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PORT OF LIVERPOOL

ANNUAL REPORT

OF THE

MEDICAL OFFICER OF HEALTH

TO THE

PORT SANITARY AUTHORITY

FOR THE YEAR

1930

BY

A. A. MUSSEN, B.A., M.D., D.P.H.,
Port Medical Officer of Health.

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PORT SANITARY AUTHORITY

OF

LIVERPOOL.

REPORT FOR THE YEAR 1930,

BY THE

MEDICAL OFFICER OF HEALTH.

The report of the operations of the Liverpool Port Sanitary Authority for the year 1930 is submitted herewith.

The report covers the work of the Authority during the year and includes an account of :—

(*a*) Measures adopted under the Cholera, Plague and Yellow Fever and Allied Orders of the Local Government Board, and under the Port Sanitary Authorities (Infectious Diseases) Regulations, 1920.

(*b*) The measure taken to reduce the number of rats on dock quays and in ships, and to ascertain the existence of plague among any such rats.

(*c*) The measures taken in regard to the sanitation of vessels.

(*d*) The inspection of imported foodstuffs under the Public Health (Imported Food) Regulations, etc.

(*e*) The medical inspection of aliens under the Aliens Order, 1920,

together with observations on various aspects of Port Sanitary Administration.

The Port of Liverpool trades with all parts of the world, and almost every conceivable kind of cargo is carried by Liverpool ships.

AMOUNT OF SHIPPING ENTERING THE PORT SANITARY DISTRICT DURING THE YEAR 1930.

Class of Vessels.	Number.	Tonnage.	Number Inspected.		Number reported to be defective.	Number of vessels on which defects were remedied.
			By the Medical Officer.	By the Sanitary Inspector.		
	(1)	(2)	(3)	(4)	(5)	(6)
SAILING FOREIGN—						
Steamers	7,347	13,080,217	865	3,675	576	569
*Motor	392	1,171,518				
Sailing	21	5,962	—	2	—	—
Fishing	—	—	—	—	—	—
TOTAL FOREIGN	7,760	14,257,697	865	3,677	576	569
SAILING COASTWISE—						
Steamers	6,563	2,001,135	7	562	24	21
*Motor	1,422	616,912				
Sailing	77	10,173	—	8	—	—
Fishing	—	—	—	—	—	—
TOTAL COASTWISE	8,062	2,628,220	7	570	24	21
TOTAL FOREIGN AND COASTWISE	15,822	16,885,917	872	4,247	600	590

* (Includes mechanically-propelled vessels other than steamers.)
Figures in columns 1 and 2 supplied by H.M. Collector of Customs for this Port.

Character of Trade of Port.

PASSENGER TRAFFIC DURING 1930.

No. of Passengers ...	1st Class.	2nd Class.	3rd Class.	Transmigrants.
Inwards	8,990	18,458	38,048	4,701
Outwards	18,087	23,934	49,472	8,258

Source of Water Supply.

The water used in the docks on the Liverpool side of the River Mersey is supplied by the Liverpool Corporation. Vessels in dock are supplied from hydrants from the same source, and vessels in docks on the Birkenhead side of the River Mersey are supplied with water by the Birkenhead Corporation and the Wallasey Corporation.

There are no water boats in use in the Port of Liverpool, all water being drawn from hydrants on the quayside.

Infectious Disease.

The measures adopted in Liverpool to prevent the importation of infectious disease from abroad are as follows :—

(1) The boarding by the assistant port medical officers of certain vessels on arrival in the river and before docking, viz. :—

(*a*) Vessels from certain parts of the world where dangerous infectious disease is known to exist.

(*b*) Vessels on which infectious disease exists at the time of arrival, or has occurred during the voyage.

(2) The visiting of *all vessels* in dock by sanitary inspectors as soon as possible after docking.

(3) The trapping of rats in ships and on quays and their examination for signs of plague infection.

(4) Co-operation with the officers of H.M. Customs, who report to the Port Sanitary Authority, if they obtain information of sickness on board vessels visited by them.

Information of the arrival of vessels which, under the regulations of the Port Sanitary Authority, must be boarded by the port medical officer before docking, is obtained through the assistance of the pilots. All vessels, except very small craft, must be navigated into the port by either a licensed pilot or a master or mate holding a Liverpool pilot's certificate, and willing assistance has always been given by the pilots in carrying out the regulations.

All pilots are supplied by the Liverpool Port Sanitary Authority with a book containing questions to be put to the master immediately on boarding, and also a list of infected ports where dangerous infectious disease is known to exist. These instructions, together with the list of infected ports, are amended from time to time, and at present are as follows :—

Port of Liverpool Sanitary Authority

To Pilots, and Masters of Inward Bound Vessels.

1. All Pilots should carry this booklet when on duty and immediately on boarding **any** inward bound ship should instruct the Master to read these directions carefully and to answer the following questions :—

(i) Have you during the voyage had on board any case of INFECTIOUS DISEASE, or any sickness which may be of an infectious nature ?

(ii) Have you, within the previous two months called at any of the ports mentioned on the opposite page ?

If the answer to either question is " Yes," or if the Master is in any doubt as to the nature of any sickness or the cause of any death which has occurred on board, the Pilot should instruct the Master as follows :—

(i) To send a wireless message to " STORM, LIVERPOOL," giving name of vessel, expected time of arrival in the Mersey, whether for Liverpool (North or South), Birkenhead, Garston or Manchester, and stating that the Doctor is required.

(ii) To report Formby Lightship for the Doctor.

(iii) To hoist the Quarantine Flag by day and the Quarantine Light by night.

NOTE.—The strict observance of the directions will greatly facilitate the clearance of vessels.

Pilots should, therefore :—

(1) Carry out these directions in regard to **every** inward bound ship.

(2) See that this booklet contains the latest list of infected Ports.

(3) Immediately apply to the Port Sanitary Authority, Prince's Pier Head, Liverpool, if they lose this booklet.

LIST OF

INFECTED PORTS.

SINGAPORE
JAVA PORTS
RANGOON
INDIAN PORTS
COLOMBO
ALEXANDRIA
BEYROUT
GRECIAN PORTS
MADAGASCAR
LAGOS
PERUVIAN PORTS
GUAYAQUIL
RIVER PLATE PORTS
DAKAR
BAHIA.

Other ports are added or deleted from time to time according to the prevalence of disease.

PORT SANITARY AUTHORITY.

A medical officer is available both day and night for the purpose of boarding, by means of the boarding launch "Moyles," incoming vessels from infected ports, or vessels which have cases of infectious disease on board at the time of arrival. During the year 652 vessels were boarded in the river by the assistant port medical officers, and in addition 220 vessels were visited for the purpose of alien and other inspection. All vessels, whether from infected ports or not, arriving in Liverpool are visited as soon as possible after docking by a sanitary inspector, who enquires into the occurrence of any sickness during the voyage, and if necessary communicates with the port medical officer.

The deratisation or deratisation exemption certificate (whichever the case may be) is inspected, and if found to be in order the inspector proceeds to the examination of the sanitary condition of the vessel, pointing out any defects and suggesting the remedy to be adopted. It has been found that the shipping companies are always ready and willing to remedy any defects in their vessels which have been pointed out to them by the port sanitary inspectors.

Arrangements for disposal of cases of Infectious Disease and for observation or surveillance of contacts.

Cases of smallpox, plague, cholera or yellow fever are removed from the vessel before docking by the M.L. "Moyles," and conveyed to the Port Sanitary Hospital, New Ferry, by water. Cases of infectious disease other than the above are removed, usually after the vessel docks, to one of the city hospitals by means of the Health Committee's motor ambulances. Contacts of infectious cases, if not removed to hospital, and living at addresses in the city, are kept under observation by the city sanitary inspectors, and in the event of any contact proceeding to an address outside the city, the medical officer of health of the district concerned is advised.

The Port Isolation Hospital.

The Isolation Hospital was erected in 1877 at New Ferry, in the County of Cheshire, on land adjoining the River Mersey, and close to the quarantine station in the Sloyne anchorage ground. A slipway extends from the hospital to the water edge, and is available for the landing of patients from half-tide to high water.

The hospital is well placed for the admission of cases from the river, and it is also quite convenient of access by road, being less than a quarter of a mile away from a main road.

The hospital was extended in 1901 and 1902 by the addition of a new pavilion, a suitable laundry and steam disinfector, also additional nurses' quarters.

The premises are chiefly used for the isolation of sea-borne cases of infectious disease, but from time to time cases have been received on behalf of neighbouring authorities, under special agreement, when accommodation has been available.

On the other hand, owing to the different types of infectious disease occurring on vessels coming into the Mersey, and the necessity for providing separate accommodation for men, women and children, it has been advantageous to admit cases of ordinary infection to the City Hospitals where cases of a similar character are already accommodated.

Arrangements for disinfection of Infected Quarters, Bedding, Clothing, etc.

Infected quarters are disinfected as soon as possible by means of liquid sulphur dioxide (sulphume) or by spraying with disinfectant; the bedding, clothing, etc., are removed by vans to the Charters Street disinfecting station and there disinfected by steam.

Arrangements for Cleansing of Persons.

This is carried out at either the City Hospital, Sparrow Hall, or the City Hospital North, Netherfield Road, to which the patients are conveyed by motor ambulance.

Arrangements for Ambulance Transport.

The motor ambulances of the Liverpool Corporation are available for this purpose.

Arrangements for detection and treatment of Venereal Disease among sailors,

Careful enquiries are made by the boarding medical officers and the port sanitary inspectors into the history of cases that may have been

reported during the voyage. This is usually obtained from responsible officers of the ship, e.g., captain or engineer.

Leaflets, stating the times of attendance at the various venereal disease clinics in the city, are distributed freely to masters of vessels; treatment at these clinics is obtained free of cost to the patient, and in all instances the masters of vessels are advised to arrange for the attendance of the patient at one of the clinics.

Arrangements for bacteriological examination of rats.

The systematic examination of rats caught by the Port Sanitary staff is carried out by the Liverpool City Bacteriologist.

During the year 3,504 rats were examined for possible plague infection, 1,830 being from ships, and 1,674 from the sheds and quays at the docks, with the result that no evidence of the bacillus of plague was found (see page 56).

Smallpox.

S.S. "Tairoa" arrived at Liverpool on 23rd February, 1930, from Glasgow. This vessel left London on 5th February, and called at Cardiff (6th February), Liverpool (8th February), Glasgow (13th February), finally arriving at Liverpool on 23rd February. During the vessel's stay at Glasgow between 15th-22nd February, a mess room steward reported sick and was attended by the company's doctor. On arrival at Liverpool he was seen by the company's medical superintendent, who communicated with the Port Sanitary Authority on 25th February. The vessel was visited immediately by the assistant port medical officer, and the case was diagnosed as smallpox and removed to hospital, together with one close contact. It was ascertained that the patient had been in contact with a case of smallpox before joining the vessel in London. Vaccination was offered to all persons on board, and with the exception of one man all availed themselves of the offer. The cabin, bedding and effects of the patient were disinfected by the Port Sanitary Authority, and the remainder of the crew's quarters were fumigated with sulphur dioxide by the shipping company. The crew were kept under observation until the expiration of the incubation period, and no further cases occurred.

Suspected Smallpox.

S.S. "Britannia." This vessel arrived in the Mersey from Bombay on 13th March, 1930. Information had been received previously from the Ministry of Health that one case of mild smallpox had been removed to hospital at Suez. The vessel was boarded on arrival by the assistant port medical officers, and all passengers and crew were examined. Two Goanese stewards were found to be suffering from chickenpox, and together with one close contact, were removed to the Port Sanitary Hospital by the M.L. "Moyles." All persons on board had been vaccinated or re-vaccinated by the ship's surgeon. Disinfection of the quarters and effects was carried out by the Port Sanitary Authority. The addresses of destination were checked and the medical officers of health of the districts concerned were notified. No further cases occurred.

S.S. "City of Salford." This vessel arrived in the Mersey on 7th April, 1930, from Bombay, and was boarded in the river by the assistant port medical officer. It was reported that two cases of smallpox had been landed at Aden on 10th March, 1930, and that complete disinfection and vaccination of the crew had been carried out. All persons on board were examined, but no further cases were discovered: as the incubation period had expired before the vessel reached the Mersey no further action was taken.

S.S. "Ariosto." This vessel arrived in the Mersey on 9th April, 1930, and was boarded by the assistant port medical officer. It was reported that one of the officers had been landed at Calicut, India, on 2nd March, suffering from smallpox. Complete disinfection and vaccination of the crew had been carried out. One case of chickenpox was landed at Cochin on 5th March, but no further sickness occurred. All on board were well on arrival at Liverpool, and as the incubation period had expired no further action was taken.

S.S. "Matoppo." This vessel arrived in the Mersey on 2nd May, 1930, and was boarded by the assistant port medical officer. The captain reported that five members of the native crew had been landed during the voyage suffering from smallpox. The crew had all been re-vaccinated at Marmagoa (24th March), and again at Suez (16th April). Disinfection of the living quarters had been carried out at

Marmagoa, Allepi and Suez. From the history given by the master of the vessel it would appear likely that all these cases were chickenpox.

S.S. " Elysia." This vessel arrived in the Mersey on 3rd May, 1930, from Bombay, and was boarded in the river by the assistant port medical officer. The ship's surgeon reported that a Lascar member of the crew was landed at Port Sudan on 13th April suffering from smallpox. All persons on board were vaccinated or re-vaccinated by the ship's surgeon, no further cases arose and as the incubation period had expired by the time the vessel arrived at Liverpool, no further action was taken.

In the case of two other vessels which had landed smallpox patients elsewhere, the incubation period had expired before the arrival of the vessels at Liverpool, so that it was only necessary to inspect all persons on board to ensure that no secondary cases had been overlooked.

Anthrax.

The importation of large amounts of animal products, which are handled in transit to stores or manufactories, has associated with it the risk of human infection with the anthrax bacillus, causing a condition known as malignant pustule or cutaneous anthrax.

During the year 1930, nine cases of this disease were notified to the Health Department and admitted to Liverpool City Hospitals. Of these patients only three were associated with work in Liverpool, one lived in Bootle, whilst four came from Runcorn, where three of them had been engaged in various processes of the tanning industry; another case was from Litherland.

It is of interest to note that owing to the facilities now available, many workers, when they develop signs of suspected anthrax, avail themselves at once of these opportunities for prompt diagnosis.

During the course of the year 53 persons voluntarily came to the Fazakerley Hospital for examination of suspicious " pimples " and the like. Two of these proved to be anthrax and were detained. In addition to these, 15 patients were brought in as suspicious cases for investigation.

One man who had been in close contact with anthrax infected cattle was admitted for observation and protective injection of serum.

Conditions sent in as suspect anthrax infections included carbuncle, boils, simple pustules, cellulitis, and one patient suffering from accidental vaccination on the lip.

The site of the pustule was usually on an exposed part of the person, either the face (5), or neck (4).

The occupations followed were as follows:—Three were dock labourers engaged in the discharge of ships, landing dry hides from East Africa and other places. One was a lorry driver frequently carrying hides in his van. Five patients were sent in from Runcorn; these were employed in tanneries and had handled hides from various countries. There were two deaths.

Favourable reports on the results of serum treatment are now being obtained at the City Hospital, Fazakerley, where cases come under observation soon after infection and the diagnosis can be promptly verified. It is, therefore, the wish of the Health Authorities that cases or suspected cases of anthrax be sent without delay to this hospital for admission, when the necessary steps will be taken to diagnose the illness and place the patient under serum treatment.

The fatal cases frequently quoted emphasise the importance of early diagnosis and serum treatment in all cases of this disease.

The business firms connected with the hide and skin trade in Liverpool and neighbourhood have recognised the importance of the points above enumerated in regard to early diagnosis and serum treatment, and have conferred with the Liverpool Health Authorities with the object of taking further measures to educate the workers as to the

risks involved in handling goods of animal origin, particularly hides and skins.

Posters have been printed on the subject and are affixed in suitable places. A pocket card has also been issued containing full information regarding the appearance and symptoms of cutaneous anthrax and advice on the action to be taken. Arrangements are also made to admit all cases of anthrax or suspected anthrax direct to Fazakerley hospital.

Special arrangements have been made for the treatment of cases coming from districts outside Liverpool.

The question of the disinfection of hides and skins is still under consideration, but there are difficulties in evolving a method which will be successful, not only in destroying the anthrax spore without damaging the material, but one which can be utilised on a commercial scale.

In order to eliminate as far as possible the handling of hides by dock labourers and others, the hide trade connected with this Port have agreed not to open bales of China hides at the docks beyond what is necessary for sampling purposes.

The disinfection of imported dangerous wools at the Government Wool Disinfection Station, Love Lane, is still in progress, and the Liverpool Port Sanitary Authorities assist by having samples of the untreated wools and those which have passed through the disinfecting process, examined by the City Bacteriologist; this helps to confirm and control the Duckering disinfecting process. During the year, 66 samples were examined after disinfection, and all were found to be free from anthrax; three of the original untreated samples showed evidence of positive infection.

The Ministry of Agriculture has drawn attention to the danger to farm animals in Great Britain in connection with the shipment in foreign ports of commodities containing the spores of anthrax. The disease is prevalent in animals in many parts of the world from which supplies of raw hides, hair, wool and feeding stuffs, e.g., cattle cake and the ingredients thereof, are drawn. Infection is conveyed to the farm by means of these and other animal substances from foreign countries, especially those places where inadequate precautions are taken or where none exist.

Anthrax spores may be shaken from the above-mentioned animal products and may become mixed with foodstuffs or hold-sweepings, and thus infection may be indirectly conveyed to animals of the farm.

The suggestion is made that special precautions should be adopted so that dried hides, wool, hair, &c., should not be carried, mixed with or be placed on top of grain or feeding stuffs, and that the holds which have contained animal products of this nature should be thoroughly disinfected; further, that the sweepings of holds containing grain, etc., should not be mixed with other foodstuffs.

The Ministry of Agriculture recommends the following process for disinfection :—

"Thoroughly sprinkle the compartment to be disinfected with an antiseptic solution to prevent the raising of dust. Sweep down the sides and floors; carefully collect all dust and refuse therefrom and destroy by fire. Then wash the sides and floors with strong solution of miscible carbolic acid (not less than 5 per cent. of acid) or a 3 per cent. solution of formalin, which contains not less than 40 per cent. of formaldehyde. Persons employed on the work should wear indiarubber gloves as a protection against inoculation, and also respirators."

The spores of anthrax bacillus have great resisting power, and may remain active for years unless measures are taken to destroy them.

TABLE GIVING PARTICULARS OF THE INCIDENCE OF ANTHRAX CASES IN THE UNITED KINGDOM, NOTIFIED TO THE CHIEF INSPECTOR OF FACTORIES, UNDER SECTION 73 OF THE FACTORY AND WORKSHOP ACT, 1901.

Anthrax.	1929	1928	1927	1926	1920	1910	1900
Cases Notified ...	*40-(5)	45-(8)	31-(2)	38-(3)	48-(11)	51-(9)	37-(7)
Wool	16-(2)	14-(2)	18-(1)	15-(2)	25-(7)	28-(3)	10-(2)
Horsehair	3	4-(1)	3-(1)	8-(1)	5-(1)	6-(1)	12-(3)
Hides and Skins ...	20-(3)	24-(3)	9	12	17-(3)	14-(3)	9-(1)
Other Industries ...	1	3-(2)	1	3	1	3-(2)	6-(1)

Extracted from the Annual Report of the Chief Inspector of Factories for theyear 1929.
*The principal figures relate to cases and the bracketed figures to deaths.

Yellow Fever.

No cases of yellow fever were reported in Liverpool bound vessels during the year.

Malaria.

During the year 1930 there were 54 new cases of malarial fever, which were either landed in Liverpool or had recovered abroad in 30 vessels; the names and addresses of the patients, with particulars of the treatment and the dosage of quinine given, together with the movements of the vessels, were forwarded to the Ministry of Health.

Plague.

No case of human plague was landed in Liverpool during the year. No rodent plague was discovered among the rat population during the year either in ships or on quays.

PARTICULARS RELATING TO PLAGUE " INFECTED " OR " SUSPECTED " VESSELS ARRIVING IN THE PORT DURING 1930.

Name of Vessel.	Date of Arrival.	Whether " Infected " or " Suspected."	Methods of Rat Destruction Employed.	Number of Dead Rats Recovered.			Whether a Certificate of Deratisation was Issued.	Remarks.
—	—	—	—	—	—	—	—	—
No vessels of	this character	arrived.						

MEASURES OF RAT DESTRUCTION ON VESSELS FROM PLAGUE INFECTED PORTS (OTHER THAN THOSE INCLUDED IN ABOVE) ARRIVING IN THE PORT DURING 1930, AND NUMBER OF CERTIFICATES ISSUED IN RESPECT OF SUCH VESSELS.

Total Vessels from Plague Infected Ports.	Number of such Vessels Fumigated by $S.O_2$.	Number of Dead Rats Recovered.		Number of such Vessels Fumigated by H.C.N.	Number of Dead Rats Recovered.		Number of such Vessels on which Trapping, etc., were Employed.	Number of Dead Rats Recovered.		Number of such Vessels on which Measures of Rat Destruction were not carried out.	Number of Fumigation Certificates Issued on Form 11.		Number of other Certificates Issued.
											Deratisation.	Exemption.	
		Rats.	Mice.		Rats.	Mice.		Rats.	Mice.				
557	37	307	8	44	393	17	543	988	3	14	81	48	—

MEASURES OF RAT DESTRUCTION ON VESSELS OTHER THAN THOSE IN ABOVE TABLES, AND NUMBER OF CERTIFICATES ISSUED IN RESPECT OF SUCH VESSELS DURING 1930.

Number of Vessels Fumigated by $S.O_2$.	Number of Dead Rats Recovered.		Number of Vessels Fumigated by H.C.N.	Number of Dead Rats Recovered.		Number of Vessels on which Trapping, etc., were Employed.	Number of Dead Rats Recovered.		Number of Certificates Issued on Form " Port 11."		Number of other Certificates Issued.
									Deratisation.	Exemption.	
	Rats.	Mice.		Rats.	Mice.		Rats.	Mice.			
85	733	44	41	311	4	756	1019	20	106	268	—

TABLE SHOWING THE NUMBER OF RATS AND MICE OBTAINED ON SHIPS AND QUAYS BY THE AUTHORITY'S RAT-CATCHERS DURING THE YEARS 1921-1930.

Year.	NUMBER OBTAINED.			NUMBER					
				EXAMINED.			DESTROYED.		
	From Ships.	From Quays.	Total.	From Ships.	From Quays.	Total.	From Ships.	From Quays.	Total.
1921	8,867	2,405	11,272	5,031	2,195	7,226	3,836	210	4,046
1922	10,642	2,830	13,472	5,520	2,519	8,039	5,122	311	5,433
1923	12,097	1,625	13,722	5,629	1,460	7,089	6,466	167	6,633
1924	13,509	1,963	15,472	4,981	1,658	6,639	8,528	305	8,833
1925	11,088	2,508	13,596	4,882	2,065	6,947	6,206	443	6,649
1926	8,827	2,800	11,627	4,493	2,312	6,805	4,324	488	4,822
1927	8,134	2,496	10,630	4,836	1,945	6,781	3,298	551	3,849
1928	7,351	2,414	9,765	4,145	1,918	6,063	3,206	496	3,702
1929	7,036	1,456	8,492	3,408	1,271	4,679	3,628	185	3,813
1930	3,847	2,046	*5,893	1,841	1,731	3,572	2,006	315	2,321
Total.....	91,398	22,543	113,941	44,766	19,074	63,840	46,630	3,471	50,101

* 166 mice are included in these figures.

NUMBER AND SPECIES OF RATS CAUGHT IN THE CITY AND PORT OF LIVERPOOL, DURING THE YEAR 1930.

1930.	Warehouses.		Sewers.		Other Places		Total.		Ships.		Quays.		Other Sources.		Total.	
	Black.	Brown.	Black.	Brown.	Black.	Brown.	Black.	Brown.	Black.	Brown.	Black.	Brown.	Black.	Brown.	Black.	Brown.
January ...	179	293	—	498	54	470	233	1,261	540	—	119	5	6	2	665	7
February ...	148	287	—	433	36	304	184	1,024	287	—	127	25	25	5	439	30
March	124	316	—	432	91	501	215	1,249	530	3	82	7	32	3	644	13
April	122	385	—	469	18	384	140	1,238	232	—	118	11	16	1	366	12
May	213	362	—	515	32	923	245	1,800	260	—	126	27	21	3	407	30
June	100	277	—	474	45	378	145	1,129	275	—	93	15	14	1	382	16
July	102	228	—	591	15	484	117	1,303	295	—	65	18	15	1	375	19
August ...	85	201	—	390	57	376	142	967	282	1	78	18	48	8	408	27
September ...	53	207	—	567	96	491	149	1,265	240	—	101	8	80	7	421	15
October ..	201	214	—	552	72	554	273	1,320	267	1	124	16	94	75	485	92
November ...	68	160	—	518	48	543	116	1,221	344	4	102	17	47	24	493	45
December ...	77	123	—	392	24	547	101	1,062	190	—	71	31	33	11	294	42
TOTAL ...	1,472	3,053	—	5,831	588	5,955	2,060	14,839	3,742	9	1,206	198	431	141	5,379	348

NUMBER AND SPECIES OF RATS EXAMINED OR DESTROYED IN THE CITY AND PORT OF LIVERPOOL, DURING THE YEAR 1930.

1930.	Examined (City).		Destroyed (City)		Examined (Port).		Destroyed (Port).		Total Caught. City and Port.
	Black.	Brown.	Black.	Brown.	Black.	Brown.	Black.	Brown.	Black and Brown.
January	45	315	188	946	322	7	343	—	2,166
February	45	248	139	776	313	17	126	13	1,677
March	36	286	179	963	308	9	336	4	2,121
April	24	274	116	964	260	10	106	2	1,756
May	38	338	207	1,462	249	22	158	8	2,482
June	20	255	125	874	244	14	138	2	1,672
July	24	300	93	1,003	230	19	145	—	1,814
August	20	217	122	750	201	22	207	5	1,544
September	27	311	122	954	248	15	173	—	1,850
October	63	297	210	1,023	343	88	142	4	2,170
November	22	285	94	936	288	45	205	—	1,875
December	29	217	72	845	192	38	102	4	1,499
TOTAL	393	3,343	1,667	11,496	3,198	306	2,181	42	22,626

RATS DESTROYED DURING 1930.

(1) ON VESSELS.

	Jan.	Feb.	Mar.	April.	May.	June	July.	Aug.	Sept.	Oct.	Nov.	Dec.	Total.
Black	540	287	530	232	260	275	295	282	240	267	344	190	3,742
Brown	—	—	3	—	—	—	—	1	—	1	4	—	9
Rats examined ...	220	208	206	149	136	143	156	94	96	151	163	108	1,830
Rats found infected with Plague	—	—	—	—	—	—	—	—	—	—	—	—	—

(2) QUAYS, WHARVES AND WAREHOUSES.

	Jan.	Feb.	Mar.	April.	May.	June	July.	Aug.	Sept.	Oct.	Nov.	Dec.	Total.
Black	125	152	114	134	147	107	80	126	181	218	149	104	1,637
Brown	7	30	10	12	30	16	19	26	15	91	41	42	339
Rats examined ...	109	122	111	121	135	115	93	129	167	280	170	122	1,674
Rats found infected with Plague	—	—	—	—	—	—	—	—	—	—	—	—	—

Number of Mice destroyed on vessels	96
Do. do. do. on quays	70
Do. do. examined on vessels and quays	68

The combined returns of all rats and mice caught and destroyed by shipping firms employing their own rat-catchers, by rat-catching companies, and by the Public Health Authorities, during the year 1930, are as follows :—

	Rats.	Mice.	Rats.	Mice.
PORT—				
In vessels	16,146	96		
On quays	1,976	13		
			18,122	109
CITY—				
In warehouses	4,525	4		
In sewers and from other sources ...	12,374	34		
			16,899	38
		TOTAL ...	35,021	147

Number of Visits to **Vessels** by Rat Catchers 6,057

Do. do. do. Rat Searchers 3,887

Do. do. **Quays, Sheds, etc.**, by Inspectors ... 598

Do. do. do. do. Rat Searchers 1,161

Do. do. do. do. Rat Catchers 7,308

Measures against Rodents.

Steps taken for detection of rodent plague.

Liverpool trades extensively with many ports where plague is always present. All vessels arriving from such ports are boarded, the passengers and crews are examined and careful enquiry made as to any evidence of the existence of plague among the rats on board. Medical inspection alone is not sufficient, as rodent plague may exist on board without having given rise to any human cases, and without any sick or dead rats having been seen. Consequently, as soon as the vessel berths, it is necessary—

(1) to catch samples of the rat population in all parts of the vessel;

(2) to examine the vessel in all parts, and at various times during the discharge of cargo, for sick or dead rats.

All rats so obtained are sent to the city bacteriologist for examination for plague infection.

Samples of the rat population from the dock quays, sheds and warehouses are obtained daily, and all rats so caught are submitted to the city bacteriologist for examination. The success of plague preventive measures depends entirely on the detection of the infection at the earliest possible moment, followed by the adoption of energetic measures to destroy every infected rat. Rodent plague when once established is most difficult to eradicate, and in addition to the possibility of causing human cases, it leads to the imposition of restrictions on our ships in foreign ports. In order that this work may be carried out efficiently the Port Sanitary Authority employs a staff of eleven full-time rat-catchers and rat-searchers, and one part-time rat-catcher.

Measures taken to prevent the passage of rats between ship and shore.

All vessels with the exception of coastwise vessels must have rat-guards affixed to their moorings during their stay in the port. The rat-guard used and approved of by the Port Sanitary Authority consists of a disc of galvanised sheet iron, 1/16th in. thick and three feet in diameter. The edge is left raw, i.e., not wired or turned over. In

the lower half is cut a door, hinged and so fastened when shut that no foothold is afforded to rats. The door slit leads to the central hole through which the rope passes. Round the central hole is placed a strong collar projecting about 4 in. on each side and riveted to the disc. In the collar is a strong steel spring clip, which can be adjusted by means of a winged nut and bolt. To apply the guard, the door is opened and the guard put over the rope so that the latter passes up into the central hole, where a little force is necessary to overcome the spring of the clip. The guard will now hold quite firmly and the bolt and screw closing the opening of the clip gives additional security. The door is then closed and fastened, the upper edge being fitted with a piece of thick sheet rubber attached so as to close completely the central hole whatever the size of rope in use.

A rat-guard to be effective should be placed at the ship end of the mooring and as far as possible away from the ship's side.

When vessels loaded with cargo are infected with either human or rodent plague the following procedure is adopted in order to prevent the passage of rats from the ship to the shore :—

If the vessel is loaded a preliminary fumigation may be undertaken to destroy the rats, the nature of the cargo would, however, determine this. The measures enumerated below are enforced pending discharge of cargo, when a complete and thorough deratisation takes place.

(*a*) The vessel is breasted off six feet from the quayside.

(*b*) Rat-guards are adjusted on all moorings.

(*c*) One gangway only is allowed, and a watchman is stationed on it day and night.

(*d*) The gangway must be lifted at sunset and not lowered until sunrise.

(*e*) The cargo may be discharged under supervision of the Port Sanitary staff.

(*f*) Trapping and examination of rats caught in the neighbouring sheds.

Methods of Deratisation of Ships.

Deratisation of ships is carried out by fumigation with either sulphur dioxide, hydrocyanic acid gas or salfurkose. Fumigations in the Port of Liverpool are carried out, as a rule, by private firms under the supervision of the Port Sanitary Authority. At least twenty-four hours' notice in writing must be given to the Port Sanitary Authority before the commencement of any fumigation. This notice must be on the official form, which sets out the cubic capacities of the spaces and the fumigant to be used.

Deratisation by means of sulphur dioxide gas.

(1) Sulphur dioxide. This gas is generated by burning sulphur in buckets. Only sulphur of good quality must be used, and not more than 9 lbs. of sulphur to each bucket: 3 lbs. of sulphur to every 1,000 cubic feet of air space is required, with a minimum time of exposure of six hours. In order to ensure that the whole of the sulphur is burned, it is advisable that a small quantity of wood, wool or shavings dipped in methylated spirit should be added to each receptacle.

(2) Liquid sulphur dioxide (sulphume). 6 lbs. of liquefied gas are required for every 1,000 cubic feet of air space, with a minimum time of exposure of six hours.

Deratisation by means of hydrogen cyanide.

Fumigation of vessels by means of this gas is exceedingly dangerous to human life, and may only be carried out by firms which have a specially trained staff and the necessary life saving appliances.

(1) *Liquid hydrogen cyanide.* The hydrogen cyanide gas is generated by the vaporisation of liquid hydrogen cyanide, the latter being contained in steel cylinders.

For holds, provision store rooms and peaks, 2 oz. per 1,000 cubic feet of air space is required, and for living quarters, superstructures and other spaces not used for stores, 1 oz. per 1,000 cubic feet. The minimum time of exposure in both cases is two hours.

(2) *Zyklon B.* is kieselguhr, a very absorbent infusorial earth impregnated with a mixture of hydrogen cyanide (97½ per cent.) and

tear gas ($2\frac{1}{2}$ per cent.). The mixture is packed in strong hermetically sealed tins or canisters containing 500, 1,000, 1,200 and 1,500 grammes of cyanogen. These canisters are placed near the holds in numbers necessary for fumigation of the particular cubic capacity. Each tin is opened by a special apparatus which prevents the escape of gas during the process. On removal of the lid, a thin rubber cap is placed over each tin unless the contents are to be used immediately.

When fumigation is started the tarpaulins covering the hatches are raised and the contents of the required number of tins are scattered over the bottom of the hold from the deck. The tarpaulin is then replaced and the hold closed for two hours. At the end of that time the hold is opened up and ventilated.

For holds, provision store rooms and peaks, 50 grammes of H.C.N. content per 1,000 cubic feet is required, and for living quarters and superstructures not used as storerooms 25 grammes per 1,000 cubic feet.

(3) *Liquid hydrogen cyanide* (*Gallarde process*) By this process hydrocyanic acid gas is liberated from a stabilised liquid hydrogen cyanide on exposure to the atmosphere. The liquid is contained in strong glass bottles fitted with a metal cap. Each bottle contains 400 grammes of available hydrogen cyanide. The requisite number of bottles are placed in position, the ship having previously been prepared for fumigation, and the operators then proceed to remove the metal caps and release the liquid into special containers.

The contents of one bottle is sufficient to fumigate 8,000 cubic feet, and the minimum time of exposure is two hours.

(4) *Salfurkose.* This method of fumigation has been used on several occasions during the year. The process consists of burning an inflammable liquid in double jacketed iron containers which are fitted with a baffle plate and hood in order to control the flame. The containers are of three sizes, small, medium and large. The small containers hold a maximum of five pints of salfurkose, which is sufficient to fumigate spaces up to 4,200 cubic feet. The medium containers hold a maximum of 1 gallon 2 pints of salfurkose, which is sufficient to fumigate spaces up to 8,500 cubic feet. The large containers hold a maximum of 1 gallon 7 pints of salfurkose, which

is sufficient to fumigate spaces up to 12,800 cubic feet. The time of exposure is three hours after which ventilation for a further four hours is required before the spaces can be entered with safety.

Deratisation of premises—the vicinity of docks or quays.

This is carried out by the setting of traps, the laying down of poisoned baits and occasionally by fumigation with hydrogen cyanide.

Rat Proofing.

(1) Wharves and warehouses.—With the exception of a few of the old docks on the central district, the wharves on the dock estate are of rat-proof construction, made with ferro-concrete and stone.

The roadways and pavings of the sheds are sets on a concrete foundation.

The sheds are built of brick and reinforced concrete. All sheds in the new Gladstone Dock are constructed solely of reinforced concrete, and there are no ledges, beams or angle iron on which rats may run.

All offices and wooden huts in the sheds are made rat-proof either by being lifted 18 inches clear of the ground or sheathed with iron or cemented round the base.

New offices or other buildings are either built on brick or concrete piers clear of the ground or the base is built hard and close to the paving of the shed.

Action taken to extend rat-proofing on shore.—The Mersey Docks and Harbour Board and the various shipping companies are fully alive to the necessity and benefit of rat-proofing, and practically all sheds, huts, offices and warehouses on the dock estate have now been made rat-proof. Constant supervision is required, however, in the case of stores, otherwise they tend to become harbourages for rats.

It is the duty of the sanitary inspectors to see that all stores are kept clean and tidy, and that no rubbish is allowed to accumulate. Old rope, dunnage, wood, etc., must be stacked neatly on platforms raised 18 inches from the ground, and the space beneath the platform must be kept clean and free from rubbish.

RAT-PROOFING IN SHIPS.—In the course of their routine examinations of vessels the port sanitary inspectors bring to the notice of the responsible officials any particular part which in their opinion is in need of rat-proofing. In order to make a vessel rat-proof there must be no place where rats may remain undisturbed and make their nests, and also no available food nor water supply. It should also be impossible for rats to travel freely from one part of a vessel to another. In order to accomplish this, skeleton casings are adopted for pipes in place of the older type of box casing; expanded metal is fitted round pipes, telephone wires, electric wires, etc., at the point where they pass through bulkheads or from one compartment to another.

PSITTACOSIS

The existence of acute illness in man due to the infection from sick parrots, or similar birds, has been recognised for a long time, and its frequent association with birds of the parrot tribe has caused the condition to be named " Psittacosis " (Lat. psittacus—parrot).

A considerable number of cases of this disease has occurred in England and Wales during the last two years. The disease is unfamiliar to the majority of medical practitioners, but nothing in the shape of an epidemic has been previously recorded. It is possible that a few unsuspected cases have occurred.

In July, 1929, and subsequent months, an outbreak of human cases of the disease occurred in the Argentine, and it was noticed that the cases were mostly associated with sick parrots presenting signs of nasal catarrh or diarrhœa. Enquiries showed that a large consignment of parrots had been imported into the Argentine from Brazil, and that there had been great mortality amongst them. Later, cases of illness in men occurred in various parts of the world, including Europe.

The first suspected human case in England occurred near Birmingham.

The onset of the disease is usually fairly acute, the symptoms being vague and consisting of malaise, feverishness, headache and chilliness. The lungs were involved in almost every case.

Liverpool had only six human cases, five of which were resident in one institution in the city. The cases were reported in January, 1930,

some of them being severe and requiring hospital treatment: all recovered. With one exception all the Liverpool cases were associated with the handling of a green Amazon parrot which died.

Of the total cases (117) reported on by the Ministry of Health, and occurring in this country, 25 were fatal, giving a case mortality rate of 21·3 per cent.

The occurrence of these cases throughout the country resulted in the Ministry of Health prohibiting the importation of birds of the parrot species under the Parrots (Prohibition of Import) Regulations, 1930.

It would appear desirable that birds of this character should not be kissed or caressed or fed from the mouth owing to the grave danger of transmitting disease.

Prompt enquiry was made into all cases by the staff of the department and there was no extension of the outbreak.

INFECTIOUS DISEASE.

The numbers of cases of infectious disease *landed from vessels* arriving in the Port of Liverpool and those occurring on Liverpool bound ships and which were disposed of *prior to the arrival* of the vessels at the port, together with the average for the preceding five years, are shown in the following tables :—

CASES OF INFECTIOUS SICKNESS LANDED FROM VESSELS.

Diseases.	No. of Cases during 1930.		Average No. of Cases for previous 5 years.	No. of Vessels concerned.
	Passengers.	Crew.		
Smallpox	—	1	0·4	1
Scarlet Fever...	3	5	11	7
Enteric Fever and Paratyphoid Fever	2	3	10	5
Diphtheria	1	2	4	3
Measles and German Measles ...	6	—	19	5
Chickenpox	16	4	17	13
Tuberculosis	48	32	66	67
Pneumonia	4	9	17	10
Dysentery	—	4	4	4
Malaria	10	28	33	28
	90	88	181	143

CASES OF INFECTIOUS SICKNESS OCCURRING ON VESSELS DURING THE VOYAGE BUT DISPOSED OF PRIOR TO ARRIVAL.

Diseases.	No. of Cases during 1930.		Average No. of Cases for previous 5 years.	No. of Vessels concerned.
	Passengers.	Crew.		
Smallpox	—	12	10	7
Scarlet Fever...	9	6	6	10
Enteric Fever and Paratyphoid Fever	3	12	25	14
Diphtheria	6	2	4	7
Measles and German Measles ...	29	15	48	24
Erysipelas	—	2	4	2
Chickenpox	29	3	32	18
Tuberculosis	16	26	42	34
Encephalitis Lethargica	—	1	0·4	1
Pneumonia	17	26	42	39
Dysentery	7	10	15	11
Malaria	31	169	245	80
	147	284	473	247

In all these diseases it is not only a fatal issue which is dreaded, but there are some diseases, e.g., malaria and venereal diseases,* which, if left untreated will become chronic or incurable. The reasons why sailors are more exposed to such diseases than other men is plain enough. Their calling continually brings them into contact with countries where disease and epidemics are prevalent and ashore they mix with that part of the population which is mostly infected.

* There were 238 cases of venereal disease reported on board 165 vessels arriving in the Port during the year. These were referred where circumstances required, for treatment at the Seamen's Dispensary.

Venereal Diseases.

A very important subject which has close association with seafaring life is the prevalence of venereal diseases. These diseases as we all know attack only the human species and unless well and speedily treated may pursue a very chronic, painful and crippling course.

The scheme arranged by the Ministry of Health in 1917 has now had a long spell of trial and very good results may be claimed from it. The treatment offered free of charge with full facilities for diagnosis and a supply of special drugs has been fully availed of by many classes of patients.

Seamen have been specially catered for at centres placed near docks or in the vicinity of offices where seamen congregate or sign off. There are several venereal diseases clinics in Liverpool, but one centre near the docks named the Seamen's Dispensary, established specially for the treatment of this disease in sailors has proved a great success. It was opened in 1924, and now has a high average attendance.

For those patients who have to go to sea or to another port the usual Form V44, with a full history and details of the treatment already received, is very valuable.

The weakness in the system is that more expert treatment is required than can usually be given on board ship, and so in many cases the men continue to go to sea and the disease may relapse.

Such uncured cases should, under these circumstances, remain ashore for continued treatment, or after short voyages return for continuation treatment at the dispensary or clinic.

Where a seaman is found on medical examination before signing on to be suffering from venereal disease he should be referred for medical treatment to a clinic and should not be re-engaged until it is certified that he is fit for sea.

The purpose of the establishment by the Corporation of venereal disease schemes is to afford facilities for the diagnosis and treatment

of these diseases in accordance with the recommendations of the Royal Commission in 1917.

The recommendations may be summarised as follows :—

1. That opportunities should be afforded to sufferers to have free and expert treatment.

2. That extended facilities should be provided for the diagnosis of these diseases.

3. That information as to the dangers of venereal diseases should be disseminated, and particulars given to the public as to the facilities provided for free treatment.

Clinics have been established as under :—

Seamen's Dispensary—Males only.

*Royal Infirmary—Males and Females.

David Lewis Northern Hospital—Males and Females.

*Royal Southern Hospital—Males and Females.

*Stanley Hospital—Males and Females.

Medical Home, Edge Lane—Females.

* Beds are reserved for in-patients at these Institutions.

The following summarises the work of the treatment centres for the year 1930 :—

RETURN SHOWING THE NUMBER OF NEW CASES ATTENDING THE VENEREAL DISEASES CLINICS DURING THE YEAR 1930, ALSO TOTAL ATTENDANCES AND IN-PATIENT DAYS OF OLD AND NEW PATIENTS DURING SAME PERIOD.

	Seamen's Dispensary Males only.	Royal Infirmary. Males and Females.	Royal Southern Hospital. Males and Females.	David Lewis Northern Hospital. Males and Females.	Stanley Hospital. Males and Females.	Edge Lane Medical Home. Females.	TOTAL. Males and Females.
New Cases	2,262	1,175	412	294	366	134	4,643
Old and new patients							
Total attendances	60,067	27,723	13,725	8,563	9,314	—	119,392
In-patient Days	—	9	3,219	—	192	8,665	12,085

Seamen's Dispensary.

At this clinic for males, which is open all day, the work continues to increase.

The staff now* consists of three part-time medical officers and four highly trained orderlies.

Excellent results have been recorded both in the treatment of gonorrhœa and of syphilis, and special schemes of treatment particularly suited to the needs of the seafaring population have proved efficient.

By careful interrogation of patients and the keeping of records over several years it has been established that the average seaman who becomes infected has not practised any prophylaxis, and that the taking of alcohol to excess is not such a contributory factor in the acquisition of venereal disease as is generally supposed. It would appear, however, that in men over thirty years of age, veneral disease is frequently associated with the taking of alcohol, not necessarily to excess.

During the year under review 3,193 cases have been advised and treated, of whom 2,262 reported for the first time. Of these 589 were found not to be suffering from venereal disease, and thus the number of fresh cases of venereal disease seen during the year was almost identical with that of 1929, namely, 1,673, as against 1,675. It is therefore of interest to note that the total attendances of venereal cases rose from 50,734 in 1929 to 59,244 in 1930.

During the year all shipping companies with offices in Liverpool, whose ships carry surgeons, were circularised with a view to having more modern methods of treatment of venereal disease instituted at sea. As a guide in this matter reprints of an article (published in "The Lancet") by the medical officer of the dispensary on practical methods of treatment at sea and on shore, were issued, and the numerous requests for further copies of the article indicated the interest aroused in the subject.

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* March, 1931.

The following table shews the steady progress which has been made at the clinic during the last four years :—

	1927	1928	1929	1930
New patients (including Non-Venereal cases)	1,842	2,043	2,121	2,262
Old and New patients	2,642	2,867	3,023	3,193
Attendances	49,834	55,217	51,381	60,067

The classification of the persons dealt with at the clinic for the first time during the year, and also for the three previous years, was as under :—

	1927	1928	1929	1930
Syphilis	459	435	413	419
Soft Chancre	157	131	150	141
Gonorrhœa	931	1,031	1,112	1,113
Non-Venereal Cases	295	446	446	589
	1,842	2,043	2,121	2,262

Evening clinics are held twice weekly at the dispensary, and during the year there were 86 new cases and over 2,000 attendances. These patients have satisfied the medical officer that they cannot attend at the usual clinic hours.

This clinic is availed of by patients of all classes of occupation, but the majority are seafaring men.

Experience has shown that it is the close personal touch with the patient and the interest in his or her case which helps to stimulate the sufferer to continue treatment, but the absence of any feeling of ill-health or discomfort may cause the development of a sense of indifference and the desire to avoid the irksome routine of attendance.

Many patients who are suffering from gonorrhœa unfortunately do not report for treatment until a few weeks have elapsed and the disease has extended considerably from the original point of infection, in many cases having complications, and involving important organs. This neglect or inability to seek medical advice may be attributed to the nature of employment or absence on ship at sea, but those who reside locally frequently can and do come for treatment at an earlier stage; the disease, however, is well established in the majority before they present themselves for treatment.

With regard to syphilis, it is found, from figures compiled at the Seamen's Dispensary, that only 25 per cent. of the syphilitic cases attending there appear for treatment in the pre-Wasserman reaction stage, and 24 per cent. appear as early syphilis with primary sore and positive Wasserman test. Those with syphilis in the secondary stage, with rash, sore throat, &c., form only 8 per cent. of the total. The important point, however, is that fully 40 per cent. of patients are in the stage of later or latent syphilis, including treated cases of more than two years' duration.

An analysis of the various types of the total actual number of venereal disease cases met with at the principal clinics is as follows :—

	Percentage of total cases of diagnosed Venereal disease.
Syphilis	33·5%
Soft chancre	4·5%
Gonorrhœa	62·0%

The figures for Liverpool correspond to those for the country generally.

Educational Propaganda.

At the inauguration of the venereal diseases scheme the Ministry of Health approved of certain educational work being conducted to acquaint the general public and those likely to come into contact with venereal disease of the dangers arising therefrom. After several years' effort in Liverpool, the work has culminated in the merging of the various Merseyside boroughs into a scheme for this and general health purposes under the Merseyside Boroughs Health Education Committee.

Lectures and addresses have been delivered in the districts mentioned by Dr. Hall, the lecturer-organiser of the Committee.

	Syphilis.		Soft Chancre.		Gonorrhœa.		Conditions other than Venereal.		Total.	
	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.
1. Number of cases which—										
(*a*) at the beginning of the year under report were under treatment or observation for	1,222	699	46	...	1,576	509	39	18	2,883	1,226
(*b*) had been marked off *in a previous year* as having ceased to attend or as transferred to other Centres, and which returned to the Treatment Centres during the year under report *suffering from the same infection* ...	40	14	2	...	79	10	2	...	123	24
	1,262	713	48	...	1,655	519	41	18	3,006	1,250
2. (*a*) Number of cases dealt with at the Treatment Centres during the year *for the first time* with infections of — 1. *less* than one year's standing	437	169	150	...	1,704	232	1,005	124	3,296	525
2. *more* than one year's standing	312	68	13	...	249	46	...	...	574	114
	2,011	950	211	...	3,608	797	1,046	142	6,876	1,889
2. (*b*) Number of cases included in Item 2 (*a*) known to have received *previous treatment at other Centres* for the same infection	149	30	7	...	240	21	...	...	396	51
3. Number of cases which ceased to attend—										
(*a*) before completing the first course of treatment for...	202	80	46	...	975	141	...	...	1,223	221
(*b*) after one or more courses but before completion of treatment for ...	310	103	...	...	...	...	...	...	310	103
(*c*) after completion of treatment, but before final tests as to cure of ...	34	11	10	...	282	9	...	...	326	20

	Syphilis.		Soft Chancre.		Gonorrhœa.		Conditions other than Venereal.		Total.	
	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.
4. Number of cases transferred to other Treatment Centres after treatment for ...	138	12	23	...	212	20	...	...	373	32
5. Number of cases discharged after completion of treatment and observation for ...	67	11	70	...	584	21	...	...	721	32
6. Number of cases which, at the end of the year under report, were under treatment or observation for	1,260	733	62	...	1,555	606	58	24	2,935	1,363
	2,011	950	211	...	3,608	797	58	24	5,888	1,771
7. Out-patient attendances—										
(*a*) For individual attention by the Medical Officer	15,026	6,204	803	...	31,787	5,002	2,180	327	49,796	11,533
(*b*) For intermediate treatment, *e.g.*, irrigation, dressings, etc.	1,179	85	1,974	...	52,771	1,918	136	...	56,060	2,003
Total Attendances	16,205	6,289	2,777	...	84,558	6,920	2,316	327	105,856	13,536
8. Aggregate number of "In-patient days" of treatment given to persons who were suffering from	543	661	39	...	520	1,579	78	—	1,180	2,240

	For detection of			For Wassermann Reaction.
	Spirochetes.	Gonococci.	Other Organisms.	
9. Examinations of Pathological material:—				
(*a*) Specimens which were examined at, and by the Medical Officer of, the Treatment Centres ...	25	4,172	...	...
(*b*) Specimens from persons attending at the Treatment Centres which were sent for examination to an approved laboratory	45	2,483	...	5,175

Education in Health for Seamen.

Cadets and others who intend to join the Mercantile Marine should receive a training in hygiene on training ships and qualify in ambulance and first aid work, and all should receive some instruction in the dangers of venereal disease. Some years ago a circular on the Health of Seamen was drawn up with the object of directing the attention of sailors to the dangers of venereal diseases and directing them if infected to the various clinics in the City of Liverpool, where free treatment could be obtained. The subject was introduced by starting with other dangers to health than venereal disease which might arise in the course of the voyage; the following is the text of the notice.

LIVERPOOL PORT SANITARY AUTHORITY.—HEALTH OF SEAMEN.

Many of the ailments and illnesses which are associated with a seafaring life may be avoided by attending to a few simple rules of health. If you would avoid these ailments attend to the following :—

(1) Do not drink water from polluted or doubtful sources. Ice cream and uncooked shell-fish frequently cause typhoid fever and dysentery.

(2) When taken at all, spirits should be consumed in the strictest moderation, care being especially taken as to the quality of the liquors obtained in bars in foreign ports.

(3) Avoid exposure to the direct rays of the tropical sun and unduly prolonged exposure to high temperatures.

(4) When in tropical ports, avoid sleeping uncovered on open decks or in quarters where mosquitoes are likely to bite you, as malaria is frequently contracted in this way. When mosquitoes are prevalent, sleep under cover of a mosquito curtain.

(5) Serious lifelong illness may be contracted by sexual intercourse with loose women.

Any form of venereal disease, if untreated, may last a life-time, and be transmitted to wife and children. If either of these diseases, syphilis or gonorrhœa (pox or clap) should be contracted, do not delay in consulting a properly qualified doctor at the earliest moment. Avoid all quacks and patent medicines.

It is commonly believed that when the temporary pain and discomfort are relieved, and the sore or discharge has disappeared, that the disease is cured. This is a great mistake, and neglect of treatment is a very common cause of prolonged illness, including stricture or paralysis.

Persons suffering from any form of venereal disease should, immediately they arrive in Liverpool, visit one of the Treatment Centres at once, where up-to-date attention by specialists in these diseases, may be had free of charge, and without any fear of disclosure.

It is especially important that attendances for treatment should be regular, until the specialist considers that the disease has been cured.

This notice has been invaluable to the men, and when placed in crews' quarters has been eagerly read and respected.

The Hygiene of Crews' Spaces.

During the year careful attention has been paid to the inspection of crews' spaces by the port sanitary inspectors. All vessels entering the port are visited as soon as possible after docking, and enquiries are made concerning the health of the crew, the occurrence of any sickness during the voyage, the source of the water supply, the condition of all tanks and bilges, the condition of storerooms, and whether any sick or dead rats have been found.

After making these enquiries the sanitary inspector, accompanied by a ship's officer, visits the crew's quarters, and their condition is noted, particular attention being paid to cleanliness, structural defects, rat-harbourages, accumulations of rubbish, etc. The attention of the officer is called to any defects that are found, and a request made that they should be remedied. These instructions are carried out by the shipping company concerned without any difficulty. The inspector re-visits the vessel from time to time, and notes when the defects have been made good.

There is a general tendency to improvement in the matter of cleanliness, and although crews' quarters are still left dirty when the men pay off, they do not appear to be as dirty as was formerly the case. In quite a number of cases the crews' quarters are "rough cleaned" soon after arrival, the final cleansing being carried out after the workmen have left the vessel, which is usually about two days

before the vessel sails. Defects such as leaky decks, defective scuttles, etc., are due to stress of weather and are always remedied while the vessel is in port.

To-day the welfare of seamen and the hygiene of vessels is an important part of public health work; in many of our colonies and in other countries the standard of ship's hygiene has reached a high level, and a general stimulus has been given to the welfare of the seafaring population which is proving of incalculable benefit.

A healthy environment for seamen is to be regarded not only as of value to the men themselves but as our first line of defence against imported disease. British shipowners have voluntarily made great strides since the war to improve the planning of their ships from a hygienic standpoint, but there are still some which do not reach a high standard.

Some progressive shipowners, notably in Liverpool and Cardiff, on their own initiative have taken an active interest in the conditions of life on board their vessels and have made great efforts to improve the hygienic planning of their vessels. During the past year the Board of Trade and the Ministry of Health have formed a joint Committee to consider what can be done to remedy matters. The Association of Port Sanitary Authorities has had the subject under consideration since 1922, and a deputation of this body was recently received by the Board of Trade to state the views held and based on the experience of these authorities in the inspection of vessels in the various port areas.

Particulars of changes of seamen's and firemen's accommodation in 327 *British vessels built before* 1916 *and compared with* 356 *of those built since that date, all arriving in the Port of Liverpool* :—

Number of Consecutive Vessels examined.	Built.	Situation of Quarters.						Type of accommodation.						
		Forward.	Aft.	Amid-ships.	Fore and Aft.	Aft. and Amid.	Fore and Amid.	Open f'cles.	Cubicles.	Cubicles and open f'cles.	Mess rooms.	Wash-houses.	Baths.	Hospitals.
327	Before 1916	147	103	6	65	3	3	308	5	11	46	238	3	76
	%	44·9	31·4	1·83	19·8	0·9	0·9	94·1	1·5	3.3	14·6	72·7	0·9	23·2
356	After 1916	51	172	6	21	5	1	252	78	26	191	339	26	201
	%	14·3	48·3	1·6	5·8	1·4	0·28	70·0	21·9	7·3	53·6	95·2	7·3	56·4

The vessels were not chosen for this examination, but were dealt with consecutively as they arrived in Liverpool, and special cards with details made out.

The percentages show a marked improvement in the situation of the quarters and the provision of cubicles, messrooms, washhouses and hospitals.

VERMIN IN CREWS' QUARTERS.—It is the practice of many shipping companies to fumigate the crews' quarters every voyage, and, in addition, to spray with an insecticide; a supply of the latter is also available for use during the voyage; in such vessels there is a marked improvement in the condition of the crews' quarters.

RAT-PROOFING.—There is a steady increase in the number of vessels which are being made rat-proof. Unnecessary linings are being removed, and skeleton casings substituted for the old box casings; expanded metal is being used more extensively to protect openings which are necessary for light, ventilation, and the passage of pipes, etc.

The application of Article 28 of the International Sanitary Convention of Paris, 1926, has led to a marked improvement in the condition of the majority of foreign-going vessels. Much of this improvement may be ascribed to the requirements of the Deratisation Certificate. Ship owners and ship masters are paying more attention to the general condition of their vessels, holds are cleaned up, stores overhauled and kept in good order, crews' quarters are maintained in good repair and are more cleanly than formerly; particular care is now paid to casings, linings, or any other condition which may give harbourage to rats. By this means not only is the general condition of the vessels improved, but it also becomes an economic proposition from the ship owners' point of view, as the number of necessary fumigations is considerably reduced. All new vessels entering the port show that the question of rat-proofing has been seriously considered during construction, and the near future may show a mercantile fleet very largely composed of rat-proof vessels.

INSPECTION OF SHIPPING.

Year 1930.

Nationality.	Visits.	Re-visits.	Total.
British	3,342	1,835	5,177
Norwegian ...	148	39	187
Swedish... ...	117	40	157
Spanish... ...	73	19	92
Danish	137	19	156
Japanese ...	33	29	62
Italian	19	12	31
Portuguese ...	1	—	1
Russian	16	4	20
French	12	5	17
Dutch	65	7	72
Greek	47	24	71
American ...	128	47	175
Belgian ...	5	3	8
German	64	14	78
Esthonian ...	3	—	3
Finnish	21	4	25
Jugo Slav ...	4	1	5
Latvian ...	7	2	9
Peruvian ...	1	2	3
Hungarian ...	1	—	1
Lettish	3	4	7
Total ...	4,247	2,110	6,357

Summary of Insanitary Conditions during the year 1930.

Class of Vessels.	Number Inspected.	Number on which Nuisances were found.	Per cent.
SAILING FOREIGN—			
Steamers	3,675	576	15·67
Sailing	2	—	—
Total...	3,677	576	15·66
SAILING COASTWISE—			
Steamers	562	24	4·27
Sailing	8	—	—
Total...	570	24	4·21

Nationality.	Number Inspected.	Number on which Nuisances were found.
British	3,342	571
Foreign	905	29
	4,247	600

Nuisances arising through

Defects of Original Construction. (a)	Per cent. of Total Defects.	Structural Defects through wear and tear. (b)	Per cent. of Total Defects.	Dirt, and other conditions prejudicial to health. (c)	Per cent. of Total Defects
2	0·06	225	7·72	2,685	92·21

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THE FOLLOWING TABLE SHOWS THE NUMBER AND NATIONALITIES OF THE VESSELS ON WHICH DEFECTS WERE DETECTED DURING THE YEAR 1930.

NATIONALITY.	Number of Ships.	Dirty Forecastles.	Dirty Washhouses, Store-houses, etc.	Foul Water Casks.	Foul Bilges.	Foul W.C's.	Accumulations of offensive refuse.	Gear stowed in Crew's Quarters.	Damp Quarters.	Water lodging on roof of Forepeak Tank.	Animals kept causing nuisance	Leaky Decks overhead.	Defective Stoves.	Defective Bulkheads.	Defective Forks and Sky-lights.	Defective Ventilators.	Defective Flooring Boards	Defective Hatches and Lockers.	Defective Chain Pipes.	Defective Hose Pipes.	Defective W.C. Fittings.	Defective Soil Pipes.	Inadequate Ventilation.	Inadequate Lighting	Inadequate Drainage.	Bare Iron not Sheathed	W.C's deficient in Ventilation and situation bad.	Total number of Defects.	Total Remedied.
British ...	571	2130	13	3	...	431	1	1	4	5	...	36	27	1	100	9	1	9	9	10	7	4	...	...	1	...	...	2802	2740
Norwegian ...	3	...	2	1	...	...	...	...	...	...	...	2	2	...	...	...	...	...	...	...	...	...	...	...	...	...	...	7	6
Spanish ...	6	21	7	...	...	2	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	30	30
Greek ...	7	20	...	...	...	1	1	...	...	...	...	2	...	...	3	...	...	...	...	...	...	...	...	...	...	...	...	27	25
French ...	1	1	...	...	...	...	...	...	...	...	...	...	...	...	...	...	..	...	...	...	...	...	...	...	...	...	...	1	1
Italian ...	3	13	2	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	15	15
Belgian ...	2	4	...	...	...	...	1	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	5	5
Swede	2	8	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	8	8
Peruvian ...	1	4	...	...	...	1	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	5	5
Lettish ...	1	3	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	3	3
Dutch	1	...	...	...	...	3	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	..	...	...	...	3	3
American ...	2	2	...	...	...	...	...	...	...	...	...	...	...	2	...	1	...	...	...	...	...	...	1	...	...	...	...	6	2
Total ...	600	2206	24	4	...	438	3	1	4	5	...	40	29	3	103	10	1	9	9	10	7	4	1	...	1	...	...	2912	2843

Canal Boats.

The port sanitary inspectors have been appointed inspectors under the Canal Boats Acts, 1877 and 1884. An inspector devotes one day each week to the inspection of canal boats plying in the river or docks, and during the year, 582 boats were inspected, of which 17 were found to have some condition contravening the regulations.

Medical Inspection of Aliens.

The following table gives the total number of aliens arriving in the Port of Liverpool during 1930, and the number in each of the categories under which alien passengers are classified by the Immigration Department of the Home Office :—

Medical Examination of Aliens.

Total aliens	Transmigrants	Residents returning	In transit
21,886	4,701	285	1,483

Visitors of 6 months or less		Diplomats & persons on Foreign Govt. Missions.	Seamen
On holiday, tourists, &c.	On Business		
13,490	473	66	205

Seamen under Contract to join ships in British Waters.	Ministry of Labour Permits	Other Aliens
538	34	611

The medical inspection and examination of aliens is carried out by the assistant port medical officers. The objects of the inspection are to ascertain whether any of the alien passengers are :—

(1) Suffering from any disease likely to be a danger to the public health of this country.

(2) Suffering from any disease or deformity likely to cause such aliens or their dependents to become a public charge.

No alien is allowed to take up employment in this country without a special permit from the Ministry of Labour, so that it is rare for the medical inspector to have to consider the earning capacity of an alien. The procedure with regard to the medical inspection and examination of aliens entering the Port of Liverpol is as follows :—

The medical officer boards the vessel immediately on arrival with the view of obtaining information as to the health of all persons on board from the ship's surgeon, and also of making a rapid preliminary inspection of all classes of immigrants. This latter may be completed before the immigration officers start their examination, or may occur simultaneously with it, depending upon the circumstances. Note is made of any alien who in the opinion of the medical officer should require a more detailed examination, irrespective of the time that the alien may wish to remain in the country.

The medical officer attends during the examination made by the immigration officers, when a further opportunity is afforded to inspect the aliens more closely. All aliens who wish to stay in this country more than three months are referred to the medical inspector for examination.

During 1930 medical certificates were issued in respect of three aliens, two for mental deficiency and one for venereal disease.

Transmigrants.

Elaborate precautions are taken by the United States Public Health Service to prevent the occurrence of typhus fever among emigrants from Central Europe to America. Special stations have been erected, through one or other of which all transmigrants must pass. Here they are medically inspected, freed from vermin, and all their clothing disinfected.

All second and third-class passengers bound for the United States, whether from the Continent or British Isles, are inspected by an Officer

of the U.S. Public Health Service immediately before sailing, and if any are found to be in a verminous condition they are sent to the city disinfecting station, where suitable accommodation is available for the destruction of vermin in the clothing and belongings of each person. The cost of the disinfection is defrayed by the shipping company concerned.

The number of transmigrants dealt with under this arrangement was 174 during the year 1930.

Emigration.

The number of emigrants leaving the Port of Liverpool during the year 1930 was 91,493, a decrease compared with the previous year, when the number of emigrants leaving the port was 113,116. The following is a return of the number of emigrants and clearances of ships, including those passenger vessels in which medical inspection was not required, from 1915-1930 :—

In 1915,	75,387	Emigrants, and	677	Clearances of Ships.
,, 1916,	58,749	,,	562	,,
,, 1917,	18,908	,,	379	,,
,, 1918,	13,588	,,	287	,,
,, 1919,	120,187	,,	673	,,
,, 1920,	204,868	,,	769	,,
,, 1921,	161,132	,,	714	,,
,, 1922,	120,691	,,	804	,,
,, 1923,	159,874	,,	850	,,
,, 1924,	122,201	,,	869	,,
,, 1925,	111,918	,,	894	,,
,, 1926,	116,672	,,	850	,,
,, 1927,	123,801	,,	892	,,
,, 1928,	116,083	,,	888	,,
,, 1929,	113,116	,,	908	,,
,, 1930,	91,493	,,	835	,,

The following Tables relating to Emigration have been kindly supplied by the Board of Trade.

Statement showing the number of passengers (emigrants and others), distinguishing British subjects and aliens, who left the port of Liverpool for places out of Europe in the year 1930:—

Destination.	British Subjects.	Aliens.	Total.
British North America ...	29,857	11,606	41,463
Australia and New Zealand	1,245	17	1,262
British South Africa ...	1,475	30	1,505
India (including Ceylon)...	4,585	84	4,669
Other parts of the British Empire ...	7,561	332	7,893
Total British Empire ...	44,723	12,069	56,792
United States	13,452	14,228	27,680
Foreign South America ...	2,309	592	2,901
Other Foreign Countries	3,990	130	4,120
Total Foreign Countries ...	19,751	14,950	34,701
Grand Total ...	64,474	27,019	91,493

Number of passengers (emigrants and others), distinguishing British subjects and aliens, as given on page 46, who left the port of Liverpool in each month of the year 1930 :—

Month.	British Subjects.	Aliens.	Total.
January	4,708	1,231	5,939
February	3,662	1,557	5,219
March	5,663	1,694	7,357
April	5,901	1,731	7,632
May	6,399	1,546	7,945
June	4,450	1,434	5,884
July	5,687	2,247	7,934
August	8,520	8,141	16,661
September	7,717	4,118	11,835
October	7,191	1,967	9,158
November	2,803	820	3,623
December	1,773	533	2,306
Total	64,474	27,019	91,493

Emigrant Inspections.

All emigrants travelling second or third-class on board vessels outward bound are subject to inspection by the medical officers of the Board of Trade. The crews of all such vessels bound for America are also subjected to inspection by these officers. An inspector of the Port Sanitary Authority attends these clearances in order to supervise the removal of any persons who may be rejected on account of actual or suspected infectious disease.

During the year 1930 there were 202 inspections, and 11 persons were rejected on account of infectious disease.

Date 1930.	Name of Vessel.	Nature of Sickness.	Where taken to	Description of Patient.
Jan. 11	Lancastria ...	Smallpox-Contact	Port Sanitary Hospital ...	Adult (M.)
April 19	Laurentic ...	Chicken Pox ...	Belmont Road Hospital...	Child (M.)
,, 25	Duchess of Bedford	Chicken Pox ...	Belmont Road Hospital...	Infant (M.)
July 25	Duchess of York	German Measles ...	Fazakerley Hospital ...	Adult (M.)
Aug. 30	Britannic ...	(?) Chicken Pox ...	Walton Hospital	Infant (F.) Child (M.) Adult (F.)
,, 30	Britannic ...	Scarlet Fever ...	Netherfield Road Hospital	Adult (M.)
Oct. 10	Duchess of Atholl	Scabies	Returned to Cardiff ...	Adult (F.) Children

Supervision of Foodstuffs.

The inspection of imported foodstuffs has been carefully attended to throughout the year. The work is carried out by a staff of nine qualified food inspectors, each inspector covering a certain area, and being responsible for all foodstuffs landed in that area. The procedure adopted in the first instance is one of sampling, and the percentage examined varies according to the circumstances of landing, and the type and condition of the foodstuffs. Information with regard to imported foodstuffs is obtained daily from the following sources :—

(1) The Customs Bill of Entry, which is a daily journal giving a list of all foodstuffs entering the Port.

(2) The ship's manifest.

(3) Letters from importers.

(4) Customs forms showing goods detained by them.

A special log is prepared each day from the above for the use of each inspector. A certain percentage of each consignment landed is inspected on the quay-side, and if none is found to be unsound the whole consignment is released at once. If, however, any part of the consignment be found to be diseased, part diseased, or unsound, and that the whole consignment is too large to be dealt with on the quay-side, arrangements are made with the importer for it to be transferred to suitable premises. In the case of frozen meats the consignment is transferred to a local cold store and subsequently dealt with there.

Canned goods, dried box goods, oranges, apples, etc., are usually transferred under guarantee to a local warehouse. In either case the sound goods are removed from the unsound and the former released for sale. Unsaleable foodstuffs are allowed to go for industrial purposes, but great care is always taken that these foods are not marketed for human consumption, and only well-known and reliable firms, approved of by the medical officer of health, are allowed to receive them for the purpose of manufacturing animal foods, dog biscuits, melting down for tallow, fat extraction, etc.

Each of these firms must give a written guarantee (see below) that the unwholesome food received by them will only be used for industrial purposes, and wherever possible it is the duty of the inspector to satisfy himself that this guarantee is being faithfully fulfilled. In the event of the importer disagreeing with the inspector as to the character of any goods, the latter makes application to a magistrate, who, if he is satisfied, gives an order for the destruction of the goods under the supervision of the medical officer of health. In practice it is rare for a magistrate's order to be necessary, this being the result of the common sense and sound judgment of the inspectors concerned.

GUARANTEE IN RESPECT OF UNSOUND AND UNWHOLESOME FOOD.

I, the undersigned, being the purchaser of*.....

* Quantity and Weight to be stated.

.....

from Messrs.....in consideration of the same being released to me, guarantee that no portion of the same shall be used for human food in any form, but the whole of the said..... shall be removed to my premises at (*full address*).....

.....

and there be used for the purpose of.....

I also guarantee that no portion of the said..... shall be disposed of to any other person for any purpose whatsoever.

Signed.....

Address.....

Witness.....

Address.....

To the Medical Officer of Health,
Public Health Department,
Dale Street, Liverpool.

The following items in regard to imported food is of interest :—

The Regulations issued in regard to preservatives in foods have been well carried out during the year; large quantities of boraxed bacon and ham were imported from the U.S.A. and Canada. The bulk of the imports, including 1,820 boxes of hams and 1,657 boxes of bacon, were, however, under bond, and were either exported or utilised as ships' stores, in accordance with the Regulations.

During the year large consignments of sheep carcases from South America and Australia have been found to be affected with epizootic lymphadenitis. The condition has been known to the Authority's officers for a long time, and carcases found to be seriously affected

were dealt with, but it is only recently that the affection has become more widespread in the sheep in these countries.

There is no evidence that the disease is communicable to man.

Epizootic lymphadenitis occurs most frequently amongst sheep, seldom in lambs. The disease appears as dry caseated areas, chiefly in the superficial skeletal lymphatic glands, e.g., the prescapular, precrural, inguinal or popliteal; it may also be evident in the viscera or muscular system.

The routine inspection of the freshly killed carcase should be carried out by feeling for the enlarged glands or nodules.

The recommendations of the Ministry of Health in regard to this condition are set out under Memorandum on Meat Inspection (Memo. 62: Foods). These recommendations state that the entire carcase and all the organs shall be condemned if there is any evidence of caseous lymphadenitis.

Strenuous action was taken from November, 1928, to deal with the condition with the object of tightening up the inspection work in the countries of origin, this being the natural place for the elimination of such carcases, and before the mutton is placed in cold store or on board ship.

The position at the time of this report is that a great reduction has taken place in the percentage of affected mutton.

Evidences of careful inspection are now forthcoming in the case of most firms' imports, the glands affected being cut and exposed for inspection. With regard to one or two firms, improvement is still desirable.

The position was recently reviewed in consultation with representatives of all port sanitary authorities at the offices of the Ministry of Health, when it was agreed to reduce to 5 per cent. the amount examined of sheep carcases from Australia and New Zealand owing to the great improvement in the imports. A 10 per cent. examination is still required in respect of imports from other countries, and 100 per cent. examination of all imports of cut mutton.

Irish Dressed Meat.

During 1930 the following meat has been seized,* mainly due to tuberculosis, other causes being dirt or injury :—

23 cow sides.
2 ox sides.
9 quarters beef.
11 cuts of beef.

Since June 1930 no diseased or damaged meat has been seized from the Irish Free State. The imports of pigs heads, offal, pickled tongues, &c., from Northern Ireland still show evidences of want of systematic inspection of the carcases and offal.

A certain amount of inspection is now carried out by the Authorities in the Irish Free State, under the Agricultural Produce (Fresh Meat) Regulations, 1930, and similar supervision will shortly be exercised in Northern Ireland under a similar Act.

Attention has been given to dirty meats under the Public Health (Meat) Regulations, 1924, and the quantities rejected have shown no increase as compared with previous years.

Large quantities of inedible tallow are imported, and a record is kept of the destination and purpose for which it is imported. Consignments may be detained until the necessary information is given. Records are also kept of all loose collected dirty sugar and re-refining is insisted upon. Several consignments of Brazilian lamb livers (solid packed) in tins were imported in the early part of the year, and large quantities were rejected on account of decomposition, and smaller quantities for cysts. Several consignments of sheep and lamb livers from the U.S.A., also solid packed, showed in some cases evidence of decomposition.

During April, a Sub-Committee of the Port Sanitary and Hospitals Committee was appointed to inquire into food inspection at the docks and various consignments on landing were inspected, including sheep,

Note.—* The meats in question, although arriving within the area of the Port Sanitary Authority, are allowed to pass on to the City Markets to which they are destined for sale. Due notice of the character of the consignment and other particulars are telephoned through to the meat inspectors staff in the city. A full inspection of the meat is made by the city food inspectors on arrival at the meat markets.

canned goods, pig carcases and other types of food imports. Some suggestions were made regarding the improvement of the examination of sheep carcases for caseous lymphadenitis, and the Committee conveyed through the Medical Officer of Health their appreciation of the services of the food staff.

The "El Paraguayo" arrived in March, having been delayed by shipwreck, and the beef originally chilled was frozen up again. The meat was found to be mouldy and partly decomposing, and large quantities were dealt with by trimming or rejection.

The "Cornwall" arrived in April from New Zealand, and a portion of the sheep and lamb carcases was tainted by decomposition of the cargo in the lower hold. Subsequently the carcases were stripped and suitably treated, and after repeated examination were released free from taint. A portion of this cargo was landed earlier at Bristol.

A few consignments of lard reached this country from China, but all consignments had attached to the packages the Hong Kong official certificate, and were admitted in the usual way.

Samples of liquid egg were landed from Egypt in good condition, and specimens sent to the City Analyst for examination were found free from perservative.

A consignment of 20 cases of haricots verts were landed from Naples, the label stating that they contained sulphate of copper. They were subsequently exported as ships' stores in accordance with the provisions of the Public Health (Preservatives in Food) Regulations.

Colonial and foreign fruits have arrived in very large quantities, many new sources of supply having been opened up. Liverpool still receives the largest supplies of green fruit from all parts of the world, as fruit production is extending, and shippers are seeking additional markets.

The general sanitary conditions under which fruits are now shipped show a vast improvement, being wrapped in glazed papers and standardised packings, and carried in special (cool chambered) steamers. More care is now being taken in landing fruit, and some of the new dock sheds have special reserved and limewashed spaces where the fruit cargoes are landed.

Australian apples and pears arrived in large quantities early in June. Three vessels arrived with cargoes in bad condition, viz. :—

S.S. "Trojanstar," at Hobart.—A large quantity of apples affected with "brown heart."

S.S. "Runic," at Hobart.—Apples with "brown heart," also a quantity of decomposing pears.

S.S. "Stirlingshire," at Hobart.—Bulk of the pears cargo decomposing.

Apples from New Zealand arrived in good condition.

Canadian apples (in barrels) and British Columbian apples (in boxes) arrived in good condition.

Nova Scotian (Empire) apples arrived in poor condition.

Brazilian oranges were imported in large quantities, and the condition was found to be greatly improved on that of previous years. Brazilian grapes (white) landed in a wasteful condition, one cargo, 550 boxes, ex S.S. "Nariva," at Buenos Aires, had to be destroyed owing to ship's delay in landing.

Two consignments of Chilian peaches and pears arrived in bad condition, the peaches being black in the centre of the fruit, and the pears being overripe. The damage was attributed to the fact that the fruits were carried as ordinary general cargo. These had to be destroyed.

Virginian apples landed in good condition, and free from arsenical spray. Californian apples, pears, oranges and dried fruits all arrived in good condition. Grapefruit was landed in a more or less wasteful condition, and was dealt with on quay, sorting of packages in some cases being required.

Valencia oranges were in good condition, and free from boric spray.

Grapefruit and lemons from Jaffa were landed during the year in large quantities. These were sorted and dealt with on the quay in the same way as oranges from Jaffa.

In July Canary Island tomatoes arrived, a large quantity was found to be in an unsound condition, probably due to climatic conditions.

Egyptian onions, Italian lemons, and Seville bitter oranges landed in fairly good condition.

More Jamaica bananas and grapefruit have arrived, due to a new steamship company having commenced a regular service. These were found in good condition.

Dutch fruit pulp was imported in large quantities during the year. Samples were taken and submitted to the City Analyst.

Grecian currants, Turkish sultanas, figs, &c., arrived in good clean condition.

During the year 1930 there has been no cause to complain of the conditions of landing and storage of fruit, etc., on the dock quays.

Regulations now require the country of origin of fruit to be stamped on the containers or packages.

Samples of fruits, e.g., apples, pears, oranges, etc., are regularly examined for the presence of chemical substances on the rind or skin.

A large amount of correspondence has been occasioned by the work of the Department on such subjects as the importation of meat, preservatives in food, etc., or the presence of boric acid, &c., in foodstuffs. The Medical Officer of Health and the Deputy Medical Officer of Health have had many interviews with regard to the Food Regulations in force under the Ministry of Health.

During the year the following quantities of unsound or unwholesome foodstuffs have been destroyed or suitably disposed of so as not to be available for human food :—

Beef, mutton, pork, &c., 79 tons : apart from tuberculosis, which appears only a small amount, the important causes of rejection were :

brine staining, mouldiness or decomposition. Offal, 13 tons; fruit and vegetables, 817 tons; cereals, 857 tons. Much of this latter is damp and mouldy, due to damage at sea from sea water, &c. Canned goods, 95 tons, chiefly blown and burst containers.

A large quantity of the unsound meat and offal has been utilised for the production of manures, and the cereals for size making or animal food.

The following table gives the particulars of samples of foodstuffs, etc., sent to the City Analyst and Bacteriologist for examination during the year 1930 :—

CITY ANALYST.

Canned Peas	1
,, Loganberries ...	2
,, Shrimps	1
Black Currant Pulp	1
Gooseberry	1
Strawberry	3
Premier Jus (fat)	1
Apples	5
Liquid Whole Egg	1
Lard Compound	1
Shrimps	1
	18

CITY BACTERIOLOGIST.

Canned Cherries	4
,, Loganberries ...	2
,, Ham	1
Water	2
Wool	66
	75

Seven samples of tinned foodstuffs, etc., were examined and none call for any special comment. Two samples of ships' water were examined for typhoid infection and proved negative.

During the year 66 samples of treated and untreated wool, hair, etc., were examined for the Government Wool Disinfecting Station, and three untreated samples shewed positive evidence of anthrax infection. All the treated samples were sterile.

There were 3,573 rats and mice examined from ships, quays, etc., and no evidence of the bacillus of plague was found in any of them.

TABLE SHOWING THE NUMBERS OF CATTLE, SHEEP, AND SWINE EXPORTED FROM IRELAND TO LIVERPOOL DURING THE YEAR 1930, AND SHOWING THE PORTS IN IRELAND AT WHICH THE ANIMALS WERE SHIPPED.

	Cattle.	Sheep.	Swine.
Ballina	560	12,375	4,863
Belfast	3,122	8,132	521
Cork	37,502	5,580	32,062
Drogheda	23,361	27,986	315
Dublin	147,016	180,536	7,313
Dundalk	8,320	18,458	279
Galway	1,285	6,434	3,672
Londonderry	4,132	8,138	283
Limerick	6,210	372	371
Newry	1,629	1,505	20
Sligo	149	13,715	13,632
Waterford...	25,851	18,807	1,711
Wexford	2,852	8,118	41
Total	261,989	310,156	65,083

TABLE SHOWING THE TOTAL NUMBERS OF THE SEVERAL KINDS OF CATTLE, SHEEP AND PIGS EXPORTED FROM IRELAND TO LIVERPOOL DURING THE YEAR 1930.

CATTLE.	No.
Fat	156,342
Stores (for fattening)	84,920
Milch Cows	10,284
Springers	1,625
Calves	8,818
Total Cattle ...	261,989

SHEEP.	No.
Fat	114,920
Stores	864
Lambs	194,372
Total Sheep ...	310,156

PIGS.	
Fat	65,083
Stores	—
Total Swine ...	65,083

STATEMENT SHOWING THE NUMBER OF LIVE CATTLE, &c., LANDED AND SLAUGHTERED AT THE FOREIGN ANIMALS WHARF (BIRKENHEAD, ALFRED AND WALLASEY LAIRAGES) DURING THE YEARS 1921 TO 1930 INCLUSIVE.

Year.		Landed.				Slaughtered.			
		Oxen.	Calves.	Pigs.	Sheep, Lambs and Goats.	Oxen.	Calves.	Pigs.	Sheep, Lambs and Goats.
1921		**195,785**	—	**19,224**	**325,982**	**63,178**	—	**2,766**	**165,963**
		49,434	—	—	6,706	49,224	—	—	6,706
1922		**262,601**	**8**	**31,257**	**418,604**	**63,002**	**1**	**515**	**153,381**
		38,648	1	—	—	38,648	1	—	—
1923		**166,994**	**7**	**77,536**	**194,296**	**50,432**	—	**4,886**	**90,736**
		39,690	—	—	7,003	37,482	—	—	7,003
1924		**217,176**	—	**58,690**	**358,310**	**54,572**	—	**4,985**	**134,207**
	†	417	—	888	4,568	37	—	3	627
	‡	52,193	—	—	4,252	42,324	—	—	4,252
1925		**159,638**	—	**16,745**	—	**41,332**	—	**883**	**10,608**
		218	—	366	253,617	32	—	2	349
		43,673	—	—	3,919	35,567	—	—	—
1926		**165,187**	—	**35,785**	**312,745**	**45,876**	—	**1,681**	**150,378**
	†	208	—	171	4,052	16	—	—	605
	‡	38,870	—	490	—	28,997	—	490	—
1927		**199,172**	—	**61,713**	**379,736**	**62,323**	—	**1,657**	**164,985**
	†	351	—	413	4,635	43	—	—	332
	‡	4,074	—	—	—	3,712	—	—	—
1928		**249,008**	—	**47,224**	**365,820**	**73,245**	—	**2,256**	**144,441**
	†	280	—	362	2,630	33	—	3	561
	‡	414	—	—	—	170	—	—	—
1929		**238,185**	—	**48,882**	**325,224**	**67,423**	—	**1,103**	**122,929**
	†	266	—	416	2,789	62	—	2	714
	‡	693	—	—	—	693	—	—	—
1930		**262,564**	—	**65,417**	**310,862**	**53,967**	—	**1,437**	**99,902**
	‡	1,260	—	—	—	1,241	—	—	—
	†	517	—	234	4,703	160	—	—	1,050

Heavy type represents Irish. † Isle of Man. ‡ Foreign.

TABLE SHOWING THE VALUES OF THE IMPORTS OF MEATS (EXCEPT POULTRY AND GAME) INTO THE PORT OF LIVERPOOL DURING THE YEARS 1921 to 1929.

Description.	Years.								
	1921.	1922.	1923.	1924.	1925.	1926.	1927.	1928.	1929.
	£	£	£	£	£	£	£	£	£
Bacon	13,472,791	8,819,177	8,506,723	7,080,117	8,612,930	7,415,016	4,103,753	3,592,574	4,059,154
Beef, fresh and refrigerated ...	13,430,866	8,016,721	8,561,258	7,771,561	9,992,622	10,333,855	7,223,519	8,345,604	8,182,677
Hams	4,225,544	5,148,303	5,043,264	4,547,822	5,183,481	4,389,201	2,549,153	2,541,186	2,928,657
Mutton, fresh and refrigerated ...	5,842,010	4,262,439	4,879,930	3,337,957	4,314,957	3,498,206	3,503,587	4,140,843	4,028,739
Pork, fresh and refrigerated	920,772	419,018	948,484	555,610	623,824	538,273	345,024	406,868	448,527
Pork, salted									
Rabbits	95,873	65,563	77,096	33,092	44,393	67,275	34,322	35,945	34,546
Unenumerated, fresh, refrigerated and salted	678,012	581,442	419,381	403,506	550,386	492,290	474,294	418,762	455,913
Preserved, otherwise than by salting	1,253,263		1,541,595				1,181,915	1,240,491	1,140,417
Totals	£39,919,131	£27,312,663	£29,977,731	£23,729,665	£29,322,593	£26,734,116	£19,415,567	£20,722,273	£21,278,630

TABLE SHOWING THE QUANTITY OF UNSOUND MEATS UTILISED UNDER SUPERVISION DURING THE YEARS 1924 TO 1930.

Year.	Beef.				Mutton.				Pork.			
	Tons.	cwts.	qrs.	lbs.	Tons.	cwts.	qrs.	lbs.	Tons.	cwts.	qrs.	lbs.
1924	40	14	1	8	6	17	1	13	1	6	3	13
1925	1,184	15	1	5	7	10	1	1	—	4	1	15
1926	336	0	2	2	4	6	1	1	—	7	2	26
1927	68	8	1	4	161	10	1	19	9	2	0	14
1928	28	2	0	8	46	3	3	5	2	11	3	0
1929	22	18	1	18	178	13	0	21	2	19	0	4
1930	20	8	3	25	58	1	0	2	0	12	1	9

TABLE SHOWING THE QUANTITY OF UNSOUND OFFAL UTILISED UNDER SUPERVISION DURING THE YEARS 1924 TO 1930.

Year.	Beef.	Mutton.	Pork.	Veal.
1924.....	13,468 pieces.	14,574 pieces.	4,998 pieces.	13 pieces.
1925.....	40,160 ,,	10,129 ,,	1,883 ,,	541 ,,
1926.....	13,889 ,,	31,217 ,,	1,566 ,,	209 ,,
1927.....	9,243 ,,	6,725 ,,	2,790 ,,	248 ,,
1928.....	4,034 ,,	52,312 ,,	778 ,,	39 ,,
1929.....	6,447 ,,	14,422 ,,	814 ,,	9 ,,
1930.....	5,268 ,,	24,206 ,,	332 ,,	2 ,,

TABLE SHOWING THE QUANTITY AND DESCRIPTION OF UNSOUND MEATS SUPERVISED* DURING THE YEAR 1930.

Description.	Total Weight.				Cause of Destruction.											
					Tubercular.				Brine stained, mouldy and decomposed.				Other causes.			
	Tons	cwts.	qrs.	lbs.	Tons	cwts.	qrs.	lbs.	Tons	cwts.	qrs.	lbs.	Tons	cwts.	qrs.	lbs.
Beef	20	8	3	25	0	3	1	26	20	5	1	19	0	0	0	8
Mutton	58	1	0	2		—			13	13	3	9	44	7	0	21
Pork	0	12	1	9	0	0	1	9	0	2	0	10	0	9	3	18
Veal	0	2	0	6		—			0	2	0	6		—		
Total	79	4	1	14	0	3	3	7	34	3	1	16	44	17	0	19

* These were destroyed or allowed to go for industrial purposes to the satisfaction of the Medical Officer.

TABLE SHOWING THE QUANTITY AND DESCRIPTION OF OFFAL CONDEMNED DURING THE YEAR 1930.

Name of Organ.	Beef.		Mutton.		Pork.		Veal.	
	Number.	Weight, Pounds.	Number.	Weight, Pounds.	Number.	Weight, Pounds.	Number.	Weight, Pounds.
Livers	1,169	10,289	2,906	2,817	135	395	2	5
Tongues	106	478	1,950	310	2	3	—	—
Hearts	547	1,777	951	310	40	32	—	—
Skirts	340	505	—	—	—	—	—	—
Cheeks	607	1,105	—	—	—	—	—	—
Kidneys	836	772	3,072	294	18	7	—	—
Tripe	33	473	—	—	—	—	—	—
Tails	362	591	—	—	5	7	—	—
Feet	122	488	5,805	2,865	—	—	—	—
Plucks	—	—	—	—	96	443	—	—
Heads	—	—	—	—	24	240	—	—
Brains	—	—	56	12	—	—	—	—
Shins	1,000	5,447	—	—	—	—	—	—
Sweetbreads	146	57	9,446	667	—	—	—	—
Lungs	—	—	—	—	12	23	—	—
Totals	5,268	21,982	24,206	7,275	332	1,150	2	5

The organs dealt with above were rejected for various reasons, notably, tuberculosis

TABLE SHOWING QUANTITIES OF UNSOUND GENERAL FOODSTUFFS UTILISED UNDER SUPERVISION DURING THE YEAR 1930.

Description.	No. of Tins.	Weight in Pounds.	Description.	No. of Tins.	Weight in Pounds.
Canned Goods—					
Apricots ...	761	1891	Grapes... ...	168	210
Cherries ...	43	129	Tomatoes ...	21870	88167
Fruit Salad ...	516	1134	Egg Pulp ...	3790	147038
Loganberries ...	282	282	Beef	844	5054
Peaches	14	30	Mutton ...	27	162
Pears	2318	2738	Hams	10	113
Pines	3832	6230	Tongues ...	679	4084
Black Currant Pulp	7	77	Lobster ...	1348	1017
Bilberries Pulp ...	117	711	Crab	5552	2401
Damsons	822	822	Cray Fish ...	1052	526
Grape Fruit ...	292	383	Salmon ...	1	1

Description.	Packages.	Weight.			
		Tons.	Cwts.	Qrs.	Lbs
Fruit (Fresh)—					
Apples	1971	27	18	0	24
,, loose	—	—	—	3	16
Bananas...	678	25	10	1	22
,, loose	—	137	16	0	0
Oranges	1893	54	2	2	0
,, loose	—	411	7	2	8
Prunes	50	—	8	3	20
Pears	2894	46	17	1	13
,, loose	—	—	19	2	24
Grape Fruit	1381	55	5	3	11
,, loose	—	—	11	3	4

Description.	Packages.	Weight.			
		Tons.	Cwts.	Qrs.	Lbs.
Fruit (Fresh) *continued*—					
Lemons	115	4	13	2	8
,, loose	—	—	3	0	14
Grapes	585	5	10	3	2
,, loose	—	—	4	2	8
Melons	34	1	18	0	9
Artichokes	24	—	6	1	20
Pomegranates	1	—	—	1	22
Pine Apples	12	—	—	1	8
Tomatoes	1178	15	14	2	1
Peaches	236	1	8	1	2
Raisins	120	1	5	2	24
Currants	30	—	16	0	8
,, loose	—	—	6	0	25
Sultanas	16	—	8	0	0
Figs	2	—	—	1	20
Cokernuts	10	—	7	0	16
Potatoes...	244	12	3	2	8
,, loose	—	—	16	0	0
Turnips	211	9	8	0	16
Onions	17	—	15	0	20
Cereals—					
Wheat	—	649	11	1	10
Maize	—	189	15	0	7
Maize Meal	—	—	5	0	0
Rice	—	2	2	0	20
Flour	—	10	8	3	20
Oats, loose	—	—	10	2	2
Rolled Oats	—	—	18	0	
Barley	—	—	5	2	1
Peas	—	3	16	1	

Description.	Packages.	Weight.			
		Tons.	Cwts.	Qrs.	Lbs.
General—					
Bacon, loose	75	—	10	0	24
Hams	39	—	3	0	1
,, loose	—	—	1	1	11
Cod Fish	2	—	2	0	16
Butter	2	—	6	0	0
Desiccated Coker Nut ...	14	—	16	1	0
Ducks	21	—	—	3	0
Tea, loose	—	—	—	—	22

TABLE SHOWING THE TOTAL QUANTITIES OF THE DIFFERENT UNSOUND FOODSTUFFS UTILISED UNDER SUPERVISION DURING THE YEAR 1930.

	Tons.	Cwts.	Qrs.	Lbs.
Beef, Mutton, Pork and Veal...	79	4	1	14
Offal (Beef, Mutton, etc.) ...	13	11	2	4
Canned Goods...	95	3	2	8
Fruit and Vegetables	817	5	3	9
Cereals	857	13	1	6
General (Fish, Poultry, Rabbits, etc.)	1	19	3	18
TOTAL ...	1,864	18	2	3

Table Showing comparative Value of the more important Food Stuffs imported at the principal Ports during the year 1929.

	London. 1	Liverpool. 2	Hull. 3	Glasgow. 4	Bristol. 5	Harwich. 6	Newcastle 7	Manchester. 8	Leith. 9	Southampton. 10
	£	£	£	£	£	£	£	£	£	£
Animals	—	5,659,123	—	1,149,787	244,625	—	—	331,670	—	—
Butter	23,961,851	1,274,200	4,322,643	656,946	272,916	2,732,000	5,007,528	45,135	4,247,253	1,315,183
Cheese	10,165,173	888,964	259,850	437,168	715,808	282,451	194,478	176,980	171,961	51,928
Cocoa	1,660,439	1,791,970	351,480	27,050	493,434	184,648	7,240	—	77,108	—
Coffee	3,242,024	75,490	—	—	413,625	—	—	—	—	30,528
Grain	23,378,193	21,067,612	12,183,600	5,820,819	7,751,699	90	2,112,055	6,283,058	3,426,359	582,660
Eggs	9,602,934	1,536,919	1,076,941	1,146,840	—	1,271,821	1,117,566	125,283	1,499,370	864,273
Fish	3,906,344	3,368,283	694,472	59,391	61,941	1,379,400	1,510,216	54,265	96,253	301,990
Fruit	19,751,406	13,214,783	2,434,762	2,785,438	3,521,959	1,089,908	765,816	1,155,828	294,929	3,146,039
Lard	1,565,290	1,670,612	419,195	218,206	400,552	37,416	547,530	2,395,982	60,928	178,910
Margarine	1,091,141	881,227	615,351	242,348	—	404,912	187,814	172,674	339,303	—
MEAT :—										
Bacon	11,926,898	4,059,154	4,328,235	240,934	105,782	9,870,800	3,326,311	350,409	999,673	110,547
Beef	20,880,475	8,182,677	35,637	308,419	9,769	—	3,719	226,120	—	1,879,342
Hams	1,184,251	2,928,657	—	911,660	8,345	—	—	143,925	—	8,539
Mutton	13,703,486	4,028,739	2,097	49,687	447,221	—	—	63,410	—	612,321
Pork	545,764	448,527	—	—	—	—	—	—	—	—
Rabbits	559,556	34,546	—	—	—	—	—	—	—	—
Unenumerated	1,092,997	455,913	241,848	447,601	156,042	43,676	242,579	—	136,811	128,016
Preserved	3,034,737	1,140,417	19,795	—	2,161	—	—	—	—	—
Milk, Condensed	2,676,978	532,556	407,229	9,292	125,054	—	391,463	296,553	142,953	35,899
Poultry and Game	1,474,315	45,987	53,620	—	—	311,114	—	—	—	155,658
Sugar	12,406,573	8,869,602	310,330	184,124	227,094	—	24,682	198,785	53,291	10,684
Vegetables	3,472,813	2,309,896	906,344	196,502	106,880	283,179	256,336	191,558	319,958	1,741,678

The Port Sanitary Authority is also engaged in the issue of certificates of disinfection for foreign governments and other purposes in connection with the exportation of wool, jute sacks and cloth, tailors' cuttings, rags, second-hand bags and clothing, bales of cotton, etc.

The department also endorses under the United States, Canadian and other regulations, certificates regarding wholesomeness of food articles, and the sanitary conditions of the premises in which the articles were produced or stored, comprising poultry, game, cheese, bacon, hams, potatoes, preserved fish, pickled beef, tongues, sausage skins, lime juice, etc. The work attached to preparing and recording these certificates is considerable, and takes up a large amount of time of the department.

The Medical Officer to the Port Sanitary Authority desires to express his appreciation of the valuable assistance received from H.M. Collector of Customs and staff, the Mersey Docks and Harbour Board and their officers, and the various shipping companies who have co-operated with the Port Sanitary Authority in the maintenance of Public Health and the prevention of disease in the port. The Consular Bodies have at all times given courteous assistance.

A. A. MUSSEN,

Medical Officer of Health,
Port Sanitary Authority.

MUNICIPAL OFFICES,
LIVERPOOL,
31*st March*, 1931.