge for unloading and disinfection, those ports being informed of the Plague infection. This was duly arranged and the ship sailed for Antwerp on Saturday, 6th March.

Meanwhile a further case of Plague occurred on the ship. A Japanese tally clerk, whose business took him into the infected holds, became ill on the 27th February. On 3rd March the malaise developed considerably with chest symptoms; on the 4th there was definite Pleurisy and a blood-stained sputum. Simultaneously with the development of the pulmonary condition there was tenderness on both sides of the neck. At the time of death, on the 5th, there was established a condition of massive Cervical Buboes and Œdema. On the 4th the expectoration was found to be loaded with typical Plague bacilli. This is the first definite case of secondary pneumonic incidence in the series of cases dealt with during recent years. The symptoms dated from the 27th February, just after inoculation for the second time. The question remains, therefore, whether the man would have been safe had his infection dated from a few days after rather than the time of the inoculation.

The holds in which this man's work lay are recognised to be points of danger during the discharge and prior to the complete disinfection.

RATS.—During the partial discharge of the ship at Gravesend the following tally was made:—

Found dead in holds	-	-	-	-	53
Killed in galley	-	-	-	-	2
Trapped	-	-	-	-	3
Killed on deck	-	-	-	-	2
Found dead in storeroom	-	-	-	-	4
					<hr/>
					64

Those sent to the London School of Tropical Medicine were reported too far decomposed for diagnosis of the condition causing death, and in three sent to the Ministry of Health no pestis was discovered.

The state of the ship was, however, self-evident as to a rat infection.

Twenty-nine barges full of cargo were kept under observation. Only six of these contained London cargo. The foreign cargo was loaded after a period of storage of 14 days or more into s.s. "Julius Cæsar" in the Millwall Dock. The barges were moored in the river during the period of storage, and on examination of these barges after transfer of cargo no dead rats were found in them.

The circumstances differ from those hitherto described in the size of the cargo and the fact that this is destined for Continental ports, and are paralleled by most in that the storekeeper was the first person attacked by the malady.

The s.s. "NEVASA," of Glasgow, arrived from Calcutta on the 28th April. On the 9th April a native pantry boy fell and injured his thigh. Next day he reported a swollen femoral gland on the seat of injury. He was landed at Suez on the 11th April as suspected Plague, said to have been confirmed later. Steam disinfection of all crew's effects and fumigation of quarters and pantries was carried out. Holds were fumigated at Marseilles. No dead or diseased rats were found, no unusual sickness or mortality. No rats caught.

The vessel was kept under observation while in the Port. Vessel sailed for Middlesbrough on the 4th May, and the Medical Officer of Health there was notified of the facts.

The s.s. "PEEBLES," of Newcastle, arrived from Santa Fé on the 21st May. A Lascar was taken ill and landed at Rosario on the 26th March for treatment, and a diagnosis was made of suspected Plague. The holds were fumigated and living quarters sprayed at Rosario. No trace of rats has been found on board.

The vessel was kept under observation while in the Port.

From the histories of the above cases, and from the absence of rat mortality in the case of s.s. "Nevasa," it would appear that there is doubt of the actual presence of Plague on either ship.

s.s. "Peebles" arrived from Santa Fé on the 21st May. The Master reported that there had been no sickness during the voyage. Information was received that a case of Plague had been removed from this vessel at Rosario. In explanation, the Master wrote that a man had been removed to the Pest House at Rosario for observation, but that to his knowledge no case of Plague occurred.

s.s. "WOLVERTON" arrived from Buenos Ayres on the 1st June. No sickness on board was reported by the Master on arrival. On the 2nd June it was ascertained that a case of suspected Plague had been removed from this vessel at Rosario. In explanation, the Master wrote that the case was reported at Glasgow, where the vessel remained seven days before proceeding to London.

Your Medical Officer approached the Owners and Masters by letter in these cases of neglect to declare suspected cases, and recommended that their explanations be accepted and that no further action be taken.

s.s. "BURMA" arrived from Java on the 1st December. On the 28th October a saloon topaz reported sick with an Inguinal Bubo. On the same day he was removed to hospital at Suez as a "suspected Plague case." The vessel and clothing of the crew were disinfected. No dead or sick rats were found on board.

On arrival at Gravesend this case was considered to be one of Bubo due to Venereal Disease. Nothing in the history pointed to Plague. The vessel was allowed to proceed to Greenland Dock.

TABLE V.—CHOLERA.

Date.	Name of Vessel, Port of Registry, and Official No.	Where from.	No. of Cases.	How dealt with.
1920.				
Jan. 29	s.s. "Trewidden," of St. Ives, 137,867.	Calcutta	- 2	One landed at Rangoon. 1 died.
July 13	s.s. "City of Naples," of Liverpool, 127,921.	Rangoon	- 1	Ditto.
Sept. 11	s.s. "Devanha," of Greenock, 117,400.	Yokohama	- 6	Landed at Singapore.
Dec. 5	s.s. "Director" - - -	Calcutta	- 1	Landed at Calcutta.
		Total	- 10	

CHOLERA.

The s.s. "TREWIDDEN" arrived from Calcutta on the 11th February, having had two cases of Cholera on board during the voyage—one case was landed at Rangoon and one case died. Infected quarters and bedding were disinfected at Rangoon, and water tanks were emptied and cleansed there. No further cases occurred.

The s.s. "CITY OF NAPLES" arrived from Rangoon on the 13th July. On the 28th May a native cook was landed at Rangoon with symptoms suspicious of Cholera. Effects were landed with patient and infected quarters disinfected. Freshwater tanks were cleaned out and cement washed, and fresh water taken in at Rangoon. No fresh cases occurred.

s.s. "DEVANHA," of Greenock, 117,400, arrived on the 11th September from Yokohama. Six Chinese firemen, who were signed on at Hong Kong, were taken ill between Hong Kong and Singapore with severe cramps in legs, vomiting and diarrhoea. One case died in 12 hours—buried at sea. The remainder were landed at Singapore 1st August.

Water tanks were emptied and disinfected. Closets, &c., disinfected. Fruit destroyed. All infected bedding and blankets were dumped and the vessel fumigated. No fresh cases occurred.

s.s. "DIRECTOR" arrived from Calcutta on the 5th December, 1920. A fireman, ex s.s. "Inveric," was put aboard the "Director" at Calcutta on the 28th October, after having been treated for Cholera. He stated that he had had fireman's cramps on numerous occasions. On arrival at Gravesend he was in good health and had no diarrhoea. The disease is stated to have been sudden in onset, and associated with vomiting, cramps and loose stools. Closet used was disinfected daily as a matter of routine. No other sickness occurred on board.

TABLE VI.—YELLOW FEVER.

Date.	Name of Vessel, Port of Registry and Official No.	Where from.	No. of Cases.	How dealt with.
1920.				
Jan. 20	s.s. "Simoon" - - -	Bathurst	- 2	1 died. 1 seen at Dover.

YELLOW FEVER. (?)

The s.s. "SIMOON," from Bathurst (Gambia), arrived at Sheerness on the 20th January. On the 10th January the chief mate complained of abdominal pains. He resumed duty on the 13th, and died at 7 a.m. on the 15th. He was buried at sea the same day.

On the 19th January an apprentice was seen by a doctor at Dover and was landed. Another member of the crew was seen, but not removed. Information was received on the 20th January that the case landed at Dover had been provisionally diagnosed as Yellow Fever, but further examination was made and information given that the case had died of Malignant Malaria.

Two cases of Malaria were removed to Denton Hospital from this vessel on arrival at Rochester.

The history of the ships shows infection of the crew with the malignant type of Malaria common on the West Coast of Africa.

TABLE VII.—TYPHUS.

Date.	Name of Vessel, Port of Registry and Official No.	Where from.	No. of Cases.	How dealt with.
1920.				
March 26	s.s. "Soudan," of Greenock, 112,837.	Bombay	1	Landed at Malta.

TYPHUS.

The s.s. "SOUDAN" arrived from Bombay on the 26th March, when it was ascertained that a case of Typhus had been removed therefrom at Malta on the 15th March. Disinfection and delousing was carried out at Malta on board the ship. Further disinfection was done at Gravesend on arrival. Strict enquiry into all the circumstances showed that there was little danger of the conveyance of infection after the precautions that had been adopted on discovery of the case. The most important of these was the disinfestation of the military ratings involved for lice.

TABLE VIII.—SMALL-POX.

Date.	Name of Vessel, Port of Registry and Official No.	Where from.	No. of Cases.	How dealt with.
1920.				
Jan. 15	s.s. "Devanha" - -	Bombay	1	Admitted to Grays Hospital.
" 22	s.s. "City of Canton" - -	Calcutta	1	Landed at Madras.
" 23	s.s. "Ciscar" - - -	Valencia	1	Landed at Liverpool.
Feb. 19	s.s. "City of London," of Glasgow, 124,162.	Calcutta	5	Three landed at Suez, two admitted to Port Sanitary Hospital.
" 26	s.s. "Media," of Glasgow, 132,091.	Ditto	2	Landed at Colombo.
" 28	s.s. "Wigmore," of London, 137,046.	Alexandria	1	Admitted to Port Sanitary Hospital.
March 8	s.s. "Oxfordshire" - -	Rangoon	1	Landed at Colombo.
" 11	s.s. "City of Manchester" -	Calcutta	1	Admitted to Port Sanitary Hospital.
" 24	s.s. "Karmala," of Liverpool, 135,590.	Calcutta	1	Landed at Bombay.
" 24	s.s. "China" and "Neuralia," of Glasgow, 133,081.	Calcutta	2	Admitted to Port Sanitary Hospital.
" 30	s.s. "Somali," of Greenock, 114,056.	Yokohama	1	Landed at Yokohama.
" 30	s.s. "Surf," of London, 105,842.	Barry	2	Admitted to Port Sanitary Hospital.
April 2	Training Ship "Warspite" -	—	1	Ditto.
" 9	s.s. "City of Baroda," of Liverpool.	Calcutta	1	Landed at Madras.
" 9	s.s. "Pyrrhus" - - -	Shanghai	1	Landed at Hong Kong.
" 16	s.s. "Nagoya" - - -	—	1	Admitted to Port Sanitary Hospital.
" 16	s.s. "Herefordshire," of Liverpool.	Rangoon	1	Landed at Suez.
May 7	s.s. "Highland Pride," of London, 129,086.	Buenos Ayres	1	Landed at Flores Island
" 11	s.s. "Prometheus," of Liverpool, 105,387.	Hong Kong	(?) 1	Landed at Karaman.
July 9	s.s. "Crane," of London, 118,457.	Smyrna	1	Landed at Messina.
		Total	27	

SMALL-POX.

The s.s. "CITY OF CANTON" arrived from Calcutta on the 22nd January, having landed a case of Small-pox at Madras on the 19th December. Disinfection of the ship was carried out there, and bedding, &c., landed. 50 members of the crew were re-vaccinated. No further cases occurred.

On the 15th January information was received from the Medical Officer of Health for Grays, that a case of Small-pox had been notified to him in the person of a woman who had visited s.s. "DEVANHA" on 27th December, 1919. A case of Small-pox was removed from this ship to Denton Hospital on 24th December. The disinfection of the bedding of the Isolation Quarters was left with the ship's Surgeon and Master, the ship having a steam disinfector on board, and is reported to have been properly carried out. The actual source of the infection was not traced on board the ship.

Instructions were issued to the Boarding Medical Officers that all infected bedding and effects in cases of serious Infectious Disease shall be taken for disinfection by the Port Sanitary Authority.

On the 16th January a case of Small-pox was notified on board the s.s. "CARNARVONSHIRE," lying in the Victoria Dock, and removal requested. Your Medical Officer visited the ship and found the case to be one of Venereal Disease in the late secondary stage, with a rash requiring close discrimination.

The s.s. "CITY OF CANTON" arrived from Calcutta on the 21st January, having landed a case of Small-pox at Madras on the 19th December. All bedding, &c., was landed, and the quarters disinfected at Madras. 50 of the crew were re-vaccinated. No fresh cases occurred.

On the 3rd February information was received from the Medical Officer of Health for Liverpool that a man from the s.s. "CISCAR" proceeded to his home in Liverpool on the 24th January, and became ill on the 26th January. He was found to be suffering from Small-pox. The s.s. "Ciscar" arrived from Valencia on the 23rd January, and proceeded to the London Dock. No sickness on board was reported on arrival or during the voyage, the case having gone to Liverpool in the incubation stage. The place of infection was Valencia.

The s.s. "CLAN McBEAN" arrived from Chittagong on the 13th February, and reported having landed a case of Chicken-pox at Chittagong and one case at Colombo; the latter case was subsequently proved to be Small-pox. On arrival at Gravesend the second cook was removed to Denton Hospital suffering from (?) Chicken-pox. Disinfection of effects and infected quarters was carried out by this Authority as for Small-pox, the case landed at Denton admitting of some doubt.

The s.s. "CITY OF LONDON" arrived from Calcutta on the 19th February, and reported having landed three cases of Small-pox at Suez on the 4th February. A fireman was removed to Denton Hospital, on arrival, suffering from Small-pox. Infected quarters and effects were disinfected by this Authority. The names and addresses of all passengers and crew were notified to the various Medical Officers of Health, as follows:—

Passengers	-	-	-	-	-	331
Crew	-	-	-	-	-	34

The s.s. "OXFORDSHIRE" arrived from Rangoon on the 8th March, having landed a case of Small-pox at Colombo on the 11th February. All crew and passengers were vaccinated; effects were landed and infected quarters disinfected at Colombo.

No fresh cases occurred.

The s.s. "MEDIA," of Glasgow, 132,091, arrived from Calcutta on the 26th February, having landed two cases of Small-pox at Colombo on the 29th January.

A general vaccination at Calcutta, and re-vaccination at Colombo, including all crew and passengers, had been carried out, and the infected quarters had been disinfected.

No fresh cases occurred.

The s.s. "WIGMORE," of London, 137,046, arrived from Alexandria on the 28th February, when a fireman was declared to be suffering from Small-pox. He was removed to Denton Hospital. Vaccination was offered and accepted by ten of the crew. Disinfection of effects and infected quarters was carried out by the Port Sanitary Authority. The names and addresses of all the crew were notified to the various Medical Officers of Health.

Information was subsequently received that three other members of the crew developed Small-pox, two in Liverpool and one in Hull.

The s.s. "CITY OF MANCHESTER" arrived from Calcutta on the 11th March. On 14th February a Lascar had developed Small-pox and was isolated on board the vessel, being subsequently removed to Denton Hospital. All necessary disinfection was carried out. No further cases occurred. The names and addresses of all passengers were notified to the various Medical Officers of Health. The crew remained on board.

The s.s. "KARMALA" arrived from Calcutta on the 24th March, having landed a case of Small-pox at Bombay on the 27th February. The crew were re-vaccinated at Bombay and all necessary disinfection carried out. No further cases occurred.

The s.s. "SOMALI" arrived from Yokohama on the 30th March, having landed a case of Small-pox at Yokohama on the 31st January. All necessary disinfection had been carried out. No further cases occurred.

On the 24th March information was received that two suspicious cases removed from the s.s. "CHINA" to isolation quarters in a "go down" in the Royal Albert Dock were suffering from Small-pox. Your Medical Officer saw these cases, which were then early and doubtful. They were removed to Denton Hospital and the s.s. "China" crew thoroughly disinfected.

The s.s. "NEURALIA" arrived at Gravesend on the 14th March from Calcutta. She carried a spare crew of 370 men. Of these, 289 men were berthed on s.s. "China" (under repair in the dock), and 81 were disposed of as follows:—

Thirty, P. and O. Shore Quarters on 19th March.

Fifty-one at Bow Chambers, Asiatic House.

An examination of the crews of the s.s. "Neuralia" and "China" did not disclose any recent case on board as source of infection.

The whole of the crews of these two vessels were re-vaccinated, and all necessary disinfection was carried out.

Eighty-one of the spare crew proceeded to Hull on the 24th March to join s.s. "Poona," and the Medical Officer of Health for Hull was advised of the facts.

The source of infection was not found, but must have existed on s.s. "Neuralia" during the homeward voyage of that ship.

The s.s. "SURF" arrived from Barry on the 27th March.

On the 30th a case of Small-pox was notified on this vessel, and removed to Denton Hospital.

On 1st April another case was notified and was removed to Denton Hospital.

Disinfection of effects and quarters on the vessel was carried out.

A suspicious case was removed from this vessel at Barry, and another case was previously landed at Plymouth.

The names and addresses of four of the crew who had gone home were notified to the various Medical Officers of Health. The remainder of the crew remained on board. All the crew had been recently re-vaccinated, except four seamen who were associated with the case which occurred on 30th March. These were vaccinated by your Medical Officer. They, with the seamen removed, had refused vaccination at Barry, and the further case of 1st April occurred among these.

The s.s. "CITY OF BARODA," of Liverpool, arrived from Calcutta on the 8th April, when it was ascertained that a case of Small-pox had been landed at Madras on the 5th March. The crew were vaccinated, and all disinfection carried out at Calcutta. No further case occurred.

The s.s. "PYRREUS" arrived from Shanghai on the 9th April, having landed a case of Small-pox at Hong Kong on the 29th February. All on board were vaccinated, and disinfection done at Hong Kong. No further case occurred.

The s.s. "HEREFORDSHIRE," of Liverpool, arrived from Rangoon on the 14th April, having landed a case of Small-pox at Suez on the 31st March. All vaccinations and disinfection were carried out at Suez. No further case occurred.

The s.s. "HIGHLAND PRIDE" arrived from Buenos Ayres on the 7th May. On the 20th March a steward was taken ill with headache, backache and Small-pox lesions. He was landed at Flores Island on 25th March. All on board were vaccinated. Effects were landed and hospital quarters and clothing disinfected. No fresh case occurred.

The s.s. "PROMETHEUS," of Liverpool, arrived from Hong Kong on the 8th May. On 7th April a Pilgrim on board was taken ill with symptoms suspicious of Small-pox. He was landed at Kamaran on 19th April. Effects and quarters were disinfected. No fresh case occurred.

The s.s. "HINDOO," of Hull, arrived from Cochin on the 8th June. On the 20th April a member of the crew was taken ill and sent to hospital on the 22nd as a case of Malaria. He is reported to have died from Small-pox on the 27th April. Infected quarters on the ship were fumigated and all bedding thrown overboard. No further case occurred. The crew remained on board.

The s.s. "CRANE," of London, 118,457, arrived from Smyrna on the 9th July. On the 23rd June a case of Small-pox was removed from this vessel at Messina. The crew were vaccinated there. Infected quarters on the vessel were disinfected and also all bedding and clothing. No fresh case occurred.

TABLE IX.—ENTERIC FEVER.

Date.	Name of Vessel, Port of Registry, and Official No.	Where from.	No. of Cases.	How dealt with.
1920.				
Jan. 8	Training Ship "Cornwall," lying at Purfleet.	- - -	2	Admitted to Port Sanitary Hospital.
" 12	s.s. "Sardinia," of Glasgow, 115,696.	Bombay -	1	Ditto.
" 23	s.s. "Lynton Grange" -	Rosario -	1	Landed at St. Vincent.
" 29	s.s. "Oscar" (Norwegian) -	- - -	1	Admitted to Seamen's Hospital, Greenwich.
" 29	s.s. "Henty Tegner" (Dane)-	- - -	2	Ditto.
Feb. 15	s.s. "Pruth," of London, 139,109.	Bombay -	1	Landed at Singapore.
" 18	s.s. "Wildwood" (American)-	Philadelphia	1	Admitted to Port Sanitary Hospital.
March 7	s.s. "Garth Castle" - -	Durban -	1	Allowed to proceed to Chelsea.
" 25	s.s. "Marathon," of Aberdeen.	Brisbane -	3	Landed at Brisbane.
" 29	Training Ship "Exmouth," at Grays.	- - -	1	Removed to Ship's Hospital on shore.
" 31	s.s. "Indarra" - - -	Sydney -	1	Landed at Gibraltar.
May 4	Training Ship "Exmouth," at Grays.	- - -	1	Removed to Eastern Hospital (M.A.B.).
" 5	s.s. "Osterley," of Glasgow, 128,287.	Brisbane -	1	Landed at Fremantle.
" 12	s.s. "Inventor," of Liverpool, 131,287.	Calcutta -	1	Landed at Port Said.
" 27	s.s. "British Fern," of London, 123,809.	Port Arthur	1	Admitted to Port Sanitary Hospital.
" 28	s.s. "Leicestershire," of Liverpool, 127,995.	Rangoon -	1	Landed at Port Said.
June 6	s.s. "Dania" - - -	Vladivostock	2	Landed at Singapore.
" 7	s.s. "Sheaf Spear," of New-castle.	Rosario -	1	Landed at Las Palmas.
" 7	s.s. "Mississippi," of Belfast, 136,343.	Boston -	1	Removed to Hospital at Stratford.
" 14	s.s. "Prinz Ludvig," of London, 143,122.	Bombay -	1	Landed at Port Said.
" 30	s.s. "Garth Castle," of London, 129,078.	Mombasa -	2	Landed at Marseilles.
July 29	s.s. "Mackay Bennett" -	- - -	1	Admitted to Port Sanitary Hospital.
	Carried forward	-	28	

ENTERIC FEVER—continued.

Date.	Name of Vessel, Port of Registry, and Official No.	Where from.	No. of Cases.	How dealt with.
1920.		Brought forward	- 28	
Aug. 8	s.s. "Tsuruga Maru," of Tokio.	Kobe	1	Admitted to Seamen's Hospital, Royal Albert Dock.
" 19	s.s. "Portreath," of Cardiff, 128,522.	Rosario	1	Landed at St. Vincent.
" 30	s.s. "Osterley" - - -	- - -	1	Admitted to Port Sanitary Hospital.
Sept. 12	s.s. "Explorer" - - -	Calcutta	1	Landed at Port Said.
" 23	s.s. "Boorara," of London, 189,010.	Sydney	1	Admitted to Port Sanitary Hospital.
" 25	s.s. "Kaisar-I-Hind," of Greenock, 128,653.	Bombay	1	Ditto.
" 27	s.s. "Assaye," of Greenock, 109,252.	Bombay	5	Landed at Southampton.
Oct. 11	s.s. "Fritz," of London, 143,952.	Sfax	1	Admitted to Seamen's Hospital, Greenwich.
" 15	s.s. "Commonwealth" - - -	- - -	1	Admitted to Port Sanitary Hospital.
" 22	s.s. "Mahanada," of Liverpool, 187,409.	Calcutta	1	Landed at Port Said.
Nov. 19	s.s. "Guildford Castle," of London, 132,611.	Kilindine	1	Admitted to Port Sanitary Hospital.
" 22	s.s. "Crawford Castle," of London, 129,150.	Beira	2	Landed at Las Palmas.
Dec. 11	s.s. "Kashmir," of Greenock, 128,655.	Bombay	1	Landed at Aden.
" 21	s.s. "Nyanza" - - -	Calcutta	1	Landed at Port Said.
" 23	s.s. "Crane," of London, 118,457.	Leghorn	1	Landed at Naples.
" 28	s.s. "Demosthenes," of Aberdeen, 129,362.	Brisbane	2	Landed at Fremantle.
" 31	s.s. "Leicestershire" - - -	Rangoon	1	Landed at Colombo.
		Total	- 51	

TABLE X.—DIPHThERIA.

Date.	Name of Vessel, Port of Registry and Official No.	Where from.	No. of Cases.	How dealt with.
1920.				
Jan. 8	s.s. "Strathfillan," of Glasgow, 121,341.	New York	1	Admitted to Orsett Hospital.
" 9	s.s. "Batavia IV.," of Rotterdam.	Rotterdam	1	Admitted to Port Sanitary Hospital.
" 28	Training Ship "Arethusa," at Greenhithe.	- - -	1	Removed to Ship's Hospital on shore.
Feb. 6	Ditto - - -	- - -	2	Ditto.
" 23	s.s. "Ormonde" - - -	Brisbane	1	Well on arrival.
March 8	Training Ship "Arethusa," at Greenhithe.	- - -	3	Removed to Dartford Hospital.
" 19	Training Ship "Exmouth," at Grays.	- - -	1	Removed to Ship's Hospital on shore.
May 14	s.s. "Canadian Navigator" -	St. John's, N.B.	1	Admitted to Port Sanitary Hospital.
July 1	Training Ship "Exmouth," at Grays.	- - -	1	Removed to Eastern Hospital (M.A.B.).
" 15	Ditto - - -	- - -	1	Ditto.
Sept. 20	s.s. "Paparua" - - -	Wellington	1	On board.
" 27	s.s. "Caronia," of Liverpool -	New York	1	Admitted to Port Sanitary Hospital.
Oct. 3	Training Ship "Arethusa," at Greenhithe.	- - -	1	Removed to Dartford Hospital.
Nov. 9	Ditto - - -	- - -	1	Ditto.
" 16	Training Ship "Exmouth," at Grays.	- - -	1	Removed to Ship's Hospital on shore.
" 25	Ditto - - -	- - -	1	Ditto.
Dec. 14	Ditto - - -	- - -	1	Removed to Eastern Hospital (M.A.B.).
" 23	s.s. "Corsican," of Glasgow, 121,194.	St. John's, N.B.	1	Admitted to Port Sanitary Hospital.
		Total	- 21	

TABLE XI.—SCARLET FEVER.

Date.	Name of Vessel, Port of Registry and Official No.	Where from.	No. of Cases.	How dealt with.
1920.				
Feb. 6	Training Ship "Arethusa," at Greenhithe.	- - -	1	Removed to Ship's Hospital on shore.
March 8	Ditto - - -	- - -	2	Removed to Dartford Hospital.
May 7	s.s. "Glenariffe," of Glasgow	Yokohama -	1	Landed at Marseilles.
" 12	Training Ship "Exmouth," at Grays.	- - -	1	Removed to Eastern Hospital (M.A.B.).
" 18	Ditto - - -	- - -	1	Ditto.
June 9	s.s. "Morea," of Glasgow, 128,235.	- - -	1	Admitted to Hospital at Southend-on-Sea.
" 19	s.s. "Gleniffer," of London, 139,052.	Kobe - -	2	Admitted to Port Sanitary Hospital.
Oct. 11	s.s. "Arawa," of Southampton.	Wellington -	1	Admitted to Plaistow Hospital.
Nov. 10	s.s. "Tyr" - - -	Ormstrald -	1	Admitted to Port Sanitary Hospital.
		Total -	11	

TABLE XII.—MEASLES.

Date.	Name of Vessel, Port of Registry and Official No.	Where from.	No. of Cases.	How dealt with.
1920.				
Jan. 9	s.s. "Osterley," of Glasgow -	Brisbane -	21	Landed at Plymouth.
" 31	s.s. "Billy," of London -	Calais -	1	Admitted to Port Sanitary Hospital.
Feb. 2	s.s. "Morea," of Glasgow, 128,235.	Sydney -	6	Landed at Marseilles, Plymouth and Tilbury.
" 3	s.s. "Berrima," of Greenock, 135,332.	Ditto -	5	On board.
" 16	Training Ship "Exmouth," at Grays.	- - -	14	Removed to Ship's Hospital on shore.
" 18	s.s. "Kashgar," of Greenock, 128,654.	Yokohama -	9	On board.
" 23	Training Ship "Exmouth," at Grays.	- - -	15	Removed to Eastern Hospital (M.A.B.).
March 4	Ditto - - -	- - -	3	Ditto.
" 31	s.s. "Nagoya," of Greenock, 135,323.	Yokohama -	27	On board.
April 7	Ditto - - -	Ditto -	2	One isolated on board, one admitted to Port Sanitary Hospital.
" 17	s.s. "Bremen" - - -	Sydney -	1	On board.
" 19	s.s. "Mantua" - - -	- - -	1	Landed at Plymouth.
" 24	s.s. "Borda" - - -	Sydney -	5	On board.
" 26	s.s. "Mantua," of Greenock, 127,544.	- - -	1	Isolated on board.
" 28	s.s. "Starleyhall," of Leith, 82,012.	Leith -	1	Ditto.
" 29	s.s. "Saxonia," of Liverpool, 110,648.	New York -	2	Landed at Hamburg.
" 30	s.s. "Themistocles," of Aberdeen, 129,349.	Brisbane -	1	On board.
May 10	s.s. "Beltana," of Greenock, 131,853.	Sydney -	7	Ditto.
" 20	s.s. "Durham Castle," of London, 118,387.	Mauritius -	2	Admitted to Port Sanitary Hospital.
" 23	s.s. "Quilpne" - - -	- - -	2	Ditto
" 24	s.s. "Scotian," of Glasgow, 129,457.	Montreal -	1	On board.
" 25	s.s. "San Silvestre," of London, 135,234.	Tampico -	1	Ditto.
" 28	s.s. "Leicestershire," of Liverpool, 127,995.	Rangoon -	1	Ditto.
" 31	s.s. "Mentor," of Liverpool, 137,408.	Yokohama -	1	Ditto
		Carried forward -	130	

MEASLES—continued.

Date.	Name of Vessel, Port of Registry and Official No.	Where from.	No. of Cases.	How dealt with.
1920.		Brought forward	- 130	
June 11	s.s. "Tunisian," of Glasgow, 111,248.	Montreal	- 1	Admitted to Port Sanitary Hospital.
" 23	s.s. "Yaroslav" - - -	Dalny	- 9	On board.
July 1	s.s. "Kentish Coast," of Liverpool, 137,435.	- - -	- 1	Admitted to Port Sanitary Hospital.
" 2	s.s. "Highland Piper," of London, 132,559.	River Plate	- 2	On board.
" 10	s.s. "Orsova," of Glasgow, 129,278.	Brisbane	- 44	Seven cases to Port Sanitary Hospital.
" 14	s.s. "Indarra," of Glasgow, 136,369.	Sydney	- 54	Three cases to Port Sanitary Hospital.
" 17	s.s. "Morea," of Glasgow, 128,235.	Bombay	- 3	Landed at Plymouth.
Aug. 19	s.s. "Berrima," of Greenock, 135,332.	Brisbane	- 50	On board.
Sept. 3	s.s. "Osterley" - - -	Ditto	- 68	Five cases to Port Sanitary Hospital.
" 11	s.s. "Marathon," of Aberdeen, 118,184.	Sydney	- 1	On board.
" 27	s.s. "Orontes," of Glasgow, 115,707.	Brisbane	- 20	Ditto.
Oct. 6	s.s. "Pakeha," of Southampton.	Wellington	- 2	Ditto.
" 11	s.s. "Orvieto," of Belfast, 129,628.	Brisbane	- 50	Five cases to Port Sanitary Hospital.
" 13	s.s. "Stephan," of London, 143,365.	Barbadoes	- 1	Admitted to Seamen's Hospital, Greenwich.
" 19	s.s. "Ruahine," of Plymouth, 124,582.	Wellington	- 1	On board.
Nov. 1	s.s. "Lancashire" - - -	Rangoon	- 1	Landed at Marseilles.
" 7	s.s. "Beltana," of Greenock, 131,833.	Sydney	- 22	On board.
" 7	s.s. "Rimutaka," of Plymouth, 111,355.	Auckland	- 15	Landed at Southampton.
" 13	s.s. "Themistocles," of Aberdeen, 129,349.	Sydney	- 32	Five cases to Port Sanitary Hospital.
" 15	s.s. "Borda," of Greenock, 135,340.	Ditto	- 1	Admitted to Port Sanitary Hospital.
Dec. 2	s.s. "Athenic," of Liverpool, 115,239.	Wellington	- 1	Landed at Southampton.
" 23	s.s. "Corsican," of Glasgow, 121,194.	St. John's	- 1	On board.
" 26	s.s. "Osterley" - - -	Sydney	- 1	Ditto.
" 26	s.s. "Koningen Luise" - - -	Ditto	- 2	Ditto.
		Total	- 513	

TABLE XIII.—GERMAN MEASLES.

Date.	Name of Vessel, Port of Registry and Official No.	Where from.	No. of Cases.	How dealt with.
1920.				
Feb. 8	s.s. "Orvieto," of Belfast, 129,628.	Brisbane	- 8	Treated on board.
" 18	s.s. "Mandala," of Glasgow, 137,806.	Calcutta	- 1	Ditto.
April 13	s.s. "Macedonia" - - -	Bombay	- 1	Ditto.
May 6	Training Ship "Arethusa" - - -	- - -	- 1	Admitted to Port Sanitary Hospital.
" 23	s.s. "Quilpne," of Liverpool, 124,965.	Demerara	- 1	Allowed to land.
		Total	- 12	

TABLE XIV.—CONTINUED FEVER.

Date.	Name of Vessel, Port of Registry and Official No.	Where from.	No. of Cases.	How dealt with.
1920.				
Aug. 9	s.s. "Amasis" - - - -	- - - -	1	Removed to Port Sanitary Hospital.

TABLE XV.—CHICKEN-POX.

Date.	Name of Vessel, Port of Registry, and Official No.	Where from.	No. of Cases.	How dealt with.
1920.				
Jan. 17	s.s. "Tamba Maru" - - -	Yokohama -	3	Landed at Marseilles.
Feb. 3	s.s. "Berrima," of Greenock, 135,332.	Sydney -	3	On board.
" 9	s.s. "Morea," of Glasgow, 129,235.	In Dock -	2	Ditto.
" 13	s.s. "Clan McBean" - - -	Chittagong -	1	Admitted to Port Sanitary Hospital.
" 16	s.s. "Konig F. August" - -	Bombay -	2	Admitted to Devonport Hospital.
March 29	Training Ship "Worcester" -	- - - -	2	Removed to Ship's Hospital on shore.
April 16	s.s. "Media," of Liverpool -	Calcutta -	1	Isolated on board.
" 17	s.s. "Bremen" - - - -	Sydney -	1	Ditto.
" 19	s.s. "Mantua" - - - -	- - - -	1	Ditto.
" 25	s.s. "Miltiades," of Aberdeen, 118,179.	Brisbane -	1	Landed at Plymouth.
" 30	s.s. "Themistocles," of Aberdeen, 129,349.	Ditto -	2	Isolated on board.
May 31	s.s. "Mentor," of Liverpool -	Yokohama -	1	On board.
June 5	s.s. "Nore," of London -	Singapore -	4	Ditto.
" 27	s.s. "Clan Colquhoun," of Glasgow.	Chittagong -	1	Landed at Chittagong.
July 26	s.s. "Nalder," of Glasgow, 142,257.	Sydney -	3	On board.
Aug. 6	Ditto - - - -	- - - -	2	Isolated on board.
Sept. 27	s.s. "Grantully Castle" - -	Cape Town -	6	Landed at Southampton.
Oct. 16	s.s. "Narkunda," of Belfast, 142,496.	Sydney -	2	Landed at Fremantle.
Nov. 9	s.s. "Orsova," of Glasgow, 128,278.	Brisbane -	7	On board.
" 27	s.s. "Ormonde," of Glasgow, 141,866.	Ditto -	5	Ditto.
		Total -	50	

TABLE XVI.—CEREBRO-SPINAL MENINGITIS.

Date.	Name of Vessel, Port of Registry and Official No.	Where from.	No. of Cases.	How dealt with.
1920.				
Oct. 26	s.s. "Kaga Maru" - - -	Yokohama -	1	Died on board.
Dec. 29	s.s. "City of Exeter" - - -	Calcutta -	1	Died at sea.
		Total -	2	

TABLE XVII.—MALARIA.

Date.	Name of Vessel, Port of Registry and Official No.	Where from.	No. of Cases.	How dealt with.
1920.				
Jan. 12	s.s. "Sardinia," of Glasgow, 115,696.	Bombay	1	On board.
" 12	s.s. "Clan Lindsay" - -	Ditto	1	Ditto.
" 20	s.s. "Clan Macbrayne" - -	Chittagong	1	Landed at Gibraltar.
" 20	s.s. "Simoon" - - -	Bathurst	2	Admitted to Port Sanitary Hospital.
" 23	s.s. "Chakrata" - - -	- - -	1	On board.
" 23	s.s. "Nardana" - - -	Calcutta	1	Ditto.
" 24	s.s. "Comrie Castle" - -	Mauritius	10	Ditto.
Feb. 9	s.s. "Clan Buchanan," of Glasgow, 124,232.	Calcutta	1	Ditto.
" 11	s.s. "Gambia," of Liverpool, 137,484.	Okobo	2	Ditto.
" 12	s.s. "Laertes" - - -	Manila	1	Ditto.
March 22	s.s. "Goorka," of Southampton, 106,917.	Beira	20	Ditto.
" 25	s.s. "Onega" - - -	Bathurst	5	Ditto.
" 24	s.s. "Windhuk," of London, 143,111.	Duala	3	Ditto.
April 12	s.s. "Melville" - - -	Lagos	8	Ditto.
" 14	s.s. "Devanha," of Greenock	Bombay	1	Died on board.
" 19	s.s. "Ancrobra," of Liverpool, 112,841.	Burutu	7	On board.
May 1	s.s. "Macedonia," of Belfast, 116,012.	Lying in River	1	Body landed at Denton Hospital.
" 18	s.s. "Imato Maru" - - -	- - -	1	Admitted to Seamen's Hospital, Greenwich.
" 18	s.s. "Mount Shasta" - - -	- - -	1	Ditto.
" 31	s.s. "Friedrichsruh" - - -	Sydney	2	Landed at Plymouth.
June 1	s.s. "Kelsomoor," of London, 139,038.	Rosario	1	Landed at Dakar.
" 3	s.s. "Hornsee" - - -	South Shields	1	Admitted to Seamen's Hospital, Greenwich.
" 11	s.s. "Gaika" - - -	Beira	11	On board.
" 19	s.s. "Narkunda" - - -	Bombay	2	Ditto.
July 19	s.s. "Lancashire," of Liverpool, 140,529.	Rangoon	1	Ditto.
" 29	s.s. "Kinderdyk," of Holland	Burutu	5	Two cases to Seamen's Hospital, Greenwich.
Aug. 9	s.s. "Boulama," of Liverpool, 124,936.	Bathurst	3	On board.
" 10	s.s. "Quillot," of Liverpool, 124,036.	Demerara	1	Ditto.
" 10	s.s. "Nellore," of Greenock, 135,325.	Yokohama	1	Ditto.
" 13	s.s. "Garth Castle," of London, 129,078.	Beira	1	Landed at Marseilles.
" 17	s.s. "Unicöi" (American) -	New Orleans	1	Admitted to Seamen's Hospital, Greenwich.
" 16	s.s. "Windhuk," of London, 143,111.	Duala	8	Two cases to Seamen's Hospital, Greenwich. Others proceeded home.
" 25	s.s. "Agapenor" - - -	Yokohama	2	On board.
" 29	s.s. "Diabolo" - - -	Tacoma	1	Admitted to Seamen's Hospital Greenwich.
Sept. 2	s.s. "Kashmir" - - -	Calcutta	2	On board.
" 15	s.s. "Heluan" - - -	New Orleans	1	Ditto.
Oct. 3	s.s. "Chanda," of Glasgow, 121,308.	Karachi	1	Died on board.
" 4	s.s. "Airedale," of London, 110,105.	Maxim	3	On board.
" 18	s.s. "Oldenburg" - - -	Malaga	1	Ditto.
" 16	s.s. "Narkunda," of Belfast, 142,496.	Sydney	6	Ditto.

Carried forward - 123

MALARIA—continued.

Date.	Name of Vessel, Port of Registry, and Official No.	Where from.	No. of Cases.	How dealt with.
Brought forward			- 123	
1920.				
Oct. 17	s.s. "Batjan" - - -	Sourabaya	1	On board.
" 25	s.s. "Cluny Castle," of Lon- don, 118,323.	Mauritius	3	Ditto.
" 25	s.s. "Culna," of Glasgow, 124,164.	Calcutta	4	Ditto.
" 31	s.s. "Morea," of Glasgow, 129,235.	Bombay	2	Ditto.
Nov. 11	s.s. "Marpha," of Glasgow. 141,867.	Mombasa	1	Ditto.
" 17	s.s. "Badonia" - - -	Sourabaya	1	Ditto.
" 19	s.s. "Clan MacBride," of Glasgow, 133,987.	Calcutta	1	Ditto.
" 25	s.s. "Scipio" - - -	- - -	1	Ditto.
" 23	s.s. "Princess" - - -	- - -	5	Ditto.
" 26	s.s. "Camerata," of Swansea, 128,912.	Busra	1	Landed at Port Said.
" 28	s.s. "Kalomo" - - -	Calcutta	(?)1	On board.
Dec. 4	s.s. "Syria" - - -	Bombay	3	Ditto.
" 13	s.s. "Derbyshire" - - -	Rangoon	1	Ditto.
" 24	s.s. "Narkunda" - - -	Bombay	5	Ditto.
" 26	s.s. "Koningen Luise" - - -	Sydney	1	Ditto.
Total			- 154	

TABLE XVIII.—PULMONARY TUBERCULOSIS.

Date.	Name of Vessel, Port of Registry and Official No.	Where from.	No. of Cases.	How dealt with.
1920.				
Jan. 22	s.s. "Clan Ranald" - - -	Galle	1	Landed at Aden.
" 23	s.s. "Roon," of London - - -	Singapore	1	Died on board.
" 24	s.s. "Willaston" - - -	P. Maine	1	Ditto.
Feb. 2	s.s. "None," of Greenock, 123,531.	- - -	1	Ditto.
" 2	s.s. "Clan Ranald," of Glas- gow, 137,833.	Colombo	1	Landed at Aden.
" 9	s.s. "Lubech" - - -	Mauritius	1	Landed at Tilbury.
" 9	s.s. "Highland Pride," of London, 129,086.	Buenos Ayres	1	Remained on board.
" 20	s.s. "Inanda," of Aberdeen, 118,187.	- - -	1	Admitted to Seamen's Hos- pital, Greenwich.
" 20	s.s. "Blakemore," of Lon- don, 114,820.	- - -	1	Ditto.
March 12	s.s. "China," of Belfast, 105,567.	Tilbury	1	Died on board.
" 28	s.s. "Camana" - - -	Malmo	1	Remained on board.
April 13	s.s. "Maidan," of Liverpool	Calcutta	1	Ditto.
May 27	s.s. "Katuna," of London, 123,809.	Rangoon	1	Died on board.
June 6	s.s. "Dania" - - -	Vladivostock	1	Landed at Port Said.
" 7	s.s. "Mendocino," of Lon- don, 140,380.	Tampico	1	Returned to Norway.
" 9	s.s. "Cuirassier," of Man- chester, 135,360.	- - -	1	Admitted to Hospital at Kensington.
" 23	s.s. "Yaroslav" - - -	Dalny	7	Died on board.
July 9	s.s. "Kliest," of London, 144,406.	Bombay	1	Landed at Tilbury.
" 10	s.s. "Assaye," of Greenock, 109,252.	Ditto	1	Died on board.
" 18	s.s. "Tras os Montes," of Lisbon.	Vladivostock	1	Proceeded home.
Aug. 10	s.s. "Nellore," of Greenock, 135,325.	Yokohama	1	Remained on board.
" 12	s.s. "Professor" - - -	Shanghai	1	Died on board.
Carried forward			- 28	

PULMONARY TUBERCULOSIS—continued.

Date.	Name of Vessel, Port of Registry and Official No.	Where from.	No. of Cases.	How dealt with.
1920.		Brought forward	- 28	
Sept. 7	s.s. "Eurylochus," of Liverpool, 131,424.	Melbourne	- 1	On board.
" 11	s.s. "Marathon," of Aberdeen, 118,184.	Sydney	- 1	Ditto.
" 25	s.s. "Kaisar-I-Hind," of Greenock, 129,653.	Bombay	- 1	Ditto.
" 27	s.s. "Assaye," of Greenock, 109,252.	Ditto	- 22	Landed at Southampton.
" 27	s.s. "Grantully Castle" -	Cape Town	- 1	On board.
Oct. 11	s.s. "Ageroen" (Norwegian)	Rafso	- 1	Ditto.
" 13	s.s. "Benalla," of Greenock -	Sydney	- 2	Died.
" 16	s.s. "Orvieto," of Belfast, 129,628.	Brisbane	- 1	On board.
" 19	s.s. "Miltiades," of Aberdeen, 118,179.	Ditto	- 1	Ditto.
" 22	s.s. "Glenamoy," of Glasgow, 137,826.	- - -	- 1	Admitted to Seamen's Hospital, Greenwich.
" 26	Ditto - - -	Yokohama	- 2	Ditto.
Nov. 15	s.s. "Crostaffels," of London, 143,172.	Java	- 1	On board.
" 13	s.s. "Ageren" - - -	- - -	- 1	Admitted to Seamen's Hospital, Greenwich.
Dec. 1	s.s. "Kashgar," of Greenock, 128,654.	Yokohama	- 1	Admitted to Seamen's Hospital, Royal Albert Dock.
" 21	s.s. "Wiltshire" - - -	Brisbane	- 2	On board. One case died.
		Total	- 67	

TABLE XIX.—INFLUENZA.

Date.	Name of Vessel, Port of Registry and Official No.	Where from.	No. of Cases.	How dealt with.
1920.				
Jan. 8	s.s. "Macedonia," of Belfast	Bombay	- 200	Landed at Port Said, Malta and Southampton.
" 16	s.s. "Henry Segner" - -	Valencia	- 3	On board.
" 24	s.s. "Melita" - - -	Bombay	- 3	Admitted to Orsett Hospital.
" 30	s.s. "Nankin," of Greenock, 131,857.	Calcutta	- 7	On board.
Feb. 4	s.s. "Elizabeth Maersk" -	Copenhagen	4	Admitted to Port Sanitary Hospital.
" 7	s.s. "Floræa," of Copenhagen	Ditto	- 1	On board.
" 9	s.s. "Plassey," of Greenock, 109,259.	In Dock	- 1	Ditto.
" 9	s.s. "Sardinia," of Glasgow, 115,696.	Ditto	- 1	Ditto.
" 9	s.s. "Nore," of Greenock, 123,531.	Ditto	- 1	Ditto.
" 16	s.s. "Bruno" (Norwegian) -	- - -	- 4	Ditto.
" 16	s.s. "Naiwa" (American) -	- - -	- 1	Admitted to Port Sanitary Hospital.
" 18	Royal Albert Dock, Shore Quarters.	- - -	- 4	On board.
" 19	s.s. "Sardinia" - - -	- - -	- 3	Ditto.
" 19	s.s. "Morea" - - -	- - -	- 1	Ditto.
" 23/25	Various Vessels, in Royal Albert Dock.	- - -	- 19	Isolated in shore quarters.
March 8	s.s. "China" - - -	- - -	- 2	On board.
" 8	s.s. "Novara" - - -	- - -	- 1	Ditto.
" 16	s.s. "City of Marseilles" -	Calcutta	- 63	Ditto.
" 23	s.s. "Malta" - - -	- - -	- 8	Ditto.
" 26	s.s. "Prinz Ludvig" - -	Bombay	- 1	Ditto.
" 27	s.s. "Roon" - - -	- - -	- 3	Admitted to Seamen's Hospital, Greenwich.
" 29	s.s. "Malta" - - -	- - -	- 4	On board.
		Carried forward	- 335	

INFLUENZA—continued.

Date.	Name of Vessel, Port of Registry and Official No.	Where from.	No. of Cases.	How dealt with.
Brought forward			-	335
1920.				
April 8	s.s. "Moora," of London, 139,025.	Persian Gulf	17	Malta 4. 13 died on board.
" 15	s.s. "Kanawha," of Liverpool, 102,122.	Halifax	- 1	Admitted to Seamen's Hospital, Greenwich.
" 22	s.s. "Grampian" - -	St. John's	- 6	Ditto.
June 3	s.s. "Trevilley," of St. Ives, 133,216.	Rosario	- 1	On board.
" 19	s.s. "Narkunda" - -	Bombay	- 5	Ditto.
July 7	s.s. "Ceramic," of Liverpool, 135,474.	Sydney	- 50	Ditto.
" 14	s.s. "Prinz Ludvig," of London, 143,122.	Bombay	- 48	Landed at Beyrout and Port Said.
Aug. 7	s.s. "Dongol," of Glasgow, 121,270.	Antwerp	- 1	Admitted to Seamen's Hospital, Greenwich.
" 24	s.s. "Kamo Maru," of Tokio	Yokohama	- 2	On board.
" 28	s.s. "Cairnvalon" - -	Montreal	- 10	Ditto.
Sept. 2	s.s. "Kashmir" - -	Calcutta	- 1	Ditto.
Dec. 4	s.s. "Syria" - -	Bombay	- 1	Ditto.
Total			-	<u>478</u>

INFLUENZA.

The measures for prevention of Influenza which were adopted in the Port are as follows:—

The Ministry of Health pamphlet was freely distributed on incoming ships and on those in port by your Medical Officers and Inspectors.

A circular letter was addressed to the shipping companies using the Port, enclosing instructions to Masters of vessels. These instructions supplements the Ministry of Health pamphlet as measures especially applicable to ships.

Medical attendants on ships in the Port, as far as known, have received the offer of the Government vaccine, which was distributed from the office at Greenwich, and shipping companies were informed that the vaccine could be obtained thence for disposal on outgoing ships.

A few severe cases were received into Denton Hospital from incoming ships.

The whole of the staff of the Authority on the Hulk "Hygeia" and Launch "David Burnett," as also the Hospital staff, accepted vaccination.

There is evidence that the immediate isolation of cases of "colds" in native crews controlled the disease among them. Your Medical Officer considers isolation the most effective measure of control on ships.

13/2/1920.

GENTLEMEN,

INFLUENZA.

I enclose some directions to Masters of vessels which with proper use would, I think, control Influenza on board ship. I should be glad if you would diffuse these directions; they are purposely given in the vernacular.

From this office is distributed the Ministry of Health vaccine for preventive inoculation. Surgeons attached to your ships, whether ashore or afloat, can have this on application, in such quantities as they can make use of either for passengers or crews. The numbers it is proposed to vaccinate should be approximately stated in applying for the vaccine.

The vaccine should be called for at this address.

Your obedient Servant,

(Signed) W. M. WILLOUGHBY,
Medical Officer of Health,
Port of London.

Distribution List.

PORT OF LONDON SANITARY AUTHORITY.

INFLUENZA ON SHIPS.

Directions to Masters.

AT SEA :—

ISOLATION.

- (1) Remove your case from association with other men.

Isolate him *immediately*.

If you do you will not have an epidemic on board.

If you don't you *will*.

(2) Similarly isolate every successive case or suspect. If the isolation cannot be complete go as far as you are able in that direction. Use your resources; do not tell yourself that it is impossible, but rather that it must be done.

The slight cases of "colds and aches" must be isolated, they are as dangerous to the rest of the crew as if they had Influenzal Pneumonia.

(3) To these ends know the state of health of the crew. Look out for cases after going into port, especially if the crew has been ashore.

(4) Isolation means setting the ill man in a place to himself, separate from all air contact with others, for the period of his fever and one week after.

(5) There should be neither bravado nor funk on the part of the person attending on him. The essence of the matter is "Don't breathe his breath"; good ventilation of the sick berth secures this and is a help to the patient. Remember that the breath and spit of the patient is the most infectious part of him. Articles soiled with his spit should not be handled without washing the hands after.

- (6) Prevention is to cure as gold is to copper.

CURE.—Aceto-Salicylic Acid (Aspirin) 10 grains, and whiskey ease the aches. A warm bunk is the place for the patient.

If the body is suitably covered and kept warm, the more air the better, but not a draught.

If the man is too ill to know his own mind on the matter of food, give him nutritious slops, milk, &c., at proper intervals.

IN PORT.—Fetch a doctor.—Make isolation quarters on board the ship without delay. Remember that if the port has Influenza its accommodation is likely to be already taxed; if not, the Port will not want to have it.

Removal for an ill patient is not always best for that patient. When asked, declare to the Authorities all "colds and chills" on board, they may be able to help you and the sufferers.

DISINFECTATION.—One pound of Sulphur burned in every 1,000 cubic feet of space for six hours will disinfect against Influenza after the removal of a case. Clothes should be hung up in the vapours.

Any spitty floor or berth should be washed over and spitty clothing washed out in a mild disinfectant solution, *e.g.*, 2 per cent. Izal. If you have not got the disinfectant the washing in water and drying in the open will do most of what is necessary. Water, especially sea water used in plenty, is a very good cleanser.

CLOTHING.—If in cold weather, insist on crew wearing their warm clothing and do what you can to prevent exposure.

QUARTERS.—Daily inspection to assure yourself that they are kept properly ventilated, clean and dry, and that when washed daily a little Izal or Carbolic is added to the water.

GARGLING.—See that each of the crew are given a daily gargle of water to which has been added enough Permanganate of Potash to give the liquid a pink colour.

February, 1920.

TABLE XX.—PNEUMONIA.

Date.	Name of Vessel, Port of Registry and Official No.	Where from.	No. of Cases.	How dealt with.
1920.				
Jan. 21	s.s. "Urbino," of Hull	- Calcutta	- 1	Landed at Colombo.
" 28	s.s. "Kaiser-I-Hind," of Greenock, 128,653.	- -	- 1	Isolated on board.
" 28	s.s. "Sardinia," of Glasgow, 115,696.	- -	- 1	Ditto.
" 30	s.s. "Adolf Woerman"	- Sydney	- 1	Died on board.
Feb. 2	s.s. "Nore," of Greenock, 123,531.	- -	- 1	On board.
" 20	s.s. "Devanha," of Greenock, 117,400.	- -	- 1	Admitted to Seamen's Hospital, Greenwich.
" 20	s.s. "W. T. Malling"	- -	- 2	Ditto.
" 20	s.s. "Avance"	- -	- 1	Ditto.

Carried forward - 9

PNEUMONIA—continued.

Date.	Name of Vessel, Port of Registry and Official No.	Where from.	No. of Cases.	How dealt with.
Brought forward			9	
1920.				
March 1	s.s. "China," of Belfast, 104,467.	Tilbury Dock	2	Admitted to Seamen's Hospital, Greenwich.
" 24	s.s. "Helenus" - - -	- - -	1	Ditto.
" 30	s.s. "Elpenor" - - -	Shanghai	1	Died on board.
April 7	s.s. "Amatonga," of North Shields, 115,857.	Antwerp	1	Admitted to Seamen's Hospital, Greenwich.
" 8	s.s. "Malta" - - -	- - -	1	Admitted to Poplar Hospital.
" 8	s.s. "Roon" - - -	- - -	1	Ditto.
" 11	s.s. "Laomedon" - - -	Yokohama	1	Died on board.
May 1	s.s. "Macedonia," of Belfast, 116,012.	Lying in River	1	Body landed at Denton Hospital.
June 2	s.s. "Hunnië," of London, 139,038.	Portsmouth	1	Admitted to Poplar Hospital.
" 4	s.s. "Konig F. August" -	Bombay	1	Admitted to Seamen's Hospital, Greenwich.
" 6	s.s. "Dania" - - -	Vladivostock	1	Died on board.
" 9	s.s. "Lindenhall," of West Hartlepool, 112,421.	Bahia Blanca	1	Admitted to Seamen's Hospital, Greenwich.
" 9	s.s. "Manora," of Glasgow, 133,129.	Antwerp	1	Ditto.
" 14	s.s. "Garmula," of Glasgow, 144,203.	Newcastle	1	Ditto.
" 23	s.s. "Yaroslav" - - -	Dalny	6	Died on board.
" 27	s.s. "Mantua," of Greenock, 127,544.	Bombay	1	Admitted to Seamen's Hospital, Greenwich.
July 14	s.s. "Prinz Ludvig," of London, 143,122.	Ditto	2	On board.
Aug. 4	s.s. "Huntsgreen," of London, 139,066.	Vladivostock	1	Landed at Port Said.
" 14	s.s. "Indarra," of Glasgow, 136,369.	Sydney	1	Admitted to Port Sanitary Hospital.
" 28	s.s. "Kildonan Castle" -	Vladivostock	1	On board.
Sept. 20	s.s. "Paparoa" - - -	Wellington	1	Ditto.
Oct. 13	s.s. "Stina" - - -	Finland	1	Admitted to Seamen's Hospital, Greenwich.
" 18	Training Ship "Exmouth," at Grays.	- - -	3	Removed to Ship's Hospital on shore.
Nov. 9	Ditto - - -	- - -	10	Ditto.
" 19	s.s. "Clan MacBride," of Glasgow, 133,987.	Calcutta	1	Landed at Port Said.
" 19	s.s. "Naldera," of Greenock, 142,257.	Sydney	1	Landed at Tilbury.
" 23	s.s. "Princess" - - -	- - -	1	On board.
" 25	Training Ship "Exmouth," at Grays.	- - -	1	Removed to Ship's Hospital on shore.
Dec. 31	Ditto - - -	- - -	3	Ditto.
Total			58	

TABLE XXI.—DYSENTERY.

Date.	Name of Vessel, Port of Registry and Official No.	Where from.	No. of Cases.	How dealt with.
1920.				
Jan. 22	s.s. "Eastern Queen" -	Manila	1	Admitted to Seamen's Hospital, Greenwich.
Feb. 5	s.s. "Wismar" - - -	Australia	1	Removed to Hospital in Essex.
May 26	s.s. "Athenic" - - -	- - -	1	Admitted to Port Sanitary Hospital.
Sept. 2	s.s. "Kashmir" - - -	Calcutta	1	Landed at Aden.
" 25	s.s. "Kaisar-I-Hind," of Greenock, 128,653.	Bombay	1	Admitted to Port Sanitary Hospital.
Carried forward			5	

DYSENTERY—continued.

Date	Name of Vessel, Port of Registry and Official No.	Where from.	No. of Cases.	How dealt with.
Brought forward				5
1920.				
Oct. 23	s.s. "Anchoria," of Glasgow, 129,598.	Calcutta	1	Landed at Calcutta.
" 25	s.s. "Cluny Castle," of London, 118,323.	Mauritius	1	Died on board.
" 25	s.s. "Culna," of Glasgow, 124,164.	Calcutta	2	Treated on board.
Nov. 1	s.s. "Comte de Flandre "	Algiers	1	Ditto.
" 7	s.s. "Beltana," of Greenock, 131,853.	Sydney	1	Ditto.
Dec. 1	s.s. "Burma "	Java	1	Ditto.
" 9	s.s. "Fantee "	Alexandria	1	Admitted to Seamen's Hospital, Greenwich.
" 28	s.s. "Desmosthenes," of Aberdeen, 129,362.	Brisbane	1	Treated on board.
Total			<u>14</u>	

TABLE XXII.—ERYSIPELAS.

Date.	Name of Vessel, Port of Registry and Official No.	Where from.	No. of Cases.	How dealt with.
1920.				
March 29	s.s. "Baron Rose "	- - -	1	Treated on board.
Aug. 19	s.s. "Derbyshire," of Liverpool.	Rangoon	1	Landed at Suez.
Oct. 27	s.s. "Baronesa," of Liverpool, 140,583.	Buenos Ayres	1	Admitted to Port Sanitary Hospital.
Total			<u>3</u>	

TABLE XXIII.—MUMPS.

Date.	Name of Vessel, Port of Registry and Official No.	Where from.	No. of Cases.	How dealt with.
1920.				
March 29	s.s. "Derbyshire "	Rangoon	3	Treated on board.
" 31	s.s. "Nagoya "	Yokohama	2	Ditto.
July 10	s.s. "Assaye," of Greenock, 109,252.	Bombay	3	Landed at Southampton.
" 26	s.s. "Nore," of Greenock, 123,531.	- - -	1	Isolated on board.
Total			<u>9</u>	

TABLE XXIV.—GASTRO-ENTERITIS.

Date.	Name of Vessel, Port of Registry and Official No.	Where from.	No. of Cases.	How dealt with.
1920.				
July 20	s.s. "Kashgar," of Greenock, 128,654.	Calcutta	<u>1</u>	Treated on board.

TABLE XXV.—VENEREAL DISEASES.

Date.	Ship.	Case (nature of).	Passenger or Crew	Rating.	Advice given.
1920.					
Jan. 1	" Egypt "	Syphilis	1	Crew	To Greenwich Hospital.
" 8	" Hororata "	Gonorrhœa	1	Fireman	Ditto.
" 10	" Sardinia "	Ditto	1	Crew	Ditto.
" 12	" Hatarana "	Syphilis	1	Lascar	To attend a Hospital.
" 12	" Australpool "	Ditto	1	D.B.S.	Ditto.
" 16	" Schwaben "	Ditto	2	Crew	To Connaught Road Hospital
" 16	" Krasnoiarsk "	Ditto	1	Ditto	Ditto.
" 16	" Inanda "	Gonorrhœa	1	Ditto	Ditto.
" 19	" Trafford Hall "	syphilis	1	Ditto	Ditto.
" 22	" Carmarthenshire "	Ditto	1	Ditto	Ditto.
" 22	" Margha "	Ditto	1	Ditto	Ditto.
" 23	" Mardana "	Soft Sore	1	Fireman	To attend a Hospital.
" 25	" Clan Morrison "	Ditto	1	Seaman	Ditto.
Feb. 6	" Coza "	Gonorrhœa	1	Native	To attend Seamen's Hospital.
" 9	" Arzila "	Syphilis	2	Firemen	Ditto.
" 10	" Ulm "	Ditto	2	Natives	Ditto.
" 11	" Atta "	Ditto	1	Engineer	Ditto.
" 13	" Eden Hall "	Gonorrhœa	1	Seaman	Ditto.
" 15	" Konig F. August "	Ditto	2	Firemen	Ditto.
" 18	" Mandala "	Soft Chancre	2	Natives	Ditto.
" 18	" Kleist "	Syphilis	2	Ditto	Ditto.
" 21	" Dunvegan Castle "	Soft Chancre	2	Seamen	Ditto.
" 24	" Tras-os-Montes "	Ditto	2	Ditto	Ditto.
" 27	" Quilpne "	Ditto	2	Ditto	Treated by Ship's Surgeon.
" 27	" Benalla "	Gonorrhœa	2	Ditto	Ditto.
March 5	" Helenus "	Ditto	2	Ditto	To attend Seamen's Hospital.
" 6	" Emanuel Nobel "	Soft Chancre and Bubo.	1	Seaman	To go to Hospital at Antwerp.
" 7	" Garth Castle "	Soft Chancre	1	Ditto	To Seamen's Hospital.
" 14	" Neuralia "	Gonorrhœa	1	Ditto	Ditto.
" 25	" Soudan "	Soft Sore	1	Ditto	Ditto.
" 26	" Gloucester Castle "	Syphilis	1	Ditto	Ditto.
April 2	" Lippe "	Soft Chancre	1	Fireman	To Seamen's Hospital, Greenwich.
" 2	Ditto	Bubo	1	A.B.	Ditto.
" 5	" Agamemnon "	Syphilis	1	Chinese Fireman.	To Liverpool Hospital.
" 3	" Gaboon "	Veneræal Bubo	1	Marconi Operator.	To Seamen's Hospital.
" 12	" Devanha "	Gonorrhœa	1	Steward	Ditto.
" 18	" Falkenfels "	Chancre	1	2nd Steward	Ditto.
" 18	Ditto	Ditto	1	Fireman	Ditto.
" 27	" Duquesa "	Gonorrhœa	1	Seaman	Ditto.
" 27	" Gaffney "	Gonorrhœa	5	Seamen	Ditto.
" 27	Ditto	Veneræal Bubo (Aliens).	2	Ditto	Ditto.
" 27	" Isfond "	Chancre and Bubo.	1	Alien	Treated on board.
May 2	" Ningchow "	Gonorrhœa	6	Seamen	To report at Seamen's Hospital.
" 2	" Venus "	Gonorrhœal Ulcer with perforation of Urethra.	1	Fireman	Ditto.
" 3	" Beltana "	Syphilis	3	Seamen	Ditto.
" 11	" Peterton "	Soft Sore	1	Seaman	Ditto.
" 20	" Colaba "	Soft Chancre	1	Ditto	Ditto.
" 21	" Saranac "	Syphilis	1	Fireman	To attend London Hospital.
June 5	" Ulf-Jarl "	Gonorrhœa	2	Crew (Aliens).	To Venereæal Clinic, Gravesend or Greenwich.
" 9	" Lindenhall "	Gonorrhœa and Stricture.	1	Fireman	To Connaught Road Hospital.
" 14	" Thorpe Grange "	Gonorrhœa and Orchitis	1	Steward	To Seamen's Hospital.
" 14	" St. Hilary "	Chancre	1	Mate	Ditto.
" 17	" Caterino "	Gonorrhœa	1	Fireman	Ditto.
" 17	" Tiverton "	Chancre	1	Sailor	Ditto.
" 17	" Tiverton "	Gonorrhœa	1	Ditto	Ditto.
" 21	" Suevic "	Soft Sores (? Syphilis)	1	Ditto	Ditto.
July 9	" Ormonde "	Syphilis	2	Crew	Ditto.
" 9	Ditto	Gonorrhœa	3	Ditto	Ditto.
" 11	" Kleist "	Syphilis	6	Native Crew	Ditto.
" 12	" Savan "	Chancre and Bubo.	1	Ditto	Ditto.
" 19	" Norman Star "	Soft Chancre	1	Trimmer	Ditto
" 20	" Navarra "	Gonorrhœa	2	Natives	Treated on board by Surgeon.
" 20	Ditto	Soft Chancre	1	Native	Ditto.
" 23	" Comrie Castle "	Ditto	2	Sailors	To Seamen's Hospital.
" 29	" Clan Macbrayne "	Syphilis	1	2nd Engineer	Ditto

VENEREAL DISEASES—continued.

Date.	Ship.	Case (nature of).	Passenger or Crew Rating.	Advice given.
July 29	" West Wanneke "	Orchitis - 1	Seaman -	To Seamen's Hospital.
" 29	" Cape Transport "	Syphilis - 1	Ditto -	Ditto.
Aug. 19	" Derbyshire "	Chancre - 2	Native Crew -	To attend Gravesend Hospital.
" 19	Ditto	Gonorrhœal Rheumatism - 1	Crew -	To attend Tilbury Hospital.
" 21	" Magic Star "	Gonorrhœa - 2	Native Crew -	To Seamen's Hospital, Greenwich.
" 24	" Warwickshire "	Ditto - 1	Steward -	Ditto.
" 27	" Mahronda "	Ditto - 1	Native Crew -	To Gravesend Hospital.
" 28	" Agapenor "	Soft Sore Paraphimosis - 1	Ditto -	To Seamen's Hospital, Greenwich.
" 29	" City of Baroda "	Syphilis - 1	Ditto -	Ditto.
" 29	" Saba "	Ditto - 1	Crew -	Ditto.
" 31	" Arzila "	Soft Chancre - 1	Ditto -	Ditto.
Sept. 1	" Highland Laddie "	Syphilis - 1	D.B.S. -	Ditto.
" 10	" Argyllshire "	Ditto - 1	Crew -	Ditto.
" 11	" Leicestershire "	Gonorrhœa - 2	European Crew -	To Gravesend Venereal Clinic
" 19	" Thurso "	Ditto - 1	Crew -	To attend Seamen's Hospital Venereal Clinic.
" 19	" Coya "	Ditto - 1	Ditto -	Ditto.
Oct. 9	" City of Delhi "	Gonorrhœa and Orchitis - 1	Seaman -	To Hospital in Tilbury Dock.
" 14	" Malanchee "	Gonorrhœa - 1	Ditto -	Ditto.
" 19	" Syria "	Ditto - 1	Ditto -	To Guy's Hospital.
" 28	" Mentor "	Syphilis - 2	Chinese -	To Seamen's Hospital, Royal Albert Dock.
Nov. 1	" Clan Graham "	Chancre - 1	Sailor -	To Tilbury Hospital.
" 8	" Auditor "	Venereal Bubo - 1	Seaman -	To Seamen's Hospital, Greenwich.
" 8	" Pendeen "	Syphilis - 1	Ditto -	Ditto.
" 11	" Margha "	Soft Sore - 1	Engineer -	Ditto.
" 17	" Badenia "	Ditto and Gonorrhœa - 1	Seaman -	Ditto.
" 19	" Naldera "	Syphilis - 2	Seamen -	To Tilbury Hospital.
" 20	" Flaminian "	Chancre - 1	Seaman -	To Hospital at Liverpool.
" 25	" Montella "	Gonorrhœal Rheumatism - 1	Ditto -	To Greenwich Hospital.
" 27	" Western Cross "	Gonorrhœa - 3	Seamen -	Ditto.
" 27	Ditto	Syphilis - 1	Seaman -	Ditto.
" 28	" Dago "	Ditto - 1	Passenger -	Reported to Alien Officer.
Dec. 10	" Clan Mackenzie "	Ditto - 1	Asiatic Bhandary -	To Gravesend Hospital.
" 11	" Australport "	Ditto - 1	Crew -	To Seamen's Hospital.
" 18	" Persic "	Ditto - 1	Ditto -	Ditto.
" 18	" Vika "	Bubo - 1	Fireman -	To Hospital in London.
" 21	" Nyanza "	Syphilis - 1	Ditto (Native) -	To Seamen's Hospital.
" 24	" Narkunda "	Soft Chancre - 1	Sailor -	Ditto.
" 24	" Dongola "	Gonorrhœa - 1	Native -	Ditto.
" 26	" Osterley "	Syphilis - 1	Passenger -	} To Hospital near their homes.
		Gonorrhœa - 1	Ditto -	
		Syphilis - 1	O.S. -	
		Gonorrhœa - 1	Steward -	
" 27	" Luella "	Ditto and Orchitis - 1	Crew -	To Hospital at Albert Dock.
" 29	" City of Exeter "	Soft Sores - 1	Asiatic Sailor -	To Connaught Road Hospital.
" 30	" Atreus "	Syphilis - 1	Pr. R.N. Rating -	I/C Naval Authorities.

TABLE XXVI.—MISCELLANEOUS DISEASES, &c., 1920.

Disease.	No. of Cases.	Disease.	No. of Cases.
Appendicitis	2	Brought forward	65
Adenitis	1	Heat Stroke	5
Bronchitis	4	Injury	1
Beri-Beri	2	Leprosy	1
Carcinoma	1	Marasmus	1
Congestion of Lungs	2	Melancholia	1
Chill	1	Opium	1
Cerebral Congestion	1	Piles	1
Convulsions	1	Rheumatism	2
Cancer	3	Renal Calculus	1
Cellulitis of Groin	1	Scabies	2
Diarrhœa	7	Suicide	3
Endocarditis	2	Tonsillitis	1
Gastric Colic	25	Whooping Cough	3
Heart Disease	11	Unknown Cause	1
Hernia	1		
Carried forward	65		

TABLE XXVII.

VESSELS AND PREMISES DISINFECTED, FROM 1ST JANUARY TO 31ST DECEMBER, 1920.

Month.	Reason for Disinfection.															Total number of Disinfections.		
	Cerebro-spinal Meningitis.	Chicken-pox.	Cholera.	Continued Fever.	Diphtheria.	Enteric Fever.	Frysipelas.	Malaria.	Measles.	Influenza.	Plague.	Remittent Fever.	Scarlet Fever.	Small-pox.	Pulmonary Tuberculosis, &c.		Precautionary Measure.	Vessels Fumigated and Sprayed.
January	2	1	..	..	..	..	..	..	..	..	2	..	5	10
February	..	2	..	..	..	2	..	..	1	..	..	..	..	3	3	..	5	16
March	1	..	..	..	1	..	..	..	2	1	..	6	11
April	3	..	..	..	..	..	1	..	1	5
May	1	2	..	..	1	..	..	..	..	..	..	..	..	4
June	1	2	..	..	..	1	..	1	..	..	5
July	2	..	..	..	..	..	1	..	1	4
August	2	..	..	..	..	..	..	..	..	..	..	3	..	3	8
September	..	1	..	..	1	2	..	..	..	..	..	..	..	..	..	..	2	6
October	1	..	1	..	..	..	..	..	..	1	..	1	..	2	7
November	1	..	..	2	..	..	..	1	..	..	..	2	6
December	1	1	..	..	1	..	..	..	..	..	..	..	2	5
Totals	..	3	..	3	5	11	..	1	12	..	1	..	3	5	13	..	30	87

TABLE XXVIII.

NUMBER OF DISINFECTIONS OF EFFECTS, BEDDING, &C., FROM 1ST JANUARY TO 31ST DECEMBER, 1920.

Month.	Reason for Disinfection.													Hospital Bedding, &c.	Total Effects.	Number of times Steam Disinfectant was used.	Disinfected by Fumigation.	
	Cholera.	Chicken-pox.	Cerebro-spinal Meningitis.	Continued Fever.	Diphtheria.	Enteric Fever.	Malaria.	Measles.	Pulmonary Tuberculosis, &c.	Plague.	Influenza.	Scarlet Fever.	Small-pox.					Precautionary Measure.
January	2	1	..	..	..	..	..	..	..	..	1	4	4	..
February	..	1	..	..	1	2	..	2	..	..	1	..	3	..	2	12	6	..
March	1	..	..	2	..	2	5	5	..
April	1	..	..	..	..	3	..	4	8	6	2
May	2	..	1	..	..	1	..	..	..	2	6	4	1
June	1	..	..	1	..	..	..	1	3	3	1
July	2	..	..	..	..	..	..	1	3	2	..
August	2	..	..	..	2	..	..	..	..	..	..	..	4	2	..
September	..	1	..	..	1	2	..	..	..	..	..	..	..	..	1	5	2	..
October	1	..	..	..	1	..	..	..	..	1	..	3	4	2	..
November	1	..	1	..	..	1	..	..	..	3	2	..	..
December	1	..	..	..	..	..	..	..	..	..	1	1	..	..
Totals	..	2	..	3	5	8	..	11	..	1	1	3	5	4	14	57	41	7

EXAMINATION OF RATS.

In connection with change of location of the teaching centre of the London School of Tropical Medicine, Dr. Newham, who made the examinations since the inception of systematic examination of rats in the Port Sanitary District, wrote with regret that he was unable to continue the work under the circumstances. It was recommended that the rat examinations be carried out by the Seamen's Hospital Society through their resident Pathologist at the Royal Albert Dock Hospital, Dr. H. M. Hanschell, and that your Medical Officer make arrangements to that end with the Secretary of the Society and with Dr. Hanschell on the former basis, namely:—

Up to 2,000 rats examined - - - £250
 Each 1,000 after - - - - - £50

The examination to be personally conducted by Dr. Hanschell, or, when necessary, by a substitute approved by the Medical Officer of Health.

In the Appendix will be found analytic tables of the work done by Dr. Hanschell.

TABLE XXIX.—RETURN OF RATS CAUGHT AND DESTROYED DURING 1920.

The entire cost of destroying these rats has been borne by the Shipowners and Port of London Authority.

	Jan.	Feb.	Mar.	April.	May.	June.	July.	Aug.	Sept.	Oct.	Nov.	Dec.	TOTALS
Millwall Dock—													
Warehouses - - -	281	213	380	338	315	354	327	270	306	405	380	299	3,868
Vessels during voyage	10	—	80	82	12	20	64	10	—	—	—	—	278
„ while in dock -	224	272	385	124	208	248	288	337	239	180	291	164	2,960
Surrey Commercial Dk.—													
Warehouses - - -	27	258	166	130	249	174	208	153	116	284	308	203	2,527
Vessels during voyage	—	—	—	—	—	—	—	—	—	—	—	—	—
„ while in dock -	—	—	—	10	—	—	91	—	—	13	—	47	161
Regent's Canal Dock—													
Warehouses - - -	—	—	15	3	8	8	1	—	2	—	—	6	43
Vessels during voyage	—	—	—	—	—	—	—	—	—	—	—	—	—
„ while in dock -	—	—	—	—	—	—	16	—	—	—	—	—	16
St. Katherine's Dock—													
Warehouses - - -	102	65	73	71	97	99	426	69	80	91	98	70	1,341
Vessels during voyage	—	—	—	—	—	—	—	—	—	—	—	—	—
„ while in dock -	—	—	—	—	—	—	25	—	—	—	—	—	25
London Dock—													
Warehouses - - -	208	209	388	343	555	318	184	233	327	511	318	297	3,891
Vessels during voyage	—	—	—	—	—	—	—	—	—	—	—	—	—
„ while in dock -	96	50	11	57	68	25	158	—	75	44	38	13	635
Albert and Victoria Dks.—													
Warehouses - - -	471	510	614	640	867	519	723	471	470	666	421	418	6,790
Vessels during voyage	275	865	624	545	524	853	186	80	587	488	945	441	6,413
„ while in dock -	5,219	3,141	2,703	2,693	3,461	1,454	1,929	2,173	1,499	2,233	2,844	1,888	31,237
West India Dock—													
Warehouses - - -	220	158	203	193	265	104	317	283	243	338	300	232	2,856
Vessels during voyage	27	70	70	—	85	—	12	—	—	32	—	—	296
„ while in dock -	710	432	387	500	434	144	336	411	297	363	258	256	4,528
East India Dock—													
Warehouses - - -	29	29	28	14	23	55	106	77	30	46	54	40	531
Vessels during voyage	—	—	—	—	—	—	—	—	—	—	—	—	—
„ while in dock -	313	54	561	104	164	116	116	91	78	214	174	71	2,056
Tilbury Dock—													
Warehouses - - -	543	424	401	375	511	352	627	447	434	548	416	485	5,563
Vessels during voyage	—	—	—	—	—	—	—	—	64	—	—	—	64
„ while in dock -	594	234	—	199	391	377	430	88	389	192	871	61	3,826
River—													
During voyage - - -	—	—	—	—	—	—	—	—	—	—	—	—	—
While in river - - -	—	—	—	—	—	—	—	—	—	—	—	—	—
TOTALS - - -	9,600	6,984	7,089	6,421	8,237	5,220	6,570	5,193	5,236	6,648	7,716	4,991	79,905

Total from February, 1901, to 31st December, 1919 - - - 1,076,229

Total from 1st January to 31st December, 1920 :—

In Dock Warehouses - - - - -	27,410	}	79,905
On Vessels during voyage - - - - -	7,051		
On Vessels while in Dock and River - - - - -	45,444		

TOTAL - - - 1,156,134

TABLE XXX.—RAT FUMIGATIONS.

Date.	Name of Vessel.	Where fumigated.	No. of rats reported caught after fumigation.
1920.			
Jan. 2-7	"Ajax"	Royal Albert Dock	—
" 6	"Khiva"	Ditto	1,466
" 18	"Grekeden"	East India Dock	—
" 19	"Segura"	Victoria Dock	—
" 29	"Kingsmere"	Bellamy's Wharf	—
Feb. 2	"Leicestershire"	Liverpool	—
" 9	"Sardinia"	Royal Albert Dock	735
" 10	"Antinoe"	Regent's Dock	—
" 14-15	"Tunisian"	Millwall Dock	—
" 16	Ditto	Ditto	—
" 24	"H. K. Hall"	London Dock	—
March 3	"Glenard"	Victoria Dock	—
" 6	"Berrima"	Royal Albert Dock	329
" 12	"Abonema"	West India Dock	230
" 17	"Malta"	East India Dock	—
" 20-21	"Delta"	Ditto	—
" 29	"Dunvegan Castle"	Ditto	—
April 10	"Somali"	Royal Albert Dock	481
July 26	"Amatonga"	Glasgow	—
Aug. 12	"Novara"	Royal Albert Dock	897
" 13	"Roumelian"	Hull	219
" 17	"Rugia"	East India Dock	—
Sept. 5-6	"Arzila"	Victoria Dock	—
Oct. 2-5	"Assaye"	East India Dock	—
" 14	"Warri"	Liverpool	—
" 13-14	"Brandenburg"	Victoria Dock	—
Nov. 19	"Konig F. August"	East India Dock	—
Dec. 13	"Borda"	Royal Albert Dock	562
" 27	"Strathearn"	Rotterdam	36

SUMMARY—Rat Fumigations:—

Port of London	24 Vessels.
Other places	5 "
Total	29 Vessels.

Number of rats reported caught after fumigation 4,955.

TABLE XXXI.—DISINFESTATION OF VESSELS.

Date.	Ship's Name.	Ports at which Disinfestation is alleged to have taken place.	Gas used.	Places alleged to have been Disinfested.
5-7-19	"Devanha"	Sydney	SO ₂	All holds and crew's quarters.
?-11-19	"Elder Branch"	Callao	SO ₂	Holds and quarters.
7-12-19	"Kaisar-I-Hind"	Alexandria	SO ₂	Throughout.
?-7-19	"Clan MacMaster"	New York	HCN	Holds, storerooms and crew's quarters.
?-11-19	"Auditor"	New Orleans	?	?
20-11-19	"Manora"	Bombay	SO ₂	Holds and crew's quarters.
?-11-19	"Segura"	Buenos Ayres	SO ₂	Ditto.
?-11-19	"Maple Branch"	Calloa	SO ₂	Peaks, holds, &c.
?-11-19	"Bendorran"	Yokohama	SO ₂	Holds and quarters.
?-5-19	"Clan Urquhart"	Bombay	SO ₂	Throughout.
?-9-19	"Kathlamba"	New York	HCN	Ditto.
11-11-19	"Nore"	Calcutta	SO ₂	Holds only.
?-11-19	"Colaba"	Ditto	SO ₂	All holds.
?-7-19	"Clan MacBrayne"	New York	HCN	Throughout.
25-6-19	"Krasnoiasik"	Port Said	SO ₂	All holds.
6-8-19	Ditto	Melbourne	SO ₂	Ditto.
?-12-19	"Hunnic"	Alexandria	SO ₂	Holds and quarters.
?-4-19	"Eastern Queen"	Portland, Maine	?	?
?-11-19	"Bucigi"	Constantinople	SO ₂	Holds and quarters.
?-10-19	"Cordoba"	Melbourne	SO ₂	All holds and troop decks.
?-9-19	"Astronomer"	New Orleans	HCN	Holds and crew's quarters
?-10-19	"Roon"	Singapore	SO ₂	All holds.
2-11-19	"Nerbudda"	Calcutta	SO ₂	Ditto.
?-11-19	"Cherry Branch"	Peru	SO ₂	All holds and living quarters.
?-9-19	"Euryades"	New York	HCN	Holds only.
16-12-19	"Nankin"	Calcutta	SO ₂	Ditto.

DISINFESTATION OF VESSELS—continued.

Date.	Ship's Name.	Ports at which Disinfestation is alleged to have taken place.	Gas used.	Places alleged to have been Disinfested.
?-11-19	" Plassy "	Newcastle, N.S.W.	SO ₂	Throughout.
?-10-19	" Adolph Woerman "	Sydney	SO ₂	Holds.
?-11-19	" Hatarana "	Calcutta	SO ₂	All holds, &c.
11-12-19	" Idomeneus "	Kobe	CO ₂ CO	Holds only.
24-1-20	" Benoni "	Suez	?	?
?-12-19	" Graciana "	?	SO ₂	?
?-11-19	" Alps Maru "	Kobe	SO ₂	Holds and quarters.
?-9-19	" Chakrata "	London	SO ₂	Holds and crew's quarters.
18-7-19	" Port Inglis "	New York	?	Throughout.
?-12-19	" Abercorn "	Genoa	SO ₂	Holds.
?-12-19	Ditto	St. Vincent		Living quarters and stores.
?-12-19	" Novara "	Yokohama	CO ₂ CO	Holds.
?-12-19	" Winterton "	Virginia	SO ₂	Throughout (?).
?-12-19	" Cento "	Bahia Blanca	SO ₂	Holds and quarters.
20-8-19	" Konig F. August "	Sydney	?	Holds and troop decks.
3-2-20	" Nellore "	Marseilles	SO ₂	Holds.
9-12-19	" Kashgar "	Moji	SO ₂	All holds and crew's quarters.
?-12-19	" Kliest "	Singapore	SO ₂	Ditto.
?-7-19	" City of London "	Belfast	SO ₂	Ditto.
?-11-19	" Anne "	Cuba	SO ₂	All holds and storerooms and peaks.
?-9-19	" Politician "	Galveston, U.S.A.	SO ₂	Throughout.
?-9-19	" Neleus "	Liverpool	SO ₂	All holds.
28-11-19	" Teirisias "	Moji	SO ₂	Throughout.
21-12-19	" Tras-os-Montes "	Hong Kong	SO ₂	Holds.
17-12-19	" Helenus "	Shanghai	SO ₂	Ditto.
16-1-20	" Morvada "	Karachie	SO ₂	Ditto.
?-3-19	" Clan Stuart "	Genoa	SO ₂	Throughout.
?-10-19	" City of Marseilles "	Bombay	SO ₂	All holds.
?-2-19	" Mopani "	New Orleans	SO ₂	?
?-11-19	" Griqua "	Glasgow	SO ₂	Holds and storerooms.
3-1-20	" Commonwealth "	Sydney	SO ₂	All holds.
?-1-20	" Chiverston "	Buenos Ayres	SO ₂	Throughout.
12-2-20	" Karmala "	Calcutta	SO ₂	Holds.
?-1-20	" Goldenfels "	Singapore	SO ₂	All holds.
19-9-19	" Prinz Ludwig "	Sydney	SO ₂	Holds and crew's quarters.
6-1-20	" Marathon "	Ditto	SO ₂	Holds.
6-1-20	Ditto	Ditto	HCN	Passenger accommodation.
?-1-20	" Somali "	Koji	SO ₂	Holds.
15-11-19	" Clan Kenneth "	London	SO ₂	Holds, store and crew's quarters.
20-9-19	" St. Francis "	New York	HCN	Throughout.
27-1-20	" Nagoya "	Kobe	SO ₂	Kobe.
16-4-19	" Derbyshire "	Sydney	SO ₂	All holds.
?-2-20	" Clan MacIntyre "	Calcutta	SO ₂	Native crew's quarters and storerooms.
?-3-20	" Khyber "	Ditto	SO ₂	Throughout.
?-10-19	" Moora "	Karachi	SO ₂	Ditto.
?-3-20	" War Breeze "	Baltimore	SO ₂	Holds, peaks, storerooms and living quarters.
1-3-20	" Eichsfeld "	Cuba	SO ₂	Ditto.
?-12-19	" Defender "	New Orleans	HCN	Throughout.
?-8-19	" City of Baroda "	Glasgow	SO ₂	Ditto.
?-3-20	" Iyo Maru "	Marseilles	SO ₂	Holds and quarters.
25-1-20	" Laomedon "	Kobe	CO ₂ CO	Holds.
?-3-20	" Ayleston "	Santiago	SO ₂	Holds, peaks, storerooms and living quarters.
?-5-19	" Macedonia "	Newport	SO ₂	Throughout.
?-6-19	" City of Sparta "	Liverpool	SO ₂	Ditto.
?-12-19	" Rhienland "	Singapore	SO ₂	Ditto.
3-3-20	" Nevasa "	Calcutta	SO ₂	Ditto.
17-4-20	Ditto	Marseilles	SO ₂	Ditto.
16-2-20	" Bremen "	Sydney	SO ₂	Ditto.
?-3-20	" Whately Hall "	Sagua la Grand	?	Holds, peaks and stores.
?-12-19	" Explorer "	New Orleans	HCN	Throughout.
?-3-19	Ditto	Calcutta	Do. (?)	Storerooms.
?-6-19	" Warwickshire "	Sydney	SO ₂	Troop decks and holds.
14-2-20	" Beltana "	?	SO ₂	All holds.

DISINFESTATION OF VESSELS—*continued.*

Date.	Ship's Name.	Ports at which Disin- festation is alleged to have taken place.	Gas used.	Places alleged to have been Disinfested.
7-7-19	"Clan MacEwen"	Madagascar	SO ₂	Throughout.
7-12-19	"Inventor"	Galveston	HCN	Holds and crew's quarters.
7-2-20	"Runic"	Sydney	SO ₂	Holds and storerooms.
?	"Politician"	Norfolk, Vir.	SO ₂	?
21-5-20	"Clan MacBride"	Havre	SO ₂	All holds.
20-5-19	"Konig F. August"	Sydney	SO ₂	Holds.
22-3-20	"Teelikai"	Hong Kong	SO ₂	Ditto.
16-2-20	"Pembrokeshire"	Shanghai	CO ₂ CO	Ditto.
?	Ditto	At Sea	SO ₂	Holds and crew's quarters.
3-3-20	"Chanda"	Calcutta and Mar- seilles	SO ₂	Holds.
7-3-20	"Persic"	Sydney	SO ₂	Storerooms and crew's quarters.
7-4-20	"Leicestershire"	Rangoon	SO ₂	Throughout (ex. pass. accom.).
15-3-20	"Friedrichsrub"	Sydney	SO ₂	Ditto.
21-3-20	"Mentor"	Shanghai	CO ₂ CO	Holds and crew's quarters.
21-5-20	"Banca"	Marseilles	SO ₂	All holds.
7-12-19	"Margha"	Karachi	SO ₂	Throughout (ex. pass. accom.).
29-3-20	"Khiva"	Moji	CO ₂ CO	Holds.
7-4-20	"Orontes"	Brisbane	SO ₂	2nd and 3rd holds, 3rd class passenger accommodation.
7-4-20	"Clan MacArthur"	Sydney	SO ₂	Throughout.
7-4-20	"Romney"	Rosario	SO ₂	Holds.
7-6-19	"Hindoo"	Hull	SO ₂	Throughout.
7-4-20	"Morea"	Marseilles	SO ₂	Ditto.
7-12-19	"Hurunian"	New Orleans	HCN	Ditto.
24-3-20	"Lycan"	Shanghai	CO ₂ CO	Holds and crew's quarters.
4-4-20	Ditto	Yokohama	SO ₂	Ditto.
13-2-20	"Knight of the Garter."	Shanghai	CO ₂ CO	Holds and storerooms.
7-5-20	"Berlin"	Bombay	SO ₂	All holds.
7-4-20	"Orvieto"	Sydney	SO ₂	Ditto.
7-4-20	"Grewellard"	Calcutta	SO ₂	Ditto.
7-5-20	Ditto	Marseilles	SO ₂	Ditto.
21-3-20	"Glenriffe"	Shanghai	CO ₂ CO	Holds.
7-4-20	"Suevic"	Brisbane	SO ₂	All holds.
20-4-20	"City of Norwich"	Shanghai	HCN	Throughout.
16-4-20	"Nore"	Moji	CO ₂ CO	Holds.
4-5-20	"Nerbudda"	Calcutta	SO ₂	Ditto.
7-5-20	"Ceramic"	Sydney	SO ₂	Throughout.
13-5-20	"Tydeus"	Shanghai	CO ₂ CO	All holds and crew's quarters.
7-5-20	"Orsova"	Brisbane	SO ₂	All holds.
7-3-20	"Architect"	Tampa	SO ₂	Throughout.
25-6-20	"Gamara"	Calcutta	SO ₂	Holds, crew's quarters and storerooms.
7-8-10	"Prinz Ludwig"	Sydney	SO ₂	Holds and crew's quarters.
7-4-20	"La Place"	Newport News	SO ₂	Throughout.
29-4-20	"Stentor"	Nagasaki	CO ₂ CO	Ditto.
7-5-20	"Kazembe"	Hong Kong	SO ₂	Ditto.
7-5-20	"Tras-os-Montes"	Kobe	HCN	Ditto.
4-6-20	"Kashgar"	Calcutta	SO ₂	Ditto.
11-7-20	Ditto	Marseilles	SO ₂	1, 2, 3 and 4 holds.
7-1-20	"Teiresias"	Moji	SO ₂	Holds, storerooms and crew's quarters.
7-7-20	"Lancashire"	Marseilles	SO ₂	1 and 6 holds.
23-3-20	"Neleus"	Liverpool	HCN	Holds.
7-3-20	"Delta"	London	SO ₂	Throughout.
7-6-20	"Cherry Branch"	Peru	SO ₂	?
7-10-19	"New Georgia"	Bahia Blanca	?	Holds.
1-6-20	"Benleugh"	Java	SO ₂	Throughout.
7-10-19	"New Georgia"	Galveston	HCN	Holds.
7-5-20	"Naldera"	Sydney	SO ₂	All holds.
7-7-20	"Falermian"	Marseilles	SO ₂	Ditto.
7-3-20	"Glenelg"	New Orleans	SO ₂	?
7-6-20	"Cherry Branch"	Chili	SO ₂	Throughout.
26-5-20	"Wehehe"	Sydney	SO ₂	Holds.
24-7-20	"Gandara"	Marseilles	SO ₂	Ditto.
7-5-20	"Wayfarer"	Fremantle	SO ₂	All holds.
7-11-19	"Vika"	Philadelphia	SO ₂	Holds.
7-5-20	"Euripides"	Brisbane	SO ₂	All after-holds.

DISINFESTATION OF VESSELS—continued.

Date.	Ship's Name.	Ports at which Disin- festation is alleged to have taken place.	Gas used.	Places alleged to have been Disinfested.
2-7-20	" Elbe "	- Cuba -	- SO ₂	Holds.
2-4-20	" Amasis "	- Boston -	- SO ₂	Holds and quarters.
29-5-20	" Nellore "	- Kobe -	- SO ₂	Holds.
30-7-20	Ditto	- Marseilles -	- SO ₂	Ditto.
2-6-20	" Inaba Maru "	- Kobe -	- SO ₂	Holds and quarters.
11-5-20	" Lacretes "	- Hong Kong -	- SO ₂	Holds and crew's quarters.
2-3-20	" Elswick House "	- Messina -	- SO ₂	Holds and quarters.
27-5-20	" Carmarthenshire "	- Yokohama -	- CO ₂ CO	Holds.
29-5-20	" Berrima "	- Sydney -	- SO ₂	Ditto.
2-5-20	" Yeboshi Maru "	- Yokohama -	- SO ₂	Throughout.
28-6-20	" Agapenor "	- Ditto -	- SO ₂	Holds.
2-6-20	" Noelle "	- Norfolk -	- SO ₂	Holds and quarters.
2-7-20	" Syria "	- Bombay -	- SO ₂	All holds.
2-4-20	" City of Baroda "	- Dunkirk -	- SO ₂	Ditto.
6-7-20	" Heseus "	- Shanghai -	- CO ₂ CO	Holds.
29-7-20	" Frieberg "	- New Orleans -	- SO ₂	Ditto.
2-7-20	" Maindv House "	- Port Arthur -	- SO ₂	Ditto.
7-5-20	" Khyber "	- Sydney -	- SO ₂	Ditto.
2-12-19	" ClanMacWilliam "	- New York -	- HCN	Throughout.
22-7-20	" China "	- Sydney -	- SO ₂	All holds.
14-7-20	" Nagoya "	- Calcutta -	- ?	?
27-8-20	Ditto	- Marseilles -	- ?	?
29-6-20	" Devanha "	- Moji -	- ?	?
2-9-20	Ditto	- Marseilles -	- ?	?
14-8-20	" West Zucker "	- ? -	- HCN	Throughout.
5-8-20	" Naples Maru "	- Java -	- SO ₂	Ditto.
2-12-20	" Kaisar-I-Hind "	- Alexandria -	- SO ₂	Ditto.
28-7-20	" Chanda "	- Bombay -	- SO ₂	Holds.
2-12-19	" Himalaya "	- Marseilles -	- SO ₂	Ditto.
2-8-20	" Manora "	- Calcutta -	- SO ₂	Throughout.
2-12-19	" City of Delhi "	- New York -	- HCN	Ditto.
2-8-20	" Orvieto "	- Brisbane -	- SO ₂	All holds and 3rd class pass. accommodation.
2-4-20	" Oanfa "	- New York -	- SO ₂	Holds.
2-5-20	" Kalyan "	- Bombay -	- SO ₂	All holds.
30-9-20	Ditto	- Marseilles -	- SO ₂	Ditto.
5-10-20	" Plassey "	- Ditto -	- SO ₂	Holds.
17-8-20	" Protesilaus "	- Hong Kong -	- SO ₂	Holds and crew's quarters.
2-8-20	" Ashworth "	- Newport News -	- SO ₂	Holds and quarters.
28-7-20	" Lahore "	- Moji -	- CO ₂ CO	Holds.
4-10-20	Ditto	- Marseilles -	- SO ₂	Ditto.
2-2-20	" Ashwin "	- Catania -	- SO ₂	All holds.
2-4-20	" Clan Macbeth "	- Genoa -	- SO ₂	Throughout.
7-9-20	" Narkunda "	- Sydney -	- SO ₂	Holds.
2-9-20	Ditto	- Ditto -	- SO ₂	Crew's quarters.
20-7-20	" Glenamoy "	- Shanghai -	- SO ₂	Holds.
2-9-20	" Nocalulu "	- New Orleans -	- SO ₂	Whole ship.
2-2-20	" Batjan "	- Amsterdam -	- SO ₂	Throughout.
25-8-20	" Lycaon "	- Kobe -	- CO ₂ CO	Holds.
2-8-20	" City of Shanghai "	- Calcutta -	- SO ₂	Throughout.
2-3-20	" Delta "	- Bombay -	- SO ₂	Ditto.
2-3-20	" Morea "	- Sydney -	- SO ₂	All holds and storerooms.
9-9-20	" Achilles "	- Shanghai -	- CO ₂ CO	Holds.
2-7-20	" City of Cairo "	- Dunkirk -	- SO ₂	All holds.
16-8-20	" Hofuku "	- Kobe -	- SO ₂	Holds.
2-7-20	" Yayoi Maru "	- Singapore -	- ?	Holds, peaks and all living quarters.
2-9-20	" Poplar Branch "	- Mollendo -	- SO ₂ (?)	Holds and quarters.
19-9-20	" Chakrata "	- Calcutta -	- SO ₂	Holds, crew's quarters and storerooms.
27-10-20	Ditto	- Marseilles -	- SO ₂	Holds only.
2-9-20	" Orsova "	- Sydney & Melbourne -	- SO ₂	?
2-9-20	" Tactician "	- Calcutta -	- SO ₂	Throughout.
2-8-20	" Medic "	- Brisbane -	- SO ₂	All holds and stores.
31-8-20	" Jeypore "	- Moji -	- CO ₂ CO	Holds.
22-10-20	Ditto	- Marseilles -	- SO ₂	Ditto.
2-4-20	" Margha "	- Bombay -	- SO ₂	Throughout.
2-8-20	" Swazi "	- Kobe -	- CO ₂ CO	Ditto.
2-5-20	" Kanas "	- New York -	- HCN	Ditto.

DISINFESTATION OF VESSELS—*continued.*

Date.	Ship's Name.	Ports at which Disinfestation is alleged to have taken place.	Gas used.	Places alleged to have been Disinfested.
1-8-20	" Khiva "	Moji	CO ₂ CO	Holds.
3-11-20	Ditto	Marseilles	SO ₂	Ditto.
2-7-20	" Sierra Roja "	New York	SO ₂	Holds, storerooms, peak and living quarters.
2-8-20	" Themistocles "	Brisbane	SO ₂	All holds except insul.
2-10-20	" Architect "	San Francisco	HCN	Throughout.
2-8-20	" Benarty "	Nagasaki	SO ₂	Holds and storerooms.
2-9-20	" Crostafels "	Singapore	SO ₂	?
3-9-20	" Chihebana "	Calcutta	SO ₂	Holds.
21-9-20	" Nankin "	Moji	CO ₂ CO	Ditto.
2-7-20	" City of Manchester "	Dunkirk	SO ₂	All holds.
2-10-20	" Naldera "	Sydney	SO ₂	Ditto.
2-8-20	" Carnarvonshire "	Shanghai	CO ₂ CO	Ditto.
2-1-20	" Karmalla "	Calcutta	SO ₂	Throughout.
2-5-20	" Clan MacBride "	Havre	SO ₂	All holds.
2-11-19	" Griqua "	Glasgow	SO ₂	Ditto.
2-11-20	Ditto	Marseilles	SO ₂	Ditto.
2-9-20	" Nowshera "	Calcutta	SO ₂	All holds and storeroom.
2-6-20	" Eemdyke "	Rotterdam	SO ₂	Throughout.
2-10-20	" Ormonde "	Brisbane & Sydney	SO ₂	1-3 holds, 3rd class passenger accommodation.
2-6-20	" Kalmo "	New York	HCN	All holds.
2-11-20	Ditto	Marseilles	SO ₂	Ditto.
3-10-20	" Kashgar "	Moji	CO ₂ CO	Holds.
22-5-20	Ditto	Marseilles	SO ₂	Ditto.
9-10-20	" Gamara "	Calcutta	SO ₂	Ditto.
22-11-20	Ditto	Marseilles	SO ₂	Ditto.
2-9-20	" City of Winchester "	Sydney	SO ₂	Throughout.
2-5-20	" Director "	New Orleans	HCN	All holds, storerooms and crew's quarters.
11-7-20	" Syria "	Bombay	SO ₂	Holds.
2-10-20	" Polladern "	Batavia	?	Holds, storerooms, &c., and all living quarters.
2-10-20	" Burma "	Java	SO ₂	Throughout.
15-7-20	" Poona "	Sydney	SO ₂	All holds.
13-10-20	" Keemun "	Shanghai	CO ₂ CO	Holds.
3-9-20	" Juniper "	Yokohama	SO ₂	Holds and crew's quarters.
2-9-20	" Kifunizan Maru "	West Indies	SO ₂	Holds and quarters.
2-9-20	" Caroline Maru "	Kobe	?	Ditto.
2-11-20	" Fantee "	Alexandria	SO ₂	Holds and storerooms.
2-9-20	" Orator "	San Francisco	HCN	Throughout.
2-10-20	" Greenland "	Menado	SO ₂	Holds and quarters.
2-12-20	" Clan Lamont "	Havre	SO ₂	Holds.
2-9-20	" Persic "	Brisbane	SO ₂	Ditto.
2-9-20	" Clan MacKensie "	At Sea	SO ₂	?
2-12-20	" Kaisar-I-Hind "	Alexandria	SO ₂	Throughout.
2-10-20	" Palm Branch "	Ilo, Peru	SO ₂	Holds and quarters.
2-10-20	" Sesostris "	Batavia	?	Holds, peaks, living quarters and stores.
2-11-20	" Minooka "	New Orleans	?	Throughout.
24-9-20	" Antenor "	Java	SO ₂	Holds and crew's quarters.
2-6-20	" Matoppo "	New York	HCN	Throughout.
2-9-20	" Wiltshire "	Brisbane	SO ₂	All holds.
2-10-20	" Warwickshire "	Rangoon	SO ₂	Holds and storerooms.
2-10-20	" Clan Macpee "	Chittagong	SO ₂	Throughout.
7-10-20	" Gleniffer "	Shanghai	CO ₂ CO	Holds.
16-10-20	" Nyanza "	Calcutta	SO ₂	Ditto.
2-11-20	" Paratos "	Kustendje	SO ₂	Holds and quarters.
2-9-20	" Tropic "	Brisbane	SO ₂	Throughout.
15-10-20	" Demosthenes "	Ditto	SO ₂	5, 6, and 7 holds.
2-10-20	" Heldredale "	Norfolk, Virginia	SO ₂	Holds and quarters.
2-6-20	" Dongolia "	London	SO ₂	Throughout.
2-8-20	" Narkunda "	Sydney	SO ₂	Holds and crew's quarters.
2-11-20	" Osterley "	Ditto	SO ₂	Some holds, 3rd class passen. accommodation and quarters.
2-11-20	Ditto	Ditto	HCN	Ditto.
2-10-20	" Koningen Luise "	Ditto	SO ₂	Throughout.
2-10-20	Ditto	Ditto	HCN	Crew's quarters.
2-2-20	" City of Exeter "	Hull	SO ₂	All holds and crew's quarters.
2-6-20	Ditto	Marseilles	SO ₂	Ditto.

Vessels reported to have been fumigated at places abroad and during the voyage, 284.

Lethal gas used :—

SO ₂	213
CO ₂ CO	26
Hydrocyanic acid gas	26

s.s. "C." was going from B. to N. and therefore had to be fumigated. It is credibly reported to the Inspector of this Authority that the ship's cat came mewing out of the hold on opening out after fumigation. In another case two small tins of sulphur in each hold met requirements at the port of C. This illustrates :—

I.—The necessities of certificates of fumigation stating the exact procedure followed. The mere statement of fumigation having been carried out at any port conveys no guarantee of disinfestation in the absence of such a certificate.

II.—The tendency to farce in routine fumigation.

RAT AND MICE DESTRUCTION ACT.

The Act is of value to the Port Sanitary Authority in that it embodies all the principles of the Ministry of Food Rat Order, as amended in 1919 in accordance with the request of the Port of London Sanitary Authority, and renders these statutory and permanent.

The following is a short analysis of this Act :—

Section I.—Necessary and reasonably practicable steps must be taken on owner or occupier for preventing land from becoming infected. The penalty for failure is 20*l*.

Section II.—(1) The Port Sanitary Authority enforces this Act in its district. The only exception in the jurisdiction being the London County Council sludge boats.

(2) The expenses incurred shall be defrayed in the case of the Port Sanitary Authority as part of the expenses of the Port Sanitary Authority.

Section III.—(1) The Board of Agriculture and Fisheries steps in on the failure of an Authority to enforce the Act, empowering, by order, some other Authority to enforce it.

(2) The expenses so incurred by the Board are to be paid by the Authority in default.

(3) The Board's statement in an order, that the Authority has failed to enforce the Act, is "Conclusive evidence of such default."

Section IV.—The Local Authority enforcing the Act may by public notice within its area give instructions as to the most effective methods of destruction.

Section V.—(1) The Local Authority, on failure of the occupier to carry out Section I., may either—

(a) Serve a notice requiring steps to be taken as prescribed in the notice.

(b) Enter on the land after twenty-four hours' previous notice to the occupier and take such steps as are necessary, and may recover any reasonable expenses summarily as a civil debt.

(2) Collective action is to be secured as far as possible in enforcing paragraph 1.

(3) The powers of a Local Authority may be exercised by any committee of the Local Authority to which the exercise of the powers may be delegated.

(4) Any person authorised in writing by a Local Authority may enter any land of the district to inspect, or enforce the Act. If so required such person must produce the document by which he is authorised.

(5) Obstruction incurs a fine not exceeding 20*l*.

Section VI.—(1) This Act applies to a vessel as if the vessel were land. The Master is the occupier.

(2) The Local Authority may by notice served on the Master require him to take necessary and reasonably practicable steps for preventing escape of rats from ship to shore under a 20*l*. penalty.

Section VII.—(1) Regulates prosecutions.

(2) Notices in any proceedings under the Act are signed by the Clerk of the Local Authority.

Section VIII.—The expression "Occupier" means, in the case of land not occupied by a tenant, the owner.

The expression "Land" includes buildings and any other erection and any cellar, sewer, drain or culvert.

Section IX.—Applies to Scotland and Ireland.

Section X.—Saves all existing powers, to which the Act is in addition and not in derogation.

Section I.—Notices may be served personally or by registered post.

Section XII.—The short title of the Act—Rat and Mice Destruction Act, 1919.

The expenses of the Port Sanitary Authority, the Local Authority in the carrying out of this Act, are included in and covered by those of their customary work.

As Inspectors for the purposes of this Act your Sanitary Inspectors can hardly be bettered. It has always been one of their most important duties to inquire into the

state of their districts with regard to rattiness, and with the application of the powers to ships this inspection can be extended to deal with ships, these being a source of supply of rats to the district ashore.

With the duty of rat destruction on ships the expense now falls on the person in default, namely, the owner or occupier, who is also primarily the person benefited by deratisation; whereas, formerly, the cost of enforcing disinfection of a ship on which Rat Plague was not a known factor, would fall on the Port Sanitary Authority. The position is such that the obligations in this great measure of Plague precaution are widely diffused instead of being confined to an officer of an Authority.

It is necessary that under Section V. a definite authorisation be given in writing to each person empowered under this Act to enter on land.

Your Medical Officer recommended that in case of possible proceedings this authorisation should be duly made, by means of a written document signed on behalf of the Local Authority, to—

Your Medical Officer of Health;
The Assistant Medical Officers; and
The Sanitary Inspectors.

The Ministry of Food Rats Order, 1918, as amended, was revoked as from February 4th, 1920.

CONGRESS OF THE ROYAL SANITARY INSTITUTE AT BIRMINGHAM.

The Port of London Sanitary Authority was represented at Birmingham by your Chairman, Mr. Walter Fortescue, J.P., and your Medical Officer throughout the period of the Congress in July. The section dealing with Rat Destruction was among those of interest to your representatives. Your Medical Officer contributed and read a short paper on ship rats emphasising the following points:—

- (1) Rats on ships are a standing menace to public health by reason of Plague.
- (2) The conditions of excessive rattiness are ample stocks of food constantly available to the rat and undisturbed nesting facilities.
- (3) These conditions were fulfilled to excess on ships and on shore during the war. War conditions no longer operating, the result will be a reduction of the excessive rattiness and danger of Plague on ships.
- (4) The removal of food stuffs from a ship leads to a change of quarters by the rats, and attempted disinfection should anticipate this change. The fumigation must follow *immediately* on discharge of cargo.
- (5) All measures other than fumigation are merely palliative.
- (6) Fumigation by means of Sulphur Dioxide is so simple as to require no special skill, and should commend itself to shipping companies as a domestic measure.
- (7) The part of a Port Sanitary Rat Officer under the Rat and Mice Destruction Act should be one of effective supervision of methods used by the occupier of a ship, not the actual work of destruction.
- (8) Man being an inimical environmental factor in the life of rats, the enlistment, education and, if necessary, coercion of the many rather than the employment of a few in actual work of rat destruction, is productive of the best results. Appointment of special rat catchers in ports by the Sanitary Authorities is therefore to be deprecated.

RATS.

Your Medical Officer approached the Port of London Authority in the matter of Rats as follows. The correspondence is self-explanatory, and indicates the standpoint from which the question should in his opinion be approached in future:—

9th November, 1920.

The Dock and Warehouse Superintendent,
The Port of London Authority,
109, Lea'enhall Street, E.C.

SIR,

RATS IN THE DOCKS.

The continuous effort put forward in the direction of rat suppression by the Port of London Authority has always been a matter of satisfaction to the Port Sanitary Authority in view of possible infection of the docks by Bubonic Plague through rat infections on ships. I think it is largely due to the resultant separation of the rats present into discontinuous colonies and to the thinning of these, that no spread has recently been observable in the docks, when from time to time infections have reached the shore from ships.

As you are aware, the Ministry of Food Rat Orders as amended in 1919, and now the Rat and Mice Destruction Act which replace those Orders, constituted that voluntary effort a duty, and also conferred duties and powers on the Port of London Sanitary Authority in connection with the rats ashore and on ships in the Port Sanitary District.

The very cordial interrelation of the officers of the respective Port Authorities concerned and the methods hitherto fruitful are not disturbed by the change of aspect which the several duties imposed imply.

I would bring to your notice the appointment by the Port Sanitary Authority of myself, the Assistant Medical Officers and each of the Sanitary Inspectors in this Authority as Rat Officers. There is, therefore, now a Statutory Rat Officer in each dock—the Sanitary Inspector, whose functions would be—

- (1) The collection of all possible information with regard to the rats in his district.
- (2) The searching for conditions which lead to and maintain rattiness.
- (3) To bring the result of his investigation to the notice of a responsible officer of the Port Authority and to me.

I would suggest that there be some one officer in each dock to whom the rat officer of this Authority might look for information, and who would see that the whole area under his supervision moves toward a freedom from the pest along lines which, on full consideration and agreement between the Authorities, would seem likely to give a permanent result; and that there should be subdivisions in each dock area under junior officers, who should be responsible for the maintenance of trapping, setting of poison baits, and carrying out other minor methods of harassing, such as temporary stopping of runs, &c. Such an organisation is, I understand already in existence, and only needs strengthening and direction.

As to the broad principles on which infestation may be overcome, I think they are all in practice in various docks. The foremost is an internal and external proofing of places of storage of food, wherever these are situated, by concrete flooring and iron sheeting of pervious walls. In particular, every refectory should be on an impervious base.

In the Royal Albert Dock the system of sanitary conveniences on the North side has a bearing on the rat problem. The laying down of a water carriage system would aid in rendering the banks less ratty. The present cesspools supply food on the spot while the banks supply lodging. At this point, however, the effects of the ratcatchers' work is reported to be marked.

The fact that four ships left London infected with Plague last year, all from about the neighbourhood of No. 15 Shed in the Royal Albert Dock, suggests the absolute necessity of keeping the docks rat proof. Since it is probable that one, or perhaps two, of these ships brought the infection to this spot, where interchange of rats took place, I notice with interest the inclusion in the draft bye-laws of your Authority the principle of rat-guarding all vessels. Insistence on the observation of this measure will aid in the prevention of infestation as also of infection.

It is the intention of the Port Sanitary Authority that the extended powers conveyed, as regards ships, in the Port Sanitary Authorities (Infectious Diseases) Regulations, 1920, shall act in the same direction.

The advance toward rat proofing of all food storage places implies a large programme. It is not suggested that any drastic changes should be forthwith carried through, but rather that steady progress towards rat proofing be maintained. In all new buildings, and in all renovations against dilapidations, structural rat proofing should receive its due consideration, while obviously ratty places should be temporarily treated by palliatives until the convenient time for complete proofing.

As an illustration I would cite the refectory in connection with, or practically surrounded by, Messrs. Green and Silley Weir's premises on the North Quay opposite Nos. 13 and 15 Sheds, Royal Albert Dock. A month ago the occupier informed me of a mortality—seven dead rats had been found on these premises a few months previously—constituting just the suspicious circumstances which should have been known to me earlier; but the point here is that the structure and state of the refectory is one that calls for change as soon as possible.

A similar dilapidation is instanced in No. 7, H.M. Customs Office, Commercial Yard West, in the Surrey Commercial Dock, affording that shelter in proximity to foodstuffs which is the condition for inevitable rattiness.

It is not my intention here to point to the several places where ratty conditions are obvious and removable. On survey of the docks I propose to bring these to your notice listed, and with suggestions for your consideration which balance economy in money and labour against the object in view—the preservation of a Plague-free port.

Meanwhile I shall be glad if you will let me know the responsible officers with whom the rat officers may co-operate, and the precise present organisation for dealing with rats, for each dock; also to whom the Port Sanitary Authority should look for amelioration of rat conditions if these be found in buildings or areas let out to tenants.

I am, SIR,

Your obedient Servant,

(Signed) W. M. WILLOUGHBY,

*Medical Officer of Health,
Port of London.*

TABLE XXXIII.

QUANTITY AND DESCRIPTION OF UNSOUND FOOD SEIZED AND DESTROYED FOR THE
YEAR ENDING 31ST DECEMBER, 1920.

	Original packages.		Sundry quantities by weight.				Loose Articles.		Approximate Total weight of Goods destroyed.							
	No.	Description.	Tons.	cwts.	qrs.	lbs.	No.	Description.	Tons.	cwts.	qrs.	lbs.				
MEAT—																
Fresh and Frozen—																
Beef - - - -	1,524	quarters & crops	16	16	3	19	1,062	bags & pieces	116	1	3	2				
Mutton and Lamb - -	2,758	carcasses	24	7	3	24	2,019	"	122	12	0	19				
Veal, Pork and Offal -	840	various	1	5	2	19	463	various	46	13	3	12				
Sausages - - - -	2,765	cases, &c.	1	4	1	27	...	...	70	5	3	12		
Preserved—																
Tinned - - - -	2,195	cases	...	...	...	...	5,921	tins	88	6	2	19
Smoked and Salted -	36	boxes	...	...	...	...	...	...	8	7	3	20
RABBITS—																
Frozen - - - -	4,639	crates, cases	...	15	0	15	...	...	125	5	1	26		
Tinned - - - -	148	cases	...	...	...	...	2,702	tins	5	18	0	12
POULTRY and GAME																
Frozen - - - -	10	bags	...	...	...	...	8	Ducks, &c.	...	14	1	14
FISH—																
Preserved, Dried - -	58	brls., bxs.	3	0	2	11	...	...	5	1	3	2		
" Tinned and Bottled -	45	cases	...	...	...	...	498	tins	1	2	3	0
Shell - - - -	1	case	...	...	...	...	...	...	...	2	0	0
Wet - - - -	9	cases, &c.	...	...	...	...	...	...	0	9	2	7
FRUIT—																
Fresh - - - -	7,580	various	86	0	0	0	...	...	543	2	3	7		
Preserved, Dried - -	9,362	various	...	...	...	...	...	...	2,032	9	3	20
" Tinned and Bottled -	1,887	cases	...	...	...	...	8,058	tins	89	2	3	1
" Jam and Marmalade -	373	cases	...	...	...	...	42	tins	11	18	2	1
VEGETABLES—																
Fresh - - - -	1,190	bags, &c.	14	0	0	0	...	...	66	0	2	0		
Preserved, Dried - -	92	bags	2	0	0	0	...	...	8	7	0	21		
" Tinned - - - -	1	box	...	...	...	...	674	tins	1	1	0	20
NUTS—																
Whole - - - -	746	bags	...	3	2	11	...	...	32	3	2	11		
Desiccated and Shelled -	...	...	...	...	...	...	...	...	...	...	...	...
PROVISIONS—																
Tea - - - -	274	packages	...	...	...	...	...	...	13	14	0	0
Coffee - - - -	1,122	bags	...	6	1	22	...	...	68	1	1	25		
Cocoa - - - -	19	case, &c.	...	...	...	...	...	...	...	18	3	14
Butter, Cheese, Lard, Margarine	523	boxes, &c.	...	9	1	4	...	...	21	10	3	16		
Condensed Milk - -	13,518	cases, &c.	...	...	3	12	173	tins, &c.	489	10	2	8		
Prepared Foods - -	311	cases	...	...	...	...	2	tins	7	6	0	0
Biscuits and Confectionery -	215	cases, &c.	...	...	...	...	...	...	32	9	0	21
Sugar - - - -	...	...	...	...	...	...	...	...	...	...	...	...
GRAIN—																
Wheat, Maize, Barley, Rice, &c.	495	bags, &c.	75	15	1	17	...	...	77	0	1	17		
MEAL and FLOUR - -																
CONDIMENTS and SPICES -	48	bags	...	...	...	...	...	...	2	6	1	19
EGGS - - - -	31	pkgs., &c.	...	...	...	...	...	...	1	11	0	0
EGG YOLK - - - -	50	cases	...	...	...	...	...	...	5	13	0	20
DRUGS - - - -	...	...	...	...	...	...	...	...	...	...	...	...
SUNDRIES - - - -	2	cases	...	...	...	...	...	...	...	1	2	1
	107	pkgs., &c.	...	...	...	...	...	...	6	12	0	3
TOTAL - - - -	52,974	various	226	6	1	13	21622	various	4,102	4	1	6				
Approximate Total weight of Goods destroyed during the year									1911	-	-	-	1,408	4	3	1
									1912	-	-	-	3,758	7	1	2
									1913	-	-	-	2,458	0	2	21
									1914	-	-	-	1,184	11	1	1
									1915	-	-	-	3,118	5	3	19
									1916	-	-	-	5,664	9	2	5
									1917	-	-	-	4,847	8	1	5
									1918	-	-	-	1,200	7	0	27
									1919	-	-	-	2,829	15	0	19
									1920	-	-	-	4,102	4	1	6

TABLE XXXIV.—DESCRIPTION OF MEAT DESTROYED.

YEAR.	BEEF.		MUTTON.		VEAL, PORK, OFFAL.			TINNED.		SMOKED AND SALTED, &c.		TOTAL. Tons cwt. grs. lbs.
	Tons	cwt. grs. lbs.	Tons	cwt. grs. lbs.	Tons	cwt. grs. lbs.	Tons	cwt. grs. lbs.	Tons	cwt. grs. lbs.		
1911 ...	341	6 3 18	25	9 1 6	Pork and Veal— 4 8 1 19 Offal— 80 19 1 8	6	8 2 5	3	18 2 0	462	11 0 0	
1912 ...	58	3 0 3	14	3 2 3	Pork and Veal— 7 14 2 13 Offal— 19 10 0 10	5	17 3 17	3	2 2 16	108	11 3 6	
1913 ...	31	13 0 18	134	5 3 14	Pork and Veal— 0 16 1 2 Offal— 69 3 1 14	1	14 3 22	14	14 3 6	252	8 1 20	
1914 ...	82	9 3 26	161	11 1 22	Pork and Veal— 11 6 1 27 Offal— 55 18 0 17	3	8 0 13	1	19 0 3	316	13 0 24	
1915 ...	294	18 2 20	64	2 1 15	Pork and Veal— 13 7 0 27 Offal— 58 1 1 3	6	3 0 15	17	2 0 2	453	14 2 26	
1916 ...	162	7 2 4	10	12 1 10	Pork and Veal— 21 9 2 4 Offal— 24 5 2 3	6	15 1 26	693	6 2 9	918	17 0 0	
1917 ...	227	11 1 18	44	10 2 19	Pork and Veal— 0 9 2 15 Offal— 8 13 0 27	1	10 0 18	78	17 3 16	361	13 0 1	
1918 ...	274	15 0 2	5	5 1 20	Pork and Veal— 0 16 3 1 Offal— 18 19 1 2	30	14 0 12	0	10 2 6	331	1 0 15	
1919 ...	52	14 2 2	28	4 2 15	Pork and Veal— 13 0 1 6 Offal— 41 5 1 22	27	18 1 13	272	14 1 26	435	17 3 0	
1920 ...	116	1 3 2	122	12 0 19	Pork and Veal— 16 13 1 24 Offal— 30 0 1 16	88	6 2 19	82	3 3 5	455	18 1 1	
Total for ten years ...	1,642	2 0 1	610	17 3 3	496 18 3 8	178	17 1 20	1,168	10 1 5	4,097	6 1 9	

FOOD INSPECTION.

The Regulations issued by the Local Government Board (now the Ministry of Health) under the Public Health (Regulations as to Food) Act, 1907, were carried out in the Port of London, and resulted in 4,102 tons 4 cwts. 1 qr. 6 lbs. of Unsound Food being destroyed or disposed of in such a manner as to prevent its being used for human consumption.

Exceptions are shown in the disposal of some of the goods for the manufacture of confectionery and distillation. The goods used for the manufacture of confectionery were condensed milk which had either undergone a yeast fermentation or had been returned to this country owing to caramelisation and discolouration. The deleterious qualities were removed in the process of re-manufacture, and thus the use of a considerable quantity of valuable food material was retained.

The goods for distillation consist usually of dried fruits, *e.g.*, dates, prunes, raisins and sultanas.

The goods were disposed of as follows, only those which could not be used for some useful purpose being actually destroyed:—

	Tons.	Cwts.	Qrs.	Lbs.
Boiled down (recovery of fat, &c.)	575	2	3	16
Cattle and Poultry Food	1,990	5	1	14
Re-manufacture (Confectionery, &c.)	452	4	3	18
Distillation	136	4	3	23
Destroyed—				
Buried	663	8	1	22
Burned	248	17	3	2
Total weight	4,102	4	1	6

The total shows an increase of 44 per cent. compared with the year 1919, and has been exceeded only on two occasions.

A Review of the Frozen Meat Trade for 1920, published by Messrs. W. Weddel and Co., Ltd., shows that although during the first six months of the year the cold stores in this country were glutted with meat, imports into the United Kingdom ports were 90,000 tons in excess of those of any previous year in the history of the trade.

Further, that of the world's export output of refrigerated beef, mutton and lamb, the aggregate shipment from all overseas sources amounted to 1,056,000 tons, of which 783,000 tons were shipped to the United Kingdom, and of that quantity 34,562 tons were re-exported to the Continent.

Also that the world's total production of frozen and chilled meat during the year was 1,056,000 tons, of which 810,000, of 77 per cent., was imported into the United Kingdom.

In several instances your Inspectors found consignments of frozen meat which had been imported contrary to the provisions of the Public Health (Foreign Meat) Regulations, 1908, and Notices, as required by the Regulations, were served upon the importers forbidding the removal of the meat for any purpose other than exportation.

The following is a list of the consignments in respect of which the Notices were served upon the importers:—

PUBLIC HEALTH (FOREIGN MEAT) REGULATIONS, 1908.

During the year Notices were served under Articles III. (5), IV. (1) of the above-mentioned Regulations, for the exportation of the following meat:—

Date of Arrival.	Name of Vessel.	Where from.	Where lying.	Description and quantity in respect of which Notices were served.
1920.				
Apl. 27	s.s. "Duquesa" . . .	BuenosAyres	Royal Albert Dock	154 bags beef trimmings.
Aug. 13	s.s. "Marquesa" - . .	Do. -	Do. -	4 bags pig-hearts.
" 22	s.s. "Nagara" - . .	Do. -	Do. -	3 bags pig-hearts.
" 24	s.s. "Highland Glen" - .	Do. -	Do. -	2 bags pig-hearts.
Nov. 23	s.s. "Montilla" - . .	Zarate -	Do. -	541 packages sheep-head meat, 522 packages pig-livers, 8 packages pig-hearts.

BEEF.—The frozen and chilled beef imported into the United Kingdom during the year amounted to 5,382,700 quarters, an increase of 1,634,464 quarters, or 43·6 per cent. over the preceding year's arrivals.

The total quantity seized by your officers and disposed of as unfit for human consumption was 1,524 quarters and crops, 1,062 bags and a quantity of trimmings and pieces, the total weight being 116 tons 1 cwt. 3 qrs. 2 lbs., against 52 tons 14 cwt. 2 qrs. 2 lbs. in the preceding year.

The largest quantity seized ex any vessel was 577 quarters, weighing 22 tons 7 cwt. 3 qrs. 9 lbs.

MUTTON AND LAMB.—The importations of frozen mutton and lamb from all sources in 1920 amounted to 12,487,129 carcasses, compared with 9,908,400 carcasses in 1919, an increase of 2,578,729 carcasses, or 26 per cent.

The total quantity seized by your officers and disposed of as unfit for human consumption was 2,578 carcasses, 2,019 bags and pieces and a quantity of trimmings, &c., the total weight being 122 tons 12 cwt. 0 qrs. 19 lbs., against 28 tons 4 cwt. 2 qrs. 15 lbs. in the preceding year.

The largest quantity seized ex any vessel was 1,461 carcasses and a quantity of trimmings, the total weight being 62 tons 0 cwt. 1 qr. 4 lbs.

BEEF AFFECTED WITH "WORM" (ONCHOCERCA).—No beef affected with "Worm" (*Onchocerca*) came under the notice of your officers during the year.

ACTINOMYCOSIS IN OX-TONGUES.—Most of the ox-tongues which arrived in the Port of London were, at the request of the consignees, removed from the district of the Port Sanitary Authority (without inspection) to cold stores within the City of London and the Metropolitan Borough of Finsbury, to be examined there under the supervision of the Medical Officers of Health of those districts.

About 70 separate consignments were put into cold store within the district of the Port Sanitary Authority, where the tongues were thawed out and carefully examined, and in the majority of the consignments not more than 2 per cent. of the tongues showed evidence of disease.

The consignments showing upwards of 2 per cent. diseased were as follows:—

Number of Tongues Examined.	Number found Diseased.	Percentage of those Examined.
1,008	28	2·7
252	6	2·3
252	8	3·1
1,272	42	3·3
252	9	3·9
252	10	3·9
252	9	3·9
264	11	4·1
252	13	5·1
250	14	5·4

The result of these examinations shows a slight retrogressive condition compared with the previous year.

PORK.—During the year a careful examination was made of a percentage of all consignments of pig carcasses which arrived in the Port of London, and in the majority of consignments the carcasses examined showed less than 2 per cent. to be affected with Tuberculosis. Particulars are given below of the five worst results obtained:—

Number of Carcasses Examined.	Number found to be Tuberculous.	Percentage of Carcasses found to be Tuberculous.
310	8	2·5
150	3	3·3
125	3	2·4
133	3	2·2
370	10	2·7

The pork seized and destroyed during the year was as follows:—

From.	Tuberculous Carcasses.	Carcasses.	Pieces.	Unsound.		
				Bags.	By weight, cwt. qrs.	lbs.
Argentine - - - -	159	1	—	—	—	—
Brazil - - - -	2	—	—	—	—	—
China - - - -	8	6	35	1	—	—
New York - - - -	18	—	—	—	—	—
(Ship's Stores) - - - -	—	1	69	4	24	0 19
Totals - - - -	187	8	104	5	24	0 19

VEAL.—Only 9 cwts. 2 qrs. 21 lbs. of veal was seized as unfit for human consumption. The greater part of this had been damaged by fire on board ship, and the remainder was stores from various vessels.

OFFAL.—The offal seized as unfit for human consumption was as follows:—

	Tons.	Cwts.	Qrs.	Lbs.
Cheeks, Ox—160 bags	4	18	1	17
Heads, Sheep—10 bags	0	8	2	15
Hearts, „ —92 bags	3	0	3	24
Kidneys—16 boxes, 13 bags, 12 crates	0	19	3	18
Livers, Ox—90 bags, 19 loose	3	12	2	23
„ Sheep—36 bags	1	3	2	8
Plucks—7 casks	1	3	0	0
Skirts—33 bags and 5 part bags	0	19	1	0
Sweetbreads—1 box, 5½ bags	0	3	2	18
Tails, Ox—7 bags	0	3	1	13
Tongues, Ox—1 case, 67 bags, 319 loose	1	17	3	20
Tripe—1 case, 30 bags, 7 pieces	0	14	1	12
Sundries	11	4	1	22
Total weight	30	10	0	22

SAUSAGES.—These totalled 2,766 cases, weighing 70 tons 5 cwts. 3 qrs. 12 lbs., most of which had been in cold store for a considerable time.

MEATS (CANNED).—The tinned meats seized and disposed of consisted of 2,195 cases and 5,291 tins, weighing 88 tons 6 cwts. 2 qrs. 19 lbs.

MEAT (SMOKED AND SALTED):—

	Tons.	Cwts.	Qrs.	Lbs.
Bacon—1 box	0	7	2	18
Hams—35 boxes	8	0	1	2
Total weight	8	7	3	20

RABBITS (FROZEN).—4,623 crates and 16 cases of rabbits, weighing 125 tons 5 cwts. 1 qr. 26 lbs., were seized during the year.

RABBITS (TINNED), POULTRY AND GAME.—The goods under this class were:—149 cases, 2,702 tins, 4 bags and 8 loose articles, weighing 6 tons 12 cwts. 1 qr. 26 lbs., as compared with nil of last year.

FISH.—The fish seized and destroyed consisted of:—

	Tons.	Cwts.	Qrs.	Lbs.
Wet—8 cases, 1 bag	0	9	2	7
Dried—49 half-barrels, 8 boxes, 1 cask	5	1	3	2
Shell—1 cask	0	2	0	0
Tinned—45 cases, 498 tins	1	2	3	0
Total weight	6	16	0	9

FRUIT (GREEN).—A considerable increase is shown of this class of goods seized, the total being 543 tons 2 cwts. 3 qrs. 7 lbs., as compared with 6 tons of the preceding year:—

	Tons.	Cwts.	Qrs.	Lbs.
Apples—319 cases, 66 boxes, 14 barrels	11	12	0	21
Oranges—88 boxes and a quantity loose	83	8	3	22
Bananas—522 crates	16	17	3	3
Pears—2,388 barrels, 54 boxes, 189 half-boxes, 327 cases, 4,454 packages	420	11	3	24
Lemons—Quantity loose	7	0	0	0
Tomatoes—51 crates, 57 cases	3	11	3	21
Total weight	543	2	3	7

FRUIT (DRIED).—Most of the goods included under this heading were old stock, chiefly dates, which had been lying in the dock for some considerable time:—

	Tons.	Cwts.	Qrs.	Lbs.
Dates—1,474 cases, 106 bags, 50 boxes and a quantity loose...	1,904	11	0	2
Peaches—15 cases	0	6	1	20
Mangoes—10 cases	0	4	3	0
Apricots—41 boxes	0	9	0	17
Figs—4,127 bags, 206 boxes, 25 baskets, 3 crates	80	2	3	20
Raisins—325 half-cases, 227 cases, 144 boxes	14	16	1	14
Plums—19 boxes	0	3	3	10
Prunes—170 cases, 28 boxes	3	2	1	24
Sultanas—23 boxes	0	3	0	0
Currants—1,963 bags, 228 boxes	12	7	3	25
Sundries—199 cases, 10 boxes, 2 casks, 33 tierces	16	2	0	0
Total weight	2,082	9	3	20

FRUIT (TINNED AND BOTTLED).—89 tons 2 cwts. 3 qrs. 1 lb. of goods of this class were seized and destroyed, as compared with 17 cwts. 2 qrs. 16 lbs. in 1918:—

	Tons.	Cwts.	Qrs.	Lbs.
Pears—405 cases, 74 tins	10	7	1	7
Peaches—103 cases, 27 tins	2	15	1	22
Blackcurrant Pulp—19 cases	0	1	2	22
Apricot Pulp—147 cases, 33 tins	4	16	0	0
Pines—44 cases, 618 tins	1	12	2	20
Apples—192 cases, 25 tins	4	0	3	13
Plums—32 cases, 2,424 tins	3	5	1	4
Assorted Fruit Pulp—256 cases, 207 tins	17	8	0	11
Grapes	1	5	1	22
Greengage Pulp—214 cases, 37 tins	4	14	1	10
Tinned Tomatoes—4,009 tins	3	13	6	6
Tomato Puree—475 cases, 604 tins	35	1	0	4
Total weight	89	2	3	1

JAM AND MARMALADE.—373 cases, 501 tins, weighing 11 tons 18 cwts. 2 qrs. 1 lb., were seized and destroyed.

VEGETABLES:—

	Tons.	Cwts.	Qrs.	Lbs.
FRESH—				
Onions—90 boxes, 18 bags	0	19	0	0
Potatoes—1,082 bags, 14 tons loose	65	1	2	0
DRIED—				
Peas—88 bags, 2 tons loose	7	19	3	27
Beans—4 bags	0	7	0	22
TINNED—				
Spinach—564 tins	0	10	0	8
Asparagus—1 box, 4 tins	0	0	3	0
Sundries	0	10	1	12
Total weight	75	8	3	18

NUTS.—The only goods of this class consisted of:—

	Tons.	Cwts.	Qrs.	Lbs.
Chestnuts—746 bags	30	0	0	0
Almonds	2	3	2	11
Total weight	32	3	2	11

PROVISIONS.—The total quantity of these goods disposed of as unfit for human consumption is more than double the total for the previous year, and is due to several consignments of condensed milk which arrived in a bad condition :—

	Tons.	Cwts.	Qrs.	Lbs.
Tea—274 packages	13	14	0	0
Coffee—1,122 bags	68	1	1	25
Cocoa—19 cases	0	18	3	14
Cheese—66 crates, 12 cases, 5 bags, and a quantity by weight	7	8	1	4
Margarine—402 boxes	13	18	1	20
Butter—26 tins and a quantity by weight	0	2	0	4
Lard—3 cases	0	2	0	16
Condensed Milk—12,785 cases, 733 barrels, 40 casks, 133 tins	489	10	2	8
Total weight	593	15	3	7

PREPARED FOODS :—

	Tons.	Cwts.	Qrs.	Lbs.
Glaxo—2 tins	0	1	0	0
Spaghetti—311 cases	7	5	0	0
Total weight	7	6	0	0

BISCUITS AND CONFECTIONERY.—Practically the whole of these goods came from a vessel which had been damaged by fire :—

	Tons.	Cwts.	Qrs.	Lbs.
Biscuits—115 cases	27	7	2	8
Confectionery—98 boxes, 2 cases	5	1	2	13
Total weight	32	9	0	21

GRAIN :—

	Tons.	Cwts.	Qrs.	Lbs.
Wheat	61	17	1	12
Oats	5	4	0	15
Maize	5	7	2	18
Barley	2	10	1	12
Rice	2	0	3	16
Total weight	77	0	1	17

MEAL AND FLOUR :—

	Tons.	Cwts.	Qrs.	Lbs.
Meal—27 bags	1	8	2	13
Flour—21 bags	0	17	3	6
Total weight	2	6	1	19

CONDIMENTS AND SPICES :—

	Tons.	Cwts.	Qrs.	Lbs.
Cloves—16 packages	0	9	0	0
Chillies—15 boxes	1	2	0	0
Total weight	1	11	0	0

EGGS.—50 cases, weighing 5 tons 13 cwts. 0 qrs. 20 lbs.

DRUGS—weighing 1 cwt. 2 qrs. 1 lb.

SUNDRIES.—36 cases, 18 bags, 51 packages and 2 casks, weighing 6 tons 12 cwts. 0 qrs. 3 lbs.

During the year applications were received from Importers to be allowed to remove various foodstuffs from the District of the Port of London without examination by your officers, on the understanding that the goods would be examined and dealt with under the supervision of the Medical Officer of Health of the district to which the goods were removed.

The permission asked for was given in respect of the following foodstuffs :—

For removal to the City of London :—

9,231 boxes dried plums.
 24 „ evaporated pears.
 630 „ dried apricots.
 1,623 „ prunes.
 724 „ tinned tomatoes.
 208 pig carcasses.
 1,333 cases ox-tongues.
 5,014 bags ox-tongues.

For removal to the Borough of Bermondsey :—

1,416 pig carcasses.
 2,194 cases condensed milk.
 54 boxes dried apricots.
 282 bags flour.
 2 cwts. 3 qrs. 16 lbs. rice.
 110 cwts. 2 qrs. 24 lbs. wheat.

For removal to the Borough of Finsbury :—

614 cases ox-tongues.
 13,496 bags ox-tongues.

For removal to the Borough of Bethnal Green :—

200 cases tinned pineapples.

For removal to the Borough of Southwark :—

1,792 cases condensed milk.

For removal to the Borough of Camberwell :—

35 cases Mellin's Food.

For removal to the Borough of Stepney :—

1,000 cases corned beef.

For removal to the Borough of Middlesbrough :—

73 boxes prunes.

In November the Committee assented to the designation of Dr. Willoughby, the Medical Officer of Health, as a Certifying Officer for the purpose of export to the United States of America of meat or meat food products lying within the district of the Port of London.

On the 12th January 1,951 bags of currants, weighing about 50 tons, which had been under water in the Millwall Dock, were seized as unfit for human consumption. It was not possible to dispose of the goods for any useful purpose, and as they became a nuisance they were destroyed in dock by burning.

On the 15th March the s.s. " BRODLIFFE," from China, arrived with about 8,000 packages of pig offal on board. This was Foreign Meat, Class 1, and was re-shipped to the Continent.

On the 6th April the s.s. " BRODMEAD," from China, arrived with 1,445 cases of pork offal on board. This was Foreign Meat, Class 1, and was re-shipped to the Continent and New York.

On the 29th September 51 cases and 12 tins of pilchards, which arrived in December, 1918, were seized by one of your officers. These were in a very bad condition, and, as a result of careful sorting under the supervision of your officers, 50 per cent. were rejected and destroyed.

On the 30th September 875 cases of tinned rabbits, from Australia, were seized, and the sorting resulted in 2,638 tins (= 8.3 per cent.) being rejected and destroyed as unfit for human consumption.

On the 16th October one of your officers detained 194 cases of tinned grapes from New Zealand, which had been lying in the dock for about ten months. These were sorted and over 40 per cent. rejected and destroyed as unfit for human consumption.

On the 11th November 249 cases of sardines, which had been rejected in Australia, arrived in the Royal Albert Dock, and were placed under detention. Apart from the fact that analysis showed the fish to contain from 2.5 to 4.8 grains of tin per lb., a very large percentage of the tins were blown, and the contents showed age and decomposition. The goods were still under detention at the end of the year, as a question of liability was involved and being dealt with by arbitration.

On the 17th November 10,000 boxes of prunes were seized by one of your officers and were still under detention at the close of the year.

On the same date 4,126 bags of figs from Greece were seized and disposed of by shipping them to the Continent.

On the 15th December 370 cases of veal meat arrived from New York. This was Foreign Meat, Class 1, the importation of which is prohibited. It was removed to the Port of London Authority's Cold Store at West Smithfield, within the Metropolitan Borough of Finsbury. A notice was served upon the importers forbidding the removal of the meat from the cold store for any purpose other than exportation, and the Medical Officer of Health for Finsbury was notified accordingly.

TABLE XXXV.—GENERAL SUMMARY, and Analysis, of the Sanitary Inspections of Vessels, &c., in the Port of London, for the year ended 31st December, 1920.

FOREIGN.			COASTWISE.			INLAND NAVIGATION.						Shore Premises.			WATER BARGES.																		
Steam.		Sail.	Steam.		Sail.	Steam.		Sail.		Lighters (uninhabited).	Canal Boats.																						
Inspected.	Defective.	To be Cleaned.	Inspected.	Defective.	To be Cleaned.	Inspected.	Defective.	To be Cleaned.	Inspected.	Defective.	To be Cleaned.	Inspected.	Defective.	To be Cleaned.	Inspected.	Defective.	To be Cleaned.	Sick Seamen referred to Hospital.	No. in District in good condition, 31st December, 1920.	New Barges.	Condensed.	Use discontinued.	No. in District 31st December, 1920.										
11046	50	1098	732	3	21	1469	6	109	485	3	11	517	2	34	5918	25	293	2244	1	181	142	22	4	4966	40	702	2	—	—	—	—	—	
Total Inspections to 31st December, 1919 -															1,252,833																		
Total Inspections from 1st January to 31st December, 1920—																																	
Foreign - - -															11,778																		
Coastwise - - -															1,954																		
Inland Navigation - - -															8,821																		
Premises on shore - - -															4,966																		
															27,519																		
Total - - -															1,280,352																		
Cleansing of Crew's Quarters, &c. :—																																	
Total to 31st December, 1919 - - -															81,561																		
Total No. of Vessels from 1st January to 31st December, 1920 - - -															1,751																		
Total - - -															83,312																		
Number of vessels inspected :—																																	
In the Launches—																																	
“Lady Truscott” - - -															3,013																		
“David Burnett” - - -																																	
“George Briggs” - - -															3,812																		
Total - - -															6,825																		
In the Docks, &c. - - -															20,694																		
Total - - -															27,519																		
																	Docks and River.																
																	No.																
																	St. Katherine's - - - - -															950	
																	London - - - - -															1,911	
																	Regent's Canal - - - - -															982	
																	Millwall - - - - -															1,562	
																	West India - - - - -															1,610	
																	Poplar - - - - -															186	
																	East India - - - - -															1,553	
																	Victoria - - - - -															2,382	
																	Royal Albert - - - - -															1,613	
																	Commercial - - - - -															1,969	
																	Tilbury - - - - -															1,010	
																	Gravesend District - - - - -															—	
																	River—*Upper District - - - - -															2,773	
																	*Middle „ - - - - -															1,039	
																	*Lower „ - - - - -															3,013	
																	Total vessels - - - - -															22,553	
																	Shore premises - - - - -															4,966	
																	Total - - - - -															27,519	
																	*Upper District extends from Greenwich to Teddington.																
																	*Middle „ „ „ Greenwich to Erith.																
																	*Lower „ „ „ Erith to outer limits of the Port of London.																

COMPARATIVE TABLE.

Total number of Inspections of vessels from—	1911.	1912.	1913.	1914.	1915.	1916.	1917.	1918.	1919.	1920.	Yearly average for the 10 years ending 31st December, 1920.
“Foreign” - - -	14,015	15,177	14,425	13,539	12,472	10,244	8,365	8,362	11,030	11,778	11,940·7
“Coastwise,” “Inland Navigation,” and other Inspections -	24,009	28,035	24,501	24,475	22,237	19,634	20,881	20,390	18,388	15,741	21,829·1
Total - - -	38,024	43,212	38,926	38,014	34,709	29,878	29,246	28,752	29,418	27,519	33,769·8

TABLE XXXVIII.—SANITARY WORKS.

PART I.

Date completed. 1920.	Works.
Jan. —	East India Dock. New closets for Pearson's Canteen near Orchard House Gate.
Nov. 9	Surrey Commercial Dock. Lavatory accommodation for Canadian Pacific Ocean Services, Ltd.
" 10	Poplar Dock. Drainage, &c., at London and North-Western Railway.

PART II.

Sanitary Works and Alterations, not yet reported as completed:—

Date. Plan submitted. 1920.	Works.
Jan. 15	West India Dock. Proposed surface-water drain at new Shed "H."
" 30	Royal Albert Dock. Proposed closets, &c., for Messrs. Lester and Perkins' premises.
Feb. 13	Surrey Commercial Dock. Proposed drainage, &c., at Messrs. Furness, Withy and Co.'s Offices.
April 9	Regent's Canal Dock. Proposed drainage, &c., at Caretaker's Cottage.
Aug. 25	Royal Albert Dock. Proposed closets, &c., at Western end of Dry Dock.
Sept. 13	Poplar Dock. Proposed convenience for workmen at G.N.R. Depôt.
" 14	Surrey Commercial Dock. Proposed new sanitary conveniences.
Oct. 21	Royal Albert Dock. Proposed drainage, &c., at New Joiners' Shop, Central Works.
Nov. 4	Tilbury Dock. Proposed drainage at Store Shed, North end.

SANITARY CONVENIENCES, SURREY COMMERCIAL DOCK.

The Port of London Authority intimated that they were proceeding to remodel those sanitary conveniences in the Surrey Dock which it was practicable to convert to the water-carriage system.

TABLE XXXIX.—BYE-LAWS—OFFENSIVE CARGOES.

Ten cases of infringement of the above-mentioned Bye-laws were reported during the year. In each case written notice was sent to the owners of the barges concerned:—

Date. 1920.	Name of Vessel.	Infringement.
Feb. 3	Lighter "Hawthorn" -	Laden with a cargo of house refuse and road sweepings not properly and securely covered so as to prevent any nuisance arising therefrom.
" 10	Lighter "Cauliflower" -	Laden with a cargo of house refuse not properly and securely covered so as to prevent any nuisance arising therefrom, and also loaded above the coamings.
March 30	Lighter "Marie" -	Not properly cleansed within six hours after discharge of an offensive cargo therefrom.
May 3	Lighter "Cauliflower" -	Laden with a cargo of house refuse and road sweepings not properly and securely covered so as to prevent any nuisance arising therefrom.
June 21	Lighter "Magnolia" -	Laden with an offensive cargo not properly and securely covered so as to prevent any nuisance arising therefrom, and also loaded above the coamings.
" 21	Lighter "King" -	Ditto Ditto.
Aug. 9	Lighter "Nellie" -	Ditto Ditto.
" 9	Lighter "Rainham" -	Ditto Ditto.
" 13	Lighter "Lupin" -	Ditto Ditto.
Nov. 13	Lighter "Hemlock" -	Laden with a cargo of mixed refuse matter not properly and securely covered so as to prevent any nuisance arising therefrom.

At 3 p.m., June 18th, the dumb barge "VENTNOR," laden with 1,650 carcasses of mutton, was sunk off Grosvenor Wharf, Cubitt Town.

These carcasses were washed out of the barge and began to float up under decomposition on and about the 28th June, when they were much in evidence on the surface of the river, and stranded from time to time on the foreshore, at widely separated points.

The following letter was sent to the Medical Officer of Health of all Riparian Authorities between Fulham and Dartford Creek.

DEAR SIR,

It is reported that several hundred carcasses of mutton in a putrid condition are floating in the river, either on the surface or otherwise, and are cast from time to time on the foreshore. In case these become a nuisance in your district, I should be obliged if you can find means of dealing with them on the spot, either by burial or by destruction. This source of nuisance is so widespread that I find it impossible to deal with in the speedy way it may demand, and therefore ask your kind co-operation.

Yours faithfully,

W. M. WILLOUGHBY,

*Medical Officer of Health,
Port of London.*

On the 30th October a lighter named "BLACK CROW" was inspected in Dartford Creek. This lighter was used for providing lodging for six men engaged in building operations in the town and who were unable to find lodgings elsewhere. No nuisance existed at the time of inspection; the contractor arranged for the place to be efficiently ventilated, woodwork to be limewashed, and a man detailed off daily to clean the place.

The arrangement was a temporary one due to the lack of housing accommodation.

The barge "WUMPS," also inspected in Dartford Creek, was found to have five persons on board—the Master, his wife and three children. The Master stated that he was compelled to take the family on board owing to the impossibility of finding housing accommodation.

FUMIGATION OF GUNNIES.

During August certain traders experienced difficulty in getting gunnies entered to Buenos Ayres in the absence of satisfactory certificates of fumigation.

Your Medical Officer, on their application, undertook to supervise the disinfection of gunnies. Closed barges were used, and sulphur dioxide was the fumigant.

At the time it was felt that the popularisation of, and education in, simple methods of fumigation was valuable. The shippers undertook stowage and all other labour involved. If such fumigation becomes a large matter, a Supervising Inspector's time would be too much occupied in the extraneous work. The point was closely watched by your Medical Officer.

A comprehensive charge of 3*l.* 3*s.* was made on account of sulphur, supervision and certificate for each barge fumigated.

LAUNCHES, &c.

"LADY TRUSCOTT."—The conversion of this launch to oil fuel was completed in June, and the launch resumed duty on the Gravesend Station, with the "David Burnett" in reserve.

"DAVID BURNETT."—A new whistle and feed check valve were fitted in January. In March the tug "Sunrise" did slight damage by collision to this launch. The owner of the tug reimbursed the cost of repairs, amounting to 19*l.* 10*s.*

"GEORGE BRIGGS."—The engines of this motor-launch were overhauled and repaired at a cost of 180*l.* In September the wash from a passing tug drove the launch against a barge, doing damage to panels and glass windows. This was repaired at a cost of 3*l.* 15*s.*

"ELLA VICARS."—This mooring barge was damaged by two lighters in February. The owners of the lighters reimbursed the cost of repairs. A new boat was provided for the mooring barge at a cost of 36*l.*

DENTON HOSPITAL.

A donation of 25*l.* was received from the owners of the Danish s.s. "Elisabeth Maersk," through Messrs. Charles Gee and Co., in respect of the treatment of several members of the crew of that vessel in Denton Hospital.

STAFF.

OFFICE.—A. W. Moore was appointed as Junior Clerk at a commencing salary of 40*l.* per annum, plus War Bonus. He commenced duty on January 26th.

INSPECTORS.—C. A. Shepherd, Sanitary Inspector, resigned his appointment and left the service on January 13th.

CANAL BOATS ACTS.

In accordance with Section 3 of the Canal Boats Act, 1884, I beg to present herewith the Annual Report on the working of the Canal Boats Acts and Regulations within the district of the Port of London Sanitary Authority during the year ended 31st December, 1920.

The Acts and Regulations apply within the whole of the district under the jurisdiction of the Port of London Sanitary Authority, including the River and Docks—as a “canal” for the purposes of the Act, “includes any river, inland navigation, lake, or water being within the body of a county, whether it is or is not within the ebb or flow of the tide.”

The navigation, in addition to the enclosed Docks, includes the following navigable tributary waters and creeks of the River Thames:—

On the right bank—

From Teddington downwards:—
Wandsworth Creek (River Wandle).
Hay's Dock.
St. Saviour's Dock.
Part of the Grand Surrey Canal within the Surrey Commercial Docks.
Deadman's Dock.
Deptford Creek (River Ravensbourne).
Dartford Creek (Rivers Cray and Darent).
The entrance to the Gravesend Canal.
Cliffe Creek.
Yantley and Coalmouth Creeks.
Part of the River Medway, and of the Swale.

On the left bank—

From Teddington downwards:—
The entrance to the River Brent.
Hammersmith Creek.
Chelsea Dock.
Grosvenor Dock.
Limekiln Creek.
Bow Creek (River Lea).
Barking Creek (River Roding).
Rainham Creek (River Ingrebourne).
Mucking Creek.
Thames Haven.
Hole Haven.
Potten and Rushley Creeks.
River Roach as far as Rochford.

RIVER.

The whole of this area is divided into three districts known as Upper, Middle and Lower, each district being in charge of an Inspector, as follows:—

UPPER DISTRICT.—Teddington to Greenwich - - -	Inspector Lambe, 250 <i>l.</i> per annum.
MIDDLE DISTRICT.—Greenwich to Erith - - -	Ditto.
LOWER DISTRICT.—Erith to seaward limits of the Port of London (including part of the River Medway).	Inspector Berry, 208 <i>l.</i> per annum.

The Docks are divided into four districts known as the Central, Eastern, Western and the Gravesend District.

CENTRAL DISTRICT.—West India Dock - - -	} Inspector Rolfe, 250 <i>l.</i> per annum.
South West India Dock - - -	
Poplar Dock - - -	
Millwall Dock - - -	
EASTERN DISTRICT.—Royal Victoria Dock - - -	} Inspector Burr, 250 <i>l.</i> per annum.
East India Dock - - -	
Royal Albert Dock - - -		Inspector Wetjen, 250l. per annum.
WESTERN DISTRICT.—London Dock - - -	} Inspector Hopkins, 250 <i>l.</i> per annum.
St. Katherine's Dock - - -	
Regent's Dock - - -	
Surrey Commercial Dock - - -		Inspector Elward, 230l. per annum.
GRAVESEND DISTRICT.—Tilbury Dock - - -	} Inspector Massie, 220 <i>l.</i> per annum.
Left Shore, from Purfleet down.	
Right Shore, from Erith down	

(2) The total number of inspections for the year was 141, representing a net number of 89 boats. The remainder, 52, represents repeated visits by Inspectors of this Authority.

The number of boats not conforming to the Acts and Regulations was 39 (inspected on 75 occasions, or 27·65 per cent. of the total inspections, the percentage for the previous five years being 18·87 per cent.).

In addition to the above, two boats were at the time of visit found with the cabin doors locked, there being no persons on board. Inspection was therefore impossible, and these visits are not included in the number of boats inspected.

(3) With reference to the various infringements of the Act:—

UNREGISTERED BOATS.

Feb.	17	" Romeo "	- - - -	Registered Port of London, No. 488.
"	19	" White City."		
March	28	" Raven."		
May	7	" Romeo "	- - - -	Registered Port of London, No. 488.
"	27	" Raven."		
June	2	" Maypole No. 6."		
Dec.	22	" Maypole No. 7 "	- - - -	To be Registered Port of London, February, 1921.

NOTIFICATION OF CHANGE OF MASTER.

Nil.

Absence of Certificate of Registration was found in the following cases, a complaint being sent to the owners. In the case of those boats marked * information was received that the Certificates were subsequently placed on board:—

Jan.	20	*" Togo "	- - - -	Registered Berkhamsted, No. 385.
March	11	" Milner "	- - - -	" " No. 354.
May	5	" Integrity "	- - - -	" Uxbridge, No. 325.
"	17	" Searchlight "	- - - -	" Port of London, No. 432.
"	17	" Petrol "	- - - -	" " No. 455.
"	20	*" Ada "	- - - -	" Berkhamsted, No. 404.
"	21	*" Reliance "	- - - -	" Port of London, No. 423.
July	2	" Wandle "	- - - -	" Berkhamsted, No. 327.
"	22	" Hope "	- - - -	" Port of London, No. 240.
Aug.	13	" Livingstone "	- - - -	" Berkhamsted, No. 325.
"	30	" Sarah "	- - - -	" " No. 408.
Oct.	11	" Walter "	- - - -	" " No. 345.
Nov.	8	*" Kuroki "	- - - -	" Port of London, No. 428.
"	15	" Baden Powell "	- - - -	" Daventry, No. 161.
"	25	" Betty "	- - - -	" Reading, No. 46.
Dec.	7	" Providence "	- - - -	" Brentford, No. 282.

CERTIFICATES NOT IDENTIFYING OWNER WITH BOAT.

Feb.	20	" Rugby "	- - - -	Registered Brentford, No. 379.
Dec.	22	" Tony "	- - - -	" City of Rochester, No. 270.

MARKING, &C.

May	17	" Searchlight "	- - - -	Registered Port of London, No. 432.
June	15	" Alfred "	- - - -	" Uxbridge, No. 431.
Sept.	28	" James "	- - - -	" Brentford, No. 322.
Dec.	22	" Tony "	- - - -	" City of Rochester, No. 270.

OVERCROWDING.

June	25	" Sarah Ann "	- - - -	Registered Port of London, No. 480.
"	30	*" Stort "	- - - -	" Brentford, No. 350.
Oct.	13	" Sarah Ann "	- - - -	" Port of London, No. 480.

Canal boat " Stort," registered Brentford No. 350, was inspected on the 30th June, with two persons occupying the after cabin in excess of the number for which it is registered. A letter was sent to the owners on the 2nd July. The infringement was found to have been remedied on a further inspection of the boat on the 19th November.

Canal boat "Sarah Ann," registered Port of London, No. 480, was inspected on the 25th June and 13th October, with four persons occupying the after cabin in excess of the number for which it is registered. The owner was communicated with. (See note under Legal Proceedings.)

SEPARATION OF THE SEXES.

Nil.

CLEANLINESS.

June	15	"Sandford"	-	-	-	Registered Brentford, No. 352.
"	30	"Stort"	-	-	-	" " No. 350.
Nov.	25	"Betty"	-	-	-	" Reading, No. 46.
Dec.	22	"Tony"	-	-	-	" City of Rochester, No. 270.

PAINTING.

Feb.	20	"Rugby"	-	-	-	Registered Brentford, No. 379.
June	15	"Sandford"	-	-	-	" " No. 352.
Oct.	13	"Sarah Ann"	-	-	-	" Port of London, No. 480.
Nov.	25	"Betty"	-	-	-	" Reading, No. 46.
Dec.	7	"Providence"	-	-	-	" Brentford, No. 282.
"	22	"Tony"	-	-	-	" City of Rochester, No. 270.

VENTILATION.

March	11	"Raven"	-	-	-	Unregistered.
Oct.	13	"Sarah Ann"	-	-	-	Registered Port of London, No. 480.

DILAPIDATION.

Jan.	20	"Togo"	-	-	-	Registered Berkhamsted, No. 385.
Feb.	10	"Romeo"	-	-	-	Unregistered.
"	20	"Rugby"	-	-	-	Registered Brentford, No. 379.
March	11	"Ruth"	-	-	-	" Port of London, No. 481.
"	11	"Raven"	-	-	-	Unregistered.
May	17	"Searchlight"	-	-	-	Registered Port of London, No. 432.
"	27	"Ruth"	-	-	-	" " No. 481.
"	27	"Raven"	-	-	-	Unregistered.
"	31	"Mersey"	-	-	-	Registered Berkhamsted, No. 415.
June	15	"Alfred"	-	-	-	" Uxbridge, No. 431.
"	19	"Jessie"	-	-	-	" Port of London, No. 242.
"	25	"Sarah Ann"	-	-	-	" " No. 480.
"	29	"Maud"	-	-	-	" Berkhamsted, No. 410.
"	30	"Stort"	-	-	-	" Brentford, No. 350.
July	2	"Wandle"	-	-	-	" Berkhamsted, No. 327.
Aug.	30	"Sarah"	-	-	-	" " No. 408.
Sept.	28	"James"	-	-	-	" Brentford, No. 322.
Oct.	11	"Walter"	-	-	-	" Berkhamsted, No. 345.
"	13	"Sarah Ann"	-	-	-	" Port of London, No. 480.
Nov.	15	"Baden Powell"	-	-	-	" Daventry, No. 161.
"	15	"March"	-	-	-	" Berkhamsted, No. 466.
"	25	"Betty"	-	-	-	" Reading, No. 46.
Dec.	7	"Providence"	-	-	-	" Brentford, No. 282.
"	22	"Tony"	-	-	-	" City of Rochester, No. 270.

REMOVAL OF BILGE WATER.

Nil.

PROVISION OF WATER CASK.

March	11	"Raven"	-	-	-	Unregistered.
Aug.	12	"Windsor"	-	-	-	Registered Uxbridge, No. 448.
"	30	"Sarah"	-	-	-	" Berkhamsted, No. 408.
Dec.	22	"Maypole No. 7"	-	-	-	Unregistered.

NOTIFICATION OF INFECTIOUS DISEASE.

Nil.

DOUBLE BULKHEADS.

July	2	" Wandle "	- - -	Registered	Berkhamsted, No. 327.
Oct.	13	" Sarah Ann "	- - -	"	Port of London, No. 480.
Nov.	25	" Betty "	- - -	"	Reading, No. 46.

ADMITTANCE OF INSPECTOR.

No difficulty has been experienced in regard to the visits of the Inspectors of this Authority.

LEGAL PROCEEDINGS.

Proceedings have not been taken in any case of infringement of the Acts and Regulations during the year.

The canal boat " Sarah Ann," registered Port of London, No. 480, was inspected on the 25th June and 13th October, infringing the Acts and Regulations, as follows:—

After cabin overcrowded.
 Skylight broken. Deck leaky.
 Fore cabin unfit for occupation.
 Ventilation defective.
 Flooring, woodwork and bulkhead defective.
 Paintwork dirty.

The owner was warned that a prosecution would be initiated unless the matters were attended to forthwith. The condition of the boat was brought to the notice of various Authorities and of H.M. Chief Inspector of Canal Boats.

On 19th October the owner replied that this would have his special attention. On 31st December information was received from the Canal Boats Officer at Brentford, that the boat was in dock undergoing necessary repairs.

This case will be followed up with a view to further inspection by an officer of the Port of London Sanitary Authority.

DOUBLE BULKHEADS.

- (6) There were three infringements with regard to the condition of these.
 (7) No boats have been detained for cleansing.
 (8) On December 31st, 1920, there were 272 boats on the Register:—
- | | | |
|---------------------------|-----------|-----|
| Propelled by Tug and Oars | - - - - - | 254 |
| " Steam | - - - - - | 15 |
| " Motors | - - - - - | 3 |
- (9) One boat was registered in 1920.

TABLE OF CANAL BOATS CARRYING CHILDREN ON BOARD.

Year.	No. of boats.	No. of boats with children.	No. of children.	Average No. of children per boat.	Average No. of boats with children.
1908	- - 1,168	206	459	2.18	17.63
1909	- - 1,432	219	495	2.26	15.29
1910	- - 908	172	354	2.05	18.94
1911	- - 926	173	400	2.31	18.03
1912	- - 841	197	409	2.07	23.42
1913	- - 451	61	196	3.21	13.52
1914	- - 237	82	214	2.60	34.62
1915	- - 197	56	256	4.57	21.52
1916	- - 156	36	101	2.80	23.07
1917	- - 118	41	134	3.26	34.74
1918	- - 109	22	74	3.36	20.18
1919	- - 92	16	69	4.31	17.39
1920	- - 89	19	81	4.26	21.34

I have the honour to be, GENTLEMEN,

Your obedient Servant,

W. M. WILLOUGHBY,

*Medical Officer of Health,
 Port of London*

TABLE XL,
SUMMARY OF CANAL BOATS FOR THE YEAR ENDED 31st DECEMBER, 1920.

	TOTAL FOR THE YEAR																		
	1915.	1916.	1917.	1918.	1919.	TOTAL	December.	November.	October.	September.	August.	July.	June.	May.	April.	March.	February.	January.	
New boats registered	7	4	2	1	1	1	...	...	...	...	...	...	...	...	...	1	...	...	...
Registration owing to structural alterations	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Registration for other purposes	1	2	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
No. of Visits of Inspection	413	280	280	188	153	141	4	20	16	5	10	11	12	16	11	13	9	14	...
Conforming to Acts and Regulations	328	228	225	149	120	102	1	15	14	4	7	9	5	14	11	10	6	13	...
Infringements in respect to :—																			
Registration	23	9	8	6	5	7	1	...	...	...	...	...	1	...	...	1	2	...	...
Notification of change of master	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Absence of certificate	19	10	19	12	11	16	1	3	1	...	2	2	...	1	...	1	...	1	...
Certificate not identifying owner with boat	1	2	1	2	1	2	1	...	...	1	...	...	1	...	...	...	1	...	...
Marking, &c.	6	9	6	4	3	4	1	...	...	1	...	...	1	...	...	...	...	...	...
Overcrowding	1	...	1	...	...	...	...	...	...	...	...	...	2	...	...	...	...	...	...
Partition separating sexes	...	...	...	...	...	...	...	...	...	...	...	...	2	...	...	...	...	...	...
Males over age	...	...	...	...	...	...	...	...	...	...	...	...	1	...	...	...	...	...	...
Females over age	...	...	...	...	...	...	...	...	...	...	...	...	1	...	...	...	...	...	...
Cleanliness	...	...	...	...	...	...	...	...	...	...	...	...	2	...	...	...	...	...	...
Painting	10	4	...	1	6	4	1	1	1	...	...	...	1	...	...	...	1	...	...
Ventilation	12	14	2	...	5	6	2	1	1	...	...	...	1	...	...	...	...	...	...
Dilapidation	7	3	2	1	...	2	...	...	...	...	...	...	5	...	...	...	...	...	...
Removal of bilge water	37	22	25	19	19	24	2	3	2	1	1	1	1	...	...	...	...	...	...
Without pump	...	...	2	...	1	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Refusal to admit Inspector	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
No proper water vessel	8	7	...	...	...	4	1	...	...	2	...	...	...	...	...	...	...	...	...
Without double bulkhead	...	...	...	...	...	3	...	1	1	...	...	1	...	...	...	...	...	...	...
Notification of infectious disease	...	...	...	...	1	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Detained for cleansing	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Proceedings taken	1	1	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Cautions given	69	39	34	36	31	33	3	4	1	1	2	2	6	...	...	3	3	...	...
" attended to	54	38	21	9	34	20	...	2	8	1	3	1	3	...	...	1	...	...	...

Registered for 467 persons.

Carrying males 194.
females 61.
children 81.Total registered by Port Sanitary Authority since 1887 ... 488
Cancelled ... 216

Actual number on the Register, 31st December, 1920 ... 272

APPENDIX.

RETURN OF RATS EXAMINED FOR EVIDENCE OF PLAGUE DURING YEAR ENDED 31st DECEMBER, 1920.

DOCK.	Number from each Dock.	Found Dead.	Trapped.	Found Dead.				Trapped.				Infected.	Non-Infected.	Infected.				Non-Infected.							
				M.D.	M.R.	M.A.	M.M.	M.D.	M.R.	M.A.	M.M.			M.D.	M.R.	M.A.	M.M.	Found Dead.	Trapped.	Found Dead.	Trapped.				
Royal Victoria Dock -	1,188	7	1,181	7	...	...	...	888	285	15	...	...	1,188	...	...	...	...	888	285	15	...	...	...	7	1,181
Royal Albert Dock -	1,747	9	1,738	8	1	...	...	1,461	277	9	...	...	1,747	...	...	...	...	1,461	277	9	...	...	...	9	1,738
St. Katherine's Dock -	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
London Dock -	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Millwall Dock -	324	1	323	...	1	...	...	200	115	9	...	...	324	...	...	...	...	200	115	9	...	...	...	1	323
East India Dock -	42	4	38	3	1	...	...	30	10	2	...	...	42	...	...	...	...	30	10	2	...	...	...	4	38
West India Dock -	48	...	48	...	...	...	...	31	17	...	...	...	48	...	...	...	...	31	17	...	...	...	...	...	48
Surrey Commercial Dock	2	...	2	...	...	...	...	1	1	...	...	...	2	...	...	...	...	1	1	...	...	...	...	...	2
Tilbury Dock -	221	...	221	...	...	...	...	157	62	2	...	...	221	...	...	...	...	157	62	2	...	...	...	...	221
South West India Dock -	8	...	8	...	...	...	...	5	2	1	...	...	8	...	...	...	...	5	2	1	...	...	...	...	8
Unknown (dock) -	85	...	85	...	...	...	...	64	21	...	...	...	85	...	...	...	...	64	21	...	...	...	...	...	85
	3,665	21	3,644	18	3	...	...	2,837	790	38	...	...	3,665	...	...	...	...	2,837	790	38	...	...	...	21	3,644
		3,665		3,665				3,665					3,665				3,665								

ADMINISTRATION OF THE PORT OF LONDON PUBLIC HEALTH (LONDON) ACT, 1891.

Dr. REVENUE ACCOUNT for the Year ended 31st March, 1921. *Cr.*

	£	s.	d.	£	s.	d.		£	s.	d.
To Salaries of Medical Officers and Clerk	5,341	12	8							
„ Payment to Locum Tenens	44	9	6							
„ Wages	6,583	3	9							
„ Contributions to Officers' Pension Funds... ..	558	14	2							
„ Ditto for Pensions	82	7	8							
„ Pensions	476	13	4							
„ Fidelity Guarantees	1	16	0							
„ Employers' Liability under Workmen's Compensation Acts	50	3	10							
„ National Health Insurance	15	6	3							
„ Officers' Uniforms	378	0	4							
„ Expenses of Steam Launches and Hulk	9,836	10	0							
„ Expenses of Offices at Greenwich, including Rent, Rates, Taxes, Lighting, Heating and Repairs	255	2	6							
„ Expenses of Medical Officer, including Office Expenses, Postages and Petty Cash Charges	407	1	2							
				24,031			1	2		
„ Hospital at Denton, viz. :—										
Expenses of Nursing Staff	290	17	2							
Rent, Rates, Taxes and Insurance	199	12	4							
Wages	531	10	0							
Maintenance and Repairs	370	17	9							
Maintenance of Patients, &c.	217	17	5							
	1,120									
<i>Less</i> Reimbursements for Main- tenance of Patients	286									
				834			0	8		
Miscellaneous Expenses, including Coal, Stores, and Telephone	281	18	7							
				1,606			8	9		
„ Printing and Stationery	294	8	11							
„ Disinfectants	81	15	0							
„ Expenses <i>re</i> Epidemic precautions, Examination of Rats, and Analysis of Food Samples	446	12	1							
„ Proceeds of Unsound Food paid to Consignees (for amounts received <i>see contra</i>) and Expenses	1,428	1	6							
„ Expenses of Inspection of the River	112	10	0							
„ Committee Allowance	112	10	0							
„ Expenses of Delegates to Congress of Royal Sanitary Institutes	101	17	0							
„ Miscellaneous Expenses	77	0	0							
	£28,292			4	5					
								£28,292 4 5		

CHAMBER OF LONDON,
5th August, 1921.

Charles Skipper and East, Printers, 49, Great Tower Street, E.C.3.

02