

[Report 1910] / Medical Officer of Health, Liverpool Port Health Authority.

Contributors

Port Health Authority of Liverpool. n 2014184020

Publication/Creation

1910

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PORT OF LIVERPOOL.



ANNUAL REPORT
OF THE
MEDICAL OFFICER OF HEALTH
TO THE
PORT SANITARY AUTHORITY,
FOR THE YEAR

1910.

[ORDERED BY THE PORT SANITARY AND HOSPITALS COMMITTEE TO BE
PRINTED, 9TH MARCH, 1911.]

LIVERPOOL:
C. TINLING AND CO., LTD., PRINTING CONTRACTORS, 53, VICTORIA STREET.

1911.

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Lent to Prof. Greenwood,
School of Hygiene.

PORT OF LIVERPOOL.



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LIVERPOOL:

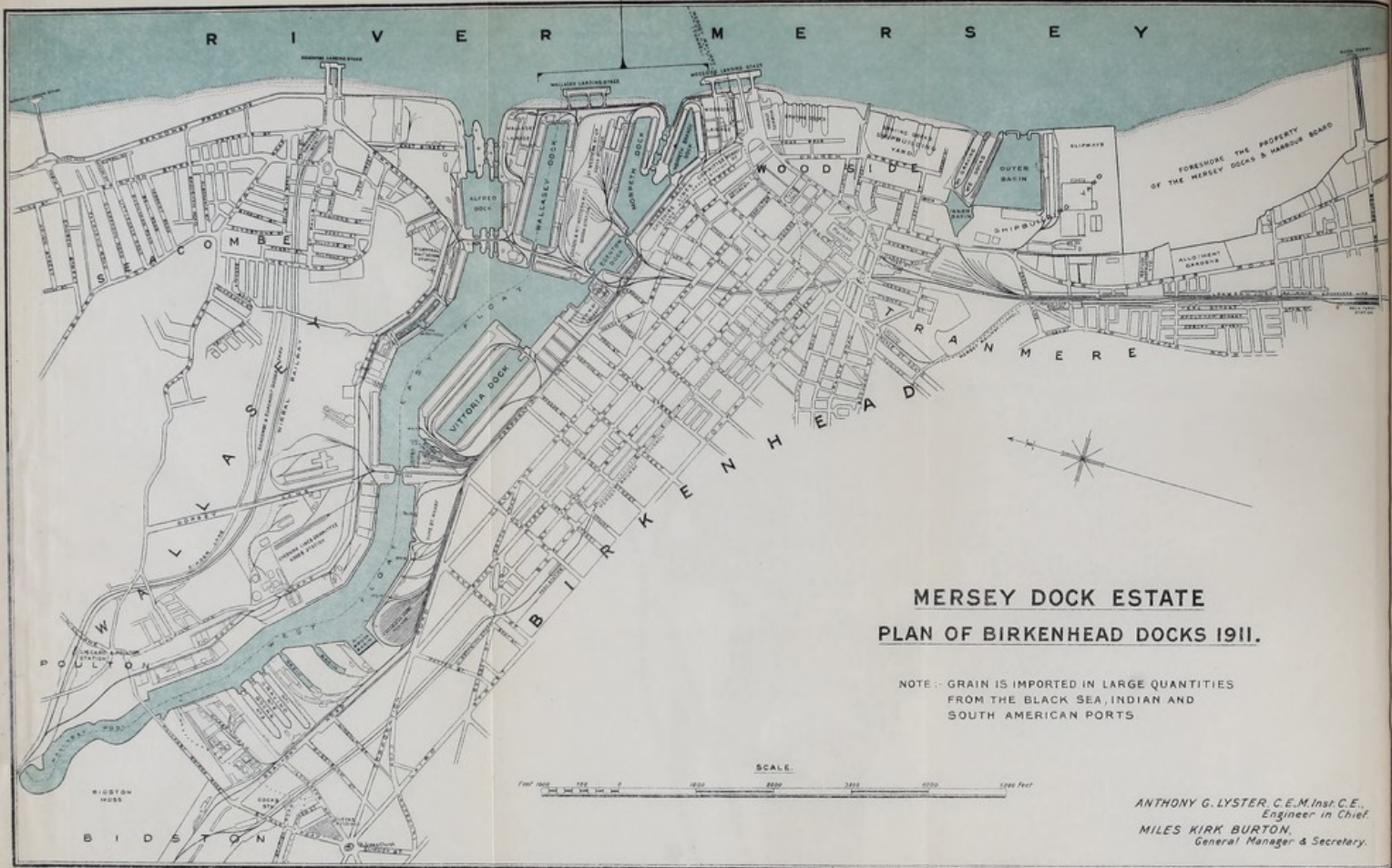
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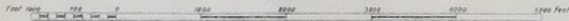
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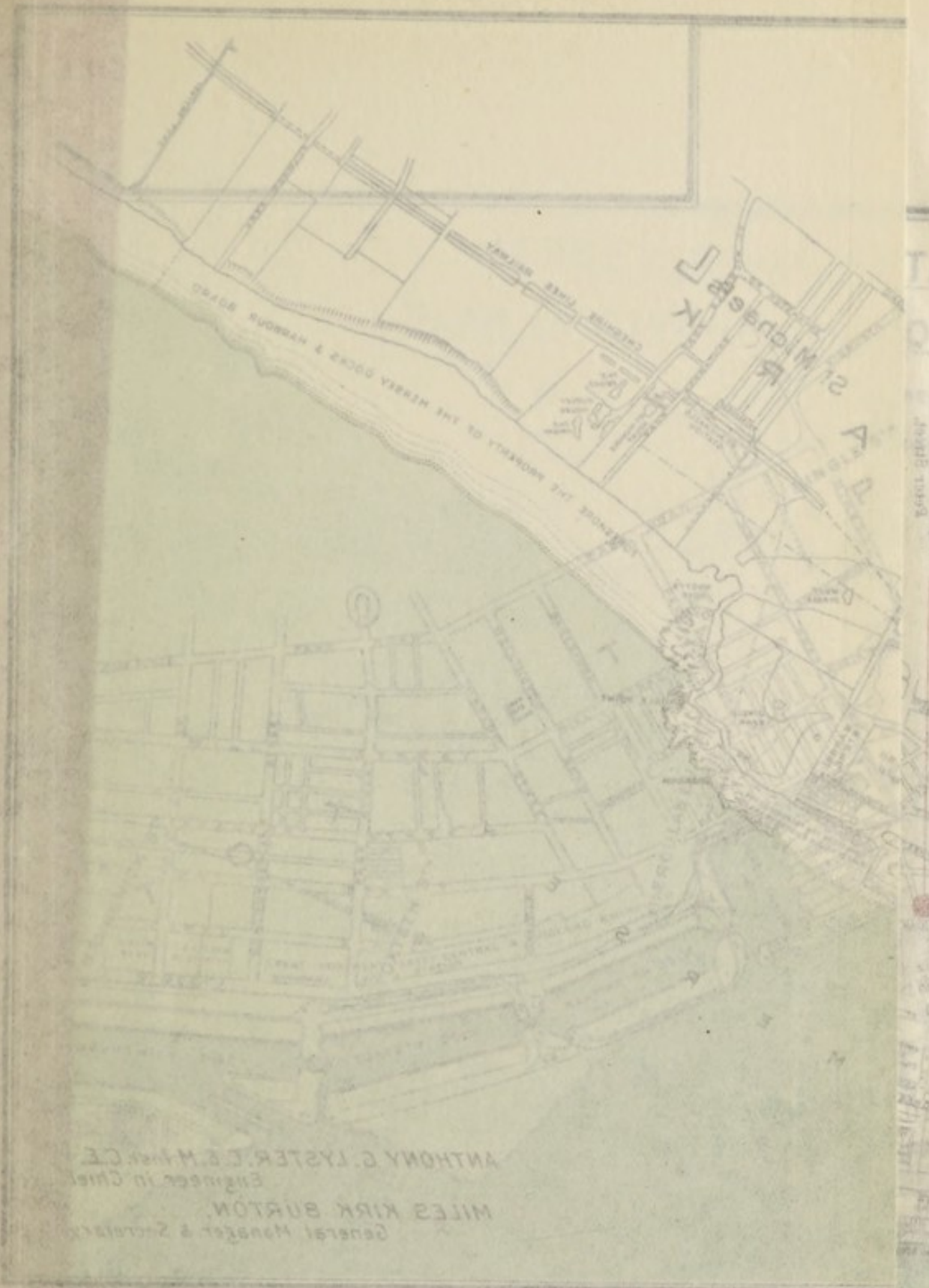
**MERSEY DOCK ESTATE
PLAN OF BIRKENHEAD DOCKS 1911.**

NOTE:-- GRAIN IS IMPORTED IN LARGE QUANTITIES
FROM THE BLACK SEA, INDIAN AND
SOUTH AMERICAN PORTS

SCALE.



ANTHONY G. LYSTER, C.E.M. Inst. C.E.,
Engineer in Chief.
MILES KIRK BURTON,
General Manager & Secretary.

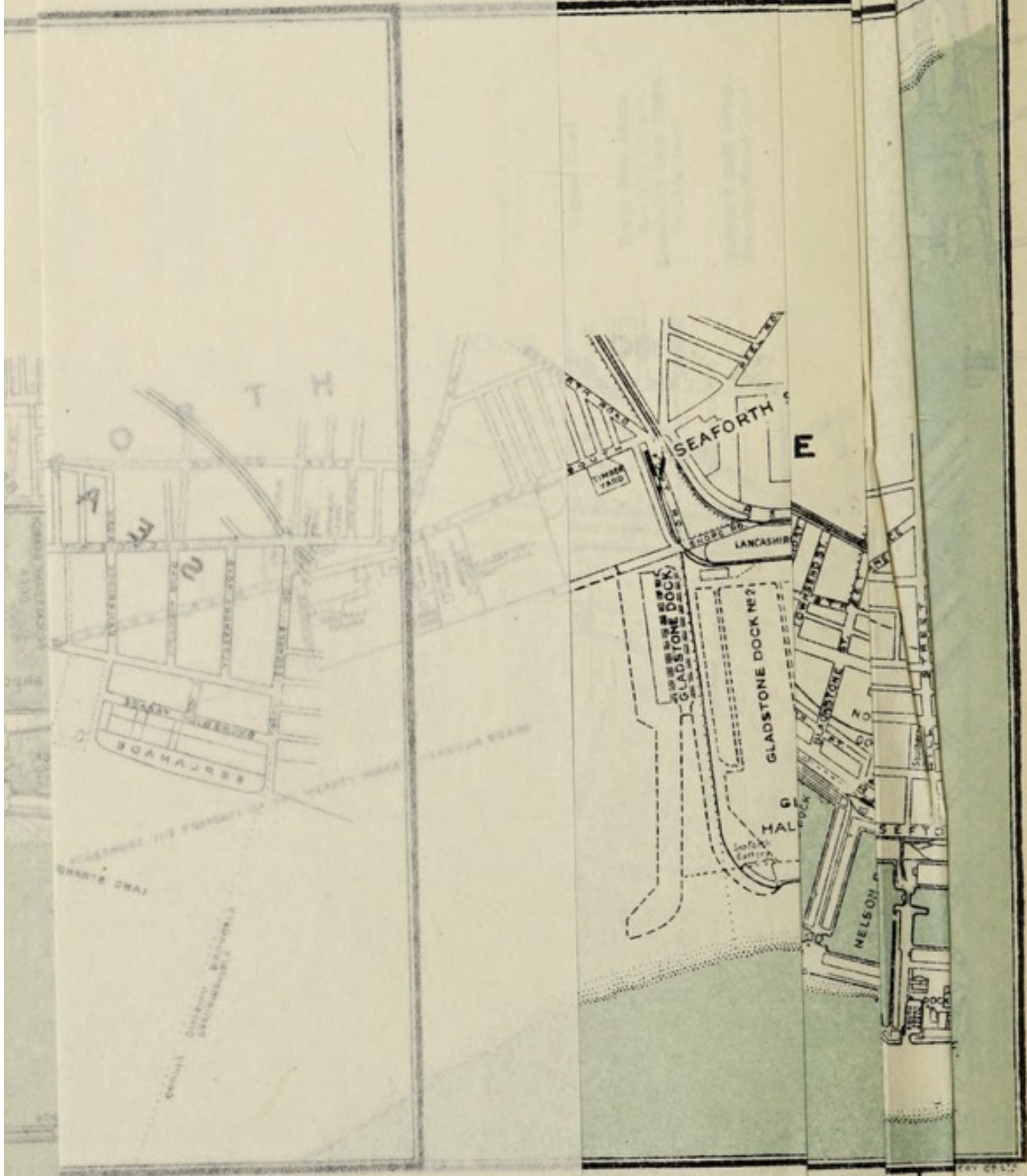


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PORT SANITARY AUTHORITY

OF

LIVERPOOL.

REPORT FOR THE YEAR 1910,

BY THE

MEDICAL OFFICER OF HEALTH.

In accordance with the duty imposed by the Local Government Board in their General Order, dated March 23rd, 1891, the following Report for the year ending December 31st, 1910, is made to the Liverpool Port Sanitary Authority.

The Report covers the work of the Authority during the year, and includes a summary of the measures adopted to discover Epidemic or Infectious Diseases on shipboard, and to prevent their introduction into the Port or further spread on shipboard, as well as the steps taken to discover and abate any conditions inimical to health existing on any ships, vessels or canal-boats lying within the area of the Port. Moreover, there is given an account of the action taken under the Regulations of the Local Government Board issued under the Public Health (Regulations as to Food) Act, dealing with Foreign Meat and Unsound Food. The Report further includes an account of action taken under the Aliens Act, together with certain statistical information kindly supplied by the Board of Trade regarding Emigration from Liverpool during the course of the year.

The jurisdiction of the Authority is co-extensive with the limits of the Port, and includes within its area, not only the Docks, Quays, Wharves, &c., belonging to the Mersey Docks and Harbour Board, the extent of which is set out below in tabular form, but also the Docks of the London & North Western Railway at Garston, as well as the lower

portion of the Estuary of the Mersey and the sea within three miles of the coast line extending from Hoylake to Formby Point. And its powers are exercisable over any vessels lying within this area.

The estate of the Dock Board, exclusive of certain lands at Dingle, Tranmere and Seaforth, is of the following dimensions:—

TOTAL WATER AREA AND LINEAL QUAYAGE OF THE LIVERPOOL AND BIRKENHEAD DOCKS AND BASINS.

	Water Area.		Lineal Quayage.	
	Acres.	Yards.	Miles.	Yards.
Liverpool Docks and Basins	427	2,967	26	1,466
Birkenhead Docks and Basins	171	3,259	9	1,422
Total	599	1,386	36	1,128

AREA OF THE DOCK ESTATE.

Liverpool	1,171 $\frac{1}{4}$ acres.
Birkenhead	506 ,,
Total	<u>1,677$\frac{1}{4}$,,</u>

The included maps are slightly modified, with the kind permission of the Dock Board, from two recently published by them.

It is not without interest to note that the Authority now enters upon its thirty-eighth year, having been constituted by an Order of the Local Government Board dated June 11th, 1874.

The most noteworthy features of the year 1910 are the increased amount of work thrown upon the Authority by the necessity for a close supervision of frozen meat from China, Queensland, and other areas; the extension of Cholera to various centres in the Mediterranean, Madeira, &c.; and the determination of a focus of Plague amongst the rats and rabbits of East Suffolk.

During the year an Order was issued by the Local Government Board giving additional powers to Local Authorities in whose districts Plague should be present or threatened amongst rats, as to the appointment of officers, &c. The Regulations dealing with imported foreign meat were also amended during the course of the year. These Orders, together with a Government Memorandum on Plague, are included in the Appendix.

CHOLERA, PLAGUE AND YELLOW FEVER.

Cholera.

Cholera during 1910 was more prevalent and was spread over a wider area than has been the case since the years 1892 and 1893, when the extensive epidemic at Hamburg occurred.

The usual prevalence in India, more particularly the Madras Presidency, occurred, and the disease was incident with greater or less severity upon China, Japan and the Philippines. A number of ports on the Javan and Batavian coasts were implicated to a considerable extent, and on one Liverpool vessel a small outbreak occurred amongst the pilgrims conveyed from those ports towards Jeddah.

But the main source of danger to this country arose from Russia, where, owing to the mild winter, the disease continued to be active throughout the early part of the year in the Government of Ekaterinoslav and the territory of the Don Cossacks, and also possibly in other centres. With the month of May it began to be disseminated from these foci, and there began the devastating epidemic in the industrial centres of the Don Valley which later brought trade to a standstill there and caused an immense loss of life. At the end of the month Rostov-on-Don suffered from an explosive outbreak of the character usually associated with grossly polluted water supplies. By the middle of June thirteen (13) Governments were infected, and vessels from the Sea of Azov were scheduled for medical inspection; by the end of June all Russian Black Sea Ports were regarded as infected, together with St. Petersburg and Cronstadt, and later Riga, which is in frequent and rapid communication with this port, was added to the list. One case of suspected Cholera was removed from a Liverpool bound vessel at Poti, and from another vessel a suspicious case of Diarrhœa was removed on arrival at Liverpool.

Cholera in
Russia.

Altogether, more than 200,000 cases of Cholera, of which fully 100,000 proved fatal, occurred in Russia, scarcely a single Government from Lublin to the Trans-Baikal remaining unaffected. One requires to go back to 1873 to find on European soil any approach to this enormous mortality. The heaviest incidence occurred upon the Provinces of Kuban (23,575 cases) and the Army of the Don (21,554 cases), and the Government of Ekaterinoslav (18,894 cases). The cause of this vast extension of disease is readily discoverable if the sanitary condition of the Russian cities is investigated. Thus, of the 1,082 cities of Russia, it is alleged that only 192 have waterworks and only 38 a drainage system.

From Russia, Cholera has been disseminated to such distant points as Vladivostock in the Far East and Quebec and Pernambuco in the West. The disease has retraced its steps towards the East, appearing successively in Persia and Mesopotamia. Isolated cases have been borne oversea to Denmark and Holland, and only the admirable system of quarantine on the German frontier and the sanitary administration in Berlin and other cities has prevented a severe extension of Cholera in Northern Europe. In Austria-Hungary along the valley of the Danube and in Croatia-Slavonia it obtained a foothold and was with difficulty suppressed.

Cholera in
Italy.

Early in August Cholera appeared in Italy in the Province of Bari, apparently having been conveyed there by pilgrims to the shrine of Santa Margherita di Savoia. Thence it spread to eighteen (18) provinces in Southern Italy and Sicily. The port of Naples was scheduled for inspection in October. At the end of 1910 Cholera was still present in eight of the provinces of Southern Italy. At least two vessels carrying Italian emigrants conveyed the disease to New York, but no extension occurred in the United States. Emigrants on an English steamer carried cases of the disease to Pernambuco and Manaos, and it also appears probable that it was emigrants who introduced Cholera into Funchal in Madeira, necessitating medical inspection of arrivals from that port from the beginning of December. One case of suspected Cholera, in the person of a saloon passenger returning from that island, which is within five or six days' sail from Liverpool, was removed to hospital on arrival at Liverpool. The result of a bacteriological examination was negative, but this does

not exclude the possibility of it having been a genuine case of Cholera, as the causal organism frequently ceases to be discoverable at a comparatively early stage of the disease—usually within ten days. On the other hand, it has been known to persist for so long as sixty-nine days after the onset of symptoms. In the connection it may be interesting to quote from the Annual Report on sanitary measures in India for 1908-9:—

The pilgrim-ship "Zamania" left Bombay on November 18th and arrived at Camaran Quarantine Station on the 27th, no Cholera having occurred during the voyage. Not until 12 days after leaving Bombay did Cholera begin to appear amongst the pilgrims. "The problem was, where did they become infected?" Excluding the ships and Camaran, Dr. Delpino believed that the germs of Cholera were brought from India in the intestines of the pilgrims themselves, and he attributed the Cholera at Camaran to a *Microbisme latent*. Everyone is familiar with the fact, first pointed out in 1893, that in times of Cholera epidemics a considerable proportion of the people exposed to infection carry in their intestines the germs of Cholera without manifesting any signs of the disease. These people are temporarily or permanently immune, and it is a generally accepted belief that when the germs carried by them reach a susceptible host they give rise to Cholera. Dr. Delpino appears to be of the opinion that the vibrios carried by the Indian pilgrims were not virulent, and that for some reason they became virulent at Camaran, and caused outbreaks of cholera in the *carriers themselves*. Prof. Kolle found Cholera vibrios in the apparently normal dejections of two members of a family, in which a case of Cholera had occurred. The two Cholera carriers were removed to a hospital where infection was out of the question and several days afterwards developed a fairly severe, and a slight attack respectively.

This latter sequence of events would appear to have occurred in the case of an emigrant from Naples who arrived at New York on the "Germanic," and was removed to hospital suffering from Malaria; sixteen days after leaving Naples he was taken ill with Cholera and died of that disease. Of even greater interest is the case removed from the "Royal George" at the quarantine station in the River St. Lawrence. This Russian emigrant left his native village on October 18th for Libau, where he was detained one day; he travelled to London, where he was detained eight days; and finally sailed from Bristol on the "Royal George." It was not until the 12th November, twenty-four days after leaving his native village, that he was taken ill with symptoms of Cholera, the diagnosis being bacteriologically confirmed by Professor Adami of Montreal. It would appear that such apparently healthy carriers play an important part in the spread of Cholera.

Cholera in
Turkey.

Late on in the year Cholera became epidemic in Constantinople, and spread thence to Adrianople and other places in Turkey. It had been conveyed to Trebizond and other areas in Turkey-in-Asia at an earlier period. From Constantinople it infected Smyrna, and Turkish troops carried it into Jedda and other parts of Arabia, causing this year's Haj to be declared Cholera infected.

The following ports were at different periods of the year regarded as Cholera infected:—All Russian Black Sea ports (including Akerman, Odessa, Nicolaieff, Kherson, Eupatoria, Sevastopol, Theodosia, Kertch, Yenikale, Berdiansk, Genitchesk, Mariupol, Taganrog, Rostov-on-Don, Temriuk, Novorossisk, Poti and Batoum), St. Petersburg, Riga, Trebizond, Naples, and Funchal (Madeira), and all vessels arriving thence were medically inspected. A large number of vessels which carry grain from these ports enter the Waterloo and Birkenhead Docks. This created a considerable amount of extra work and entailed an increased expenditure.

Plague.

Plague in
Suffolk.

Two noteworthy extensions of this disease call for particular observation. The first was the occurrence between September 16th and 29th of four cases of Pneumonic Plague at Freston, in Suffolk. The outbreak was investigated by Dr. Bulstrode of the Local Government Board, and not only was the diagnosis confirmed, but an extensive prevalence of Plague amongst rats in East Suffolk was discovered. Further research has revealed the presence within the last five years of what would appear to be the same disease at two other villages within the same area, in one case, at any rate, the bubonic as well as the pneumonic type appearing.

An extensive campaign of rat extermination is now in progress under the supervision of the Local Government Board and the East Suffolk County Council. The epidemiological conditions present in this country cause autumn to be the period of maximum prevalence of Plague. Early in November a few Plague infected rats were found in the London Docks, though whether there was any connection with the Suffolk outbreak is not clear.

Plague in
Mongolia.

The second extension was the appearance in Mongolia of an exceedingly virulent strain of Plague. The presence of an endemic centre amongst

the rodents of that country has been known since 1898. The type that it has assumed in human beings is the pneumonic. This type is communicable without the agency of rats or fleas, and is in fact closely akin to the strain of the Black Death of the Middle Ages and to the strain which is endemic in the vicinity of the Caspian Sea, if these two latter are not identical. It would appear to mark the inauguration of a fresh pandemic, and to be of a different geographical origin from the rat-borne, mainly bubonic strain which, arising in the interior of Southern China, appeared at Hong Kong in 1894, reached Bombay in 1896, and spread to the six divisions of the globe by 1899.

The spread of the disease was first reported from Mongolia in October, from whence it travelled along the Siberian Railway to Harbin, Moukden, Port Arthur, &c., in Manchuria, later appearing in Tientsin, Peking and Chefoo in China, causing a very high mortality rate in many of the Manchurian centres. The disease is all but invariably fatal in those unprotected. Fortunately the incubation period is short, and there is no likelihood of the conveyance of the disease for long distances without its presence being revealed, as may occur with rat-borne Plague.

The status of the previous pandemic has shown little alteration within the year. The usual prevalence of Plague in Amoy and other Southern Chinese areas occurred. Plague was also present in Japan, Indo-China and Siam. In India 545,000 cases occurred, as compared with 205,000 in 1909, the heaviest incident being as usual upon the Punjaub.

Plague in
China, Japan
and India.

In the New World Plague was still present sporadically in numerous centres on the western littoral. In Brazil the area of sporadic occurrence of cases includes Rio de Janeiro, Pernambuco, Bahia and Para. In Africa, Alexandria and Port Said were the only ports affected by the disease to any extent.

With the advent of summer Plague became epidemic in Odessa, where it continued prevalent throughout the year. Vessels from this port were already being inspected on account of Cholera. Apart from the endemic

Plague in
Russia.

centre in the Khirghiz Steppes, sporadic cases also occurred in Moscow, Kherson, Libau, &c. An outbreak, limited to nine cases, occurred in Lisbon, the disease having apparently been conveyed there by vessels trading with Portuguese possessions in Africa, possibly the Azores, where human Plague reappeared in December.

The Ports regarded as Plague-infected during the year were Karachi, Bombay, Calcutta, Bassein, Rangoon, and Odessa.

One case of Plague was landed at Suez in February from the s.s. "Scindia," bound from Bombay to Liverpool.

Yellow Fever.

This disease was more than usually prevalent in Para during the year. Ten cases occurred on board Liverpool-bound vessels from that port, one being landed here on arrival. A commission is now operating in Para with the object of stamping out the disease by the methods which have been so successful in Rio de Janeiro.

Sir Rubert Boyce, after a searching investigation of the circumstances, has reported Yellow Fever to be endemic in the West Coast of Africa, from which it has seldom failed to be recorded for intervals of more than a year or two throughout the past century. Cases occurred at Freetown, Sekondi and elsewhere during the year. Apart from Brazil, Ecuador, and a few small foci in certain parts of the Gulf of Mexico, no other cases of this disease were reported during the year.

Rats.

During the year 2,053 rats were caught by the Authority on board vessels from Plague-infected ports. In November the Authority appointed a ratcatcher to catch rats in the Liverpool and Birkenhead dock sheds; the rats thus caught, together with those obtained on ship-board, were submitted to the bacteriologist for examination. All proved free from Plague.

Systematic destruction of ship rats is carried out by almost all shipping companies, by trapping and the laying down of poison. Information was received during the course of the year as to close on 6,000 rats which were destroyed by one rat-catching firm on vessels lying in Liverpool docks. Eleven of these were examined by the Corporation Bacteriologist. Otherwise all such rats are destroyed in the ships' furnaces. Many companies also destroy the rats in the sheds of their appropriated berths, and the Mersey Docks and Harbour Board maintain rat-catchers in the warehouses, &c, on the dock estate.

Smallpox.

Ten cases of this disease occurred on Liverpool-bound vessels, of which two were landed in Liverpool. The ports of origin were:—

Bombay	6 cases on 4 vessels.
Spain	2 ,, ,, 2 ,,
River Plate	1 case.
Ceara	1 ,,

Fifty-four persons were vaccinated on the above vessels by the Port Medical Officers. The names and addresses of contacts were obtained and forwarded to the Authorities of the respective districts of destination.

Enteric Fever.

With the great decline which has occurred in this disease within recent years, particularly marked in the case of Liverpool, the importation of Enteric Fever assumes a greater importance than heretofore. Whilst the number of oversea-borne cases has but slightly increased in the last fifteen years, the relative proportion of ship cases to all cases notified in Liverpool has markedly increased, as is shown by the following table:—

IMPORTED ENTERIC FEVER DURING THE FIFTEEN YEARS
1896 TO 1910.

TABLE I.

Year.	Total notified cases of Enteric. (City and Port of Liverpool.)	"Ship" Cases	Proportion of ship cases to total cases.	Proportion of ship deaths to total deaths.
1896	1140	22	1.9 %	0.6 %
1897	1070	22	2.0 %	0.0 %
1898	930	33	3.5 %	2.9 %
1899	1020	22	2.1 %	1.6 %
1900	760	23	3.0 %	0.0 %
1901	879	22	2.5 %	3.5 %
1902	1009	29	2.8 %	2.1 %
1903	710	30	4.2 %	3.0 %
1904	454	24	5.3 %	2.5 %
1905	329	23	7.0 %	4.3 %
1906	502	36	7.1 %	3.7 %
1907	506	36	7.1 %	5.0 %
1908	460	28	6.4 %	2.9 %
1909	278	23	8.2 %	8.1 %
1910	234	30	12.8 %	19.4 %

Included in the term "ship" cases are (a) all imported cases treated at home, and (b) those imported cases in which, after removal to hospital in Liverpool, the diagnosis was finally verified; this, whether the person was sick on arrival, or sickening within the incubation period of typhoid. Cases moved to hospitals in districts outside the City of Liverpool are excluded. The cases, other than imported ones, which were removed to hospital from within the City have also been subjected to a similar revision.

It is evident that the proportion of deaths is increasing at a more rapid rate than is the proportion of cases. This is probably to be accounted for by the greater rapidity of travel; persons who, fifteen

years ago, would have died and been buried at sea, now arrive at Liverpool before the stage of the disease at which death most frequently occurs has been reached.

The western sea-board of America always provides the majority of the Enteric Fever importations. Liverpool-bound vessels on which cases of Enteric Fever occurred came from the following ports, and, as far as could be ascertained, the port of departure was, usually but not always, the point at which the infection occurred:—

	Landed at Liverpool and Manchester.	Landed abroad.
Montreal	2	0
Halifax and St. John, N.B. ...	4	0
Portland	1	0
New York	11	0
Baltimore and Newport News ...	2	0
Mexican Gulf Ports	3	0
Manaos	0	1
Rio de Janeiro	1	0
River Plate	5	2
West Coast South America ...	0	1
West Coast Africa	1	0
Mediterranean Ports	0	1
India and Burma	1	2
Java	1	0

There was a marked increase in the number of cases arriving during 1910 from New York in comparison with previous years.

Fresh Water Supplies on Ships.

Two vessels arrived at the Port on which a somewhat extensive prevalence of mild diarrhœa had occurred amongst the crew, and was apparently attributable to the character of the water supply. The results of chemical analysis are given in the appended table, which also includes an analysis of water from one vessel, the tanks of which had been filled at Odessa at a time when cholera was epidemic there. The tanks were emptied and disinfected in each case, and all vessels which arrived with fresh water on board obtained from Cholera-infected ports were similarly dealt with before proceeding to dock.

TABLE II.
Chemical Analysis of Suspected Waters from Ships' Tanks.

Results expressed in parts per 100,000.

No.	Name of Ship.	Total solid matter in solution	Oxygen required to Oxidise in		Ammonia.	Ammonia from organic matter.	Nitrogen as Nitrates.	Combined Chlorine	Remarks by Analyst.
			15 min.	3 hours.					
1	Clan Colquhoun, from Karachi.	38.5	.010	.018	.003	.003	.568	9.4	The water was turbid and brownish yellow and contained a considerable deposit of hydrated oxide of iron and calcium carbonate. A good many infusoria were present, and bacteria were very numerous. This sample contains some sea-water or brackish water. The water is better than its appearance suggests. There is no evidence of recent sewage pollution.
2	City of Berlin, from Malaga.	32.4	.010	.014	.002	.001	.043	1.8	The sample contained a good many bacteria but no other organisms were observed. The Chemical Analysis indicates that this is a very good water.
3	Phrygia, from Odessa.	41.2	.012	.020	.002	.003	.58	5.6	The sample contained a good many bacteria, but no other organisms were observed. It was clear, faintly yellow and odourless. The Chemical Analysis indicates that this is now a very fair sample of water. The proportion of nitrates and chlorides is moderately high:—the significance of this depends on the nature of the source and the character of the storage.

Consular Health Certificates.

During the year the demand for certificates indicating the freedom of the City or Port from quarantinable infectious sickness showed an increase, the number of certificates of this character issued to merchants and shipowners for various Consular purposes during 1910 being 445.

Anthrax.—There has been a marked diminution in the number of cases of this disease arising from imported materials during the past few years. Ten cases were reported during the year.

An increased knowledge of the disease and the channels of infection amongst those who handle imported animal products has no doubt tended to this result; in addition, a lessened prevalence of the disease abroad has contributed to the decrease.

The Port Isolation Hospital.

The Public Health Acts and various orders of the Local Government Board regarding sea borne infectious disease, necessitated the question of isolation to be considered, and in 1877 the Port Sanitary Authority erected an hospital to accommodate cases.

It was erected on land immediately adjoining the quarantine area. During 1902 when plague seriously threatened the Port, it was extended by the addition of a more permanent and modern pavilion, with suitable laundry, disinfecting apparatus and nurses' quarters.

The Staff of the Port Sanitary Authority.

The Staff of the Port Sanitary Authority comprises—

- The Medical Officer of Health.
- 2 Assistant Medical Officers.
- 1 extra Assistant Medical Officer for tidal purposes.
- 6 Sanitary Inspectors.
- 6 Meat and Food Inspectors.
- 3 Clerks.

TABLE 3.

INFECTIOUS DISEASE.

The actual number of cases of infectious sickness landed from vessels arriving in the Port of Liverpool during the years 1909 and 1910, and the comparison with the average of the preceding 10 years, is shown in the following Table:—

Diseases.	Number of Cases.		Average for the 10 years preceding 1909.
	1909.	1910.	
Smallpox	4	2	12·3
Scarlatina	27	19	10·7
Typhus Fever	0	0	0·5
Enteric Fever	33	43	30·9
Diphtheria	4	9	4·9
Measles	16	25	17·3
Whooping Cough	0	1	0·2
Erysipelas	3	5	4·7
Chicken Pox	11	3	4·7
Cholera and Choleraic Diarrhœa .	0	3	0·0
Yellow Fever.....	0	1	0·2
Plague	0	0	1·1
Suspected Plague	14	6	5·6
German Measles	0	0	0·9
Puerperal Fever	0	0	0·2
Dysentery	0	5	0·0
Totals	112	122	94·2

TABLE 4.

INFECTIOUS DISEASE.

The number of cases of infectious sickness reported to have occurred on Liverpool-bound ships during the years 1909 and 1910, and which were disposed of prior to the arrival of the vessel at this port, and the average of such cases for the preceding 10 years, are as follows:—

Diseases.	Number of Cases.		Average for the 10 years preceding 1909.
	1909.	1910.	
Smallpox	18	8	12·4
Scarlatina	2	3	1·0
Typhus Fever	0	0	0·2
Enteric Fever	12	4	10·0
Diphtheria.....	3	0	1·8
Measles	3	4	5·9
German Measles ...	0	5	0·2
Erysipelas	0	1	0·2
Chicken Pox ...	18	0	2·5
Cholera and Choleraic Diarrhœa..	0	14	1·1
Yellow Fever	7	10	4·3
Plague	0	3	1·1
Suspected Plague.....	4	2	1·3
Totals..	67	54	42·0

The following Table gives the particulars of the 119 vessels on board with the measures adopted in each case :—

TABLE 5.

Date 1910.	Name of Vessel.	Where from.	Nature of Sickness.	Hospital to which Patient was removed.
Jan. 2	Tunisian ...	Halifax ..	Enteric Fever	Grafton Street.
Jan. 7	Lusitania ...	New York ...	Scarlatina ...	... ..
Jan. 9	Corsican ...	St. John's	Scarlatina ...	Park Hill ...
Jan. 11	Hesperian ...	St. John, N.B	Enteric Fever	... ..
Jan. 12	Highland Harris ...	River Plate ...	Small-pox ...	... ..
Jan. 21	City of Glasgow ...	Bombay ..	Small-pox ...	... ..
Jan. 25	Honorius ...	River Plate ...	Small-pox ...	... ..
Jan. 28	Ryall ...	Karachi ...	Enteric Fever	... ..
Feb. 3	Campania ...	New York ...	Measles ... (2 cases)	Fazakerley ...

reported on their arrival as having, or having had, Infectious Disease

REMARKS.

The patient, a steward, was removed to Hospital and the vessel and bedding disinfected by the Port Sanitary Officers and the City Staff.

The patient, a child passenger, developed the disease after arrival at her home in London. Disinfection carried out by the Port Sanitary Authority.

The patient was removed to Hospital and the vessel and bedding disinfected by the Port Sanitary Officers and the City Staff.

The patient, a steward, who had gone to his home at Govan, was removed to Hospital in that Town. Disinfection of the vessel was carried out by the Port Sanitary Officers.

This vessel landed one of the crew, a seaman, suffering from smallpox, at Las Palmas, River Plate, on the homeward passage. All were well on arrival in this Port.

One of the native crew, suffering from smallpox, was left in Hospital at Port Said, on the homeward passage.

The vessel landed a Spanish emigrant, suffering from smallpox, at Monte Video, on the outward passage, where disinfection was carried out.

The patient, one of the crew, was left in Hospital at Port Said, on the homeward passage. Vessel was disinfected by the ship's officers.

The patients were removed to Hospital and the vessel disinfected by the Port Sanitary Officers.

Date 1910.	Name of Vessel.	Where from.	Nature of Sickness.	Hospital to which Patient was removed.
Feb. 3	Indefatigable. Training ship	In the river...	Scarlatina ...	Park Hill
Feb. 8	Hesperian ...	St. John ...	Erysipelas .	... ..
Feb. 15	Ivernia... ...	New York ...	Measles ...	... ..
Feb. 18	Mauretania...	New York ...	Measles ...	... ..
Feb. 23	Scindia ...	Bombay ...	Plague ...	... ..
Feb. 23	Scindia ...	Bombay ...	Suspected Plague ...	New Ferry ...
Feb. 28	Harmodius ... for Manchester	River Plate...	Enteric Fever	... ..
Mar. 7	Amarapoora	Rangoon ...	Dysentery (5 cases)	New Ferry ...
Mar. 7	Friesland ...	Philadelphia	Diphtheria ...	Fazakerley ...

REMARKS.

The patient was brought ashore and removed to the City Hospital, Park Hill. Disinfection of the vessel and bedding was carried out by the Ship's Officers.

The patient, a second class passenger, died on the homeward passage, and was buried at sea.

The patient, a saloon passenger, was landed at Queenstown, on the homeward passage. Vessel disinfected by the Port Sanitary Officers.

The patient being convalescent and free from infection was allowed to proceed. Vessel disinfected by the Port Sanitary Officers.

The patient, a fireman, one of the native crew, was landed and taken into Hospital at Suez, on the homeward passage, where disinfection of the vessel and bedding was carried out, and again on arrival at Marseilles.

On arrival in this Port one of the native crew, who was suffering from symptoms suspicious of Plague, was removed to the Port Hospital for observation. The sickness proved to be non-infectious.

One of the crew of this vessel, who proceeded with her to Manchester, developed the disease after arrival in that Port.

Five of the Lascar crew of this vessel were reported as suffering from Dysentery. One of these died immediately after arrival in this Port; the other four were removed to the Port Hospital. Disinfection of the vessel and bedding was carried out by the Port Sanitary Officers and the City Staff.

The patient was removed from his home to the Fazakerley Hospital and the vessel and bedding disinfected by the Port Sanitary Officers and the City Staff.

Date 1910.	Name of Vessel.	Where from	Nature of Sickness.	Hospital to which Patient was removed.
Mar. 8	Mauretania...	New York ...	Scarlatina ...	Park Hill ...
Mar. 12	Castalia ...	Bombay ...	Small-pox ..	... ..
Mar. 24	Ivernia ...	Boston ...	Mumps ...	Fazakerley ...
Mar. 26	Newcastle ... for Manchester	Bombay ...	Small-pox	New Ferry ...
Mar. 28	Baltic ...	New York ...	Scarlatina ...	Netherfield Road
Mar. 28	Elysia ...	Bombay ...	Small-pox ...	... ..
April 2	Carmania ...	Mediterranean Ports	Enteric Fever	... ..
April 6	Carmania ...	New York ...	Scarlatina ...	Fazakerley ...
April 9	Victorian ...	St. John, N.B.	Erysipelas ...	Fazakerley ...
April 9	Orita ...	South American Ports	Small-pox ...	New Ferry ...

REMARKS.

A stowaway, who was found to be suffering from Scarlatina on arrival of the vessel in this Port, was removed to Hospital, and the vessel and bedding disinfected by the Port Sanitary Officers and the City Staff.

The patient, one of the Lascar crew, was left in Hospital at Marseilles, on the homeward passage, where disinfection of the vessel and bedding was carried out. All were well on arrival in this Port.

The patient on arrival was removed to the City Hospital at Fazakerley.

One of the crew was landed at Suez, suffering from Smallpox, and two others at Avonmouth. On arrival in this Port three of the crew were removed to the Hospital for observation but did not develop the disease. The vessel was disinfected before proceeding to Manchester.

The patient was removed to Hospital and the vessel and bedding disinfected by the Port Sanitary Officers and the City Staff.

This vessel left one of the passengers at Marseilles, on the homeward passage, suffering from Smallpox. Disinfection of the vessel and the vaccination of the crew was carried out at Marseilles.

The patient, being convalescent on arrival, was allowed to proceed. Disinfection of the vessel and bedding was carried out by the Port Sanitary Officers and the City Staff.

The patient, a steward, who had gone to his home in the City, was removed to Hospital and the vessel and bedding disinfected by the Port Sanitary Officers and the City Staff.

The patient was removed to Hospital, and the vessel disinfected by the Port Sanitary Officers and the City Staff.

A passenger, who joined the vessel at Corunna on the home passage, developed the disease after arrival in the City. All contacts were re-vaccinated, the patient removed to Hospital, and the vessel and bedding disinfected by the Port Sanitary Officers and the City Staff.

Date 1910.	Name of Vessel.	Where from.	Nature of Sickness.	Hospital to which Patient was removed.
April 10	Laurentic ...	New York ...	Erysipelas (2 cases)	Fazakerley ...
April 14	Campania ...	New York ...	Measles ...	Fazakerley ...
April 15	Raphael ...	Monte Video	Enteric Fever	... ..
April 19	Mauretania ...	New York ...	Enteric Fever	Grafton Street
April 22	Virginian ...	Halifax ...	Scarlatina ...	Grafton Street
April 24	Caronia ...	New York ...	Scarlatina (2 cases)	... ..
April 24	Caronia ...	New York ...	Enteric Fever	Netherfield Road
April 27	Augustine ...	Manaos ...	Enteric Fever	... ..
April 30	Cymric ...	Boston ...	Measles ...	Fazakerley ...
May 4	Cornishman	Portland ...	Enteric Fever	Netherfield Road

REMARKS.

The patients were removed to Hospital, and the vessel disinfected by the Port Sanitary Officers and the City Staff.

One of the passengers, suffering from measles, was removed to the City Hospital at Fazakerley. Vessel disinfected by the Port Sanitary Officers.

One of the firemen died from Enteric Fever at Calais on the homeward passage. Disinfection carried out by the Ship's Officers.

The patient was removed to Hospital, and the vessel and bedding disinfected by the Port Sanitary Officers and the City Staff.

One of the passengers, suffering from Scarlatina, was removed to Hospital, and the vessel and bedding disinfected by the Port Sanitary Officers and the City Staff.

The patients, two children passengers, proceeded to London, being isolated in a special compartment. Disinfection of the vessel and bedding was carried out by the Port Sanitary Officers and the City Staff.

The patient, a steward, was removed to Hospital, and the vessel and bedding disinfected by the Port Sanitary Officers and the City Staff.

One of the steerage passengers died from Enteric Fever on the homeward passage. Disinfection of the vessel and bedding carried out by the Port Sanitary Officers and the City Staff.

The patient, a second class passenger, was removed to Hospital, and the vessel disinfected by the Port Sanitary Officers and the City Staff.

The patient was removed to Hospital, and the vessel and bedding disinfected by the Port Sanitary Officers and the City Staff.

Date 1910.	Name of Vessel.	Where from.	Nature of Sickness	Hospital to which Patient was removed.
May 4	Celtic ...	New York ...	Scarlatina ...	Grafton Street ..
May 6	Megantic ...	Boston ...	Diphtheria ...	Fazakerley ...
May 6	Oakwood ...	Cienfuegos ...	Scarlatina ...	Fazakerley ...
May 10	Denbigh Hall	Bombay ...	Scarlatina ...	Birkenhead ...
May 14	City of Glasgow	Bombay ...	Chicken-pox	... ..
May 17	Brittany ...	Rosario ...	Typhoid Fever	... ..
May 17	Arabic ...	New York ...	Erysipelas ...	Fazakerley ...
May 18	Mauretania	New York ...	Measles (2 cases)	Fazakerley ...
May 24	Lusitania ...	New York ...	Measles (2 cases)	... ..
May 25	Balasure ...	San Francisco	Beri-Beri ...	Royal Southern

REMARKS.

The patient, a steward, was removed to Hospital, and the vessel and bedding disinfected by the Port Sanitary Officers and the City Staff.

The patient, a saloon passenger, was removed to Hospital, and the vessel and bedding disinfected by the Port Sanitary Officers and the City Staff.

The patient was removed to Hospital, and the vessel and bedding disinfected by the Port Sanitary Officers and the City Staff.

The patient, one of the engineers, was removed to the Birkenhead Infectious Hospital. Disinfection of the vessel carried out by the Port Sanitary Officers.

The patient, being convalescent and free from infection, was allowed to proceed. Vessel disinfected by the Port Sanitary Officers.

One of the firemen had suffered from Typhoid Fever on the homeward passage, but had recovered on arrival in this Port. Vessel disinfected by the Port Sanitary Officers.

The patient was removed to Hospital, and the vessel and bedding disinfected by the Port Sanitary Officers and the City Staff.

The patients, two steerage passengers, were removed to the Fazakerley Hospital, and the vessel disinfected by the Port Sanitary Officers.

The patients, saloon passengers, being convalescent, were allowed to proceed. Vessel disinfected by the Port Sanitary Officers.

Three of the crew suffered from Beri-Beri on the homeward passage, and on arrival here, one of these (a seaman) was removed to the Royal Southern Hospital. Disinfection was carried out.

Date 1910.	Name of Vessel.	Where from.	Nature of Sickness.	Hospital to which Patient was removed.
May 27	Haverford ...	Philadelphia	Measles (4 cases)	... ..
June 4	Megantic ...	Montreal ...	Measles (2 cases)	Park Hill ...
June 6	Cedric ...	New York ...	Measles ...	Park Hill ...
June 8	Jerome ...	Para ...	Measles (2 cases)	... ..
June 8	Mauretania	New York ...	Enteric Fever	Grafton Street
June 8	Mauretania	New York ...	Measles ...	Park Hill ...
June 14	Lusitania ...	New York ...	Measles ...	Fazakerley ...
June 14	Virginian ...	Montreal ...	Chicken-pox (2 cases)	Fazakerley ...
June 20	Baltic ...	New York ...	Measles ...	Fazakerley ...
June 23	Campania ...	New York ...	Scarlatina ...	Fazakerley ...

REMARKS.

The patients, steerage passengers, being convalescent and free from infection, were allowed to proceed. The vessel was disinfected by the Port Sanitary Officers.

Two of the crew who were suffering from Measles were removed to the City Hospital, and the vessel disinfected by the Port Sanitary Officers and the City Staff.

The patient, a third-class passenger, was removed to Hospital, and the vessel disinfected by the Port Sanitary Officers and the City Staff.

Two passengers, suffering from Measles, were landed at Lisbon on the home ward pasage.

The patient was removed to Hospital, and the vessel and bedding disinfected by the Port Sanitary Officers and the City Staff.

The case was removed to Hospital, and the vessel disinfected by the Port Sanitary Officers and the City Staff.

The patient was removed to Hospital, and the vessel disinfected by the Port Sanitary Officers and the City Staff.

Two second class passengers, who were suffering from Chicken-pox, were removed to Hospital, and the vessel and bedding disinfected by the Port Sanitary Officers and City Staff.

The patient was removed to Hospital, and the vessel disinfected by the Port Sanitary Officers and the City Staff.

The patient was removed to Hospital, and the vessel and bedding disinfected by the Port Sanitary Officers and the City Staff.

Date 1910.	Name of Vessel.	Where from.	Nature of Sickness.	Hospital to which Patient was removed.
June 24	Cymric ...	Boston ...	Diphtheria ...	Mill Lane ...
June 26	Canada ...	Montreal ...	Diphtheria ...	Fazakerley ...
June 28	Ortega ...	Callao ...	German Measles (5 cases)	... ..
July 2	City of Karachi	Karachi ...	Suspected Plague	New Ferry ...
July 4	Cedric ...	New York ...	Scarlatina (4 cases)	Grafton Street ..
July 6	Teodoro-de- Larrinaga for Manchester	Galveston ...	Enteric Fever	... ..
July 11	Arabic ...	New York ...	Typhoid Fever	Netherfield Road
July 14	Student ...	Vera Cruz ...	Typhoid Fever	Royal Southern
July 15	Dictator ... for Manchester	Pensacola ...	Enteric Fever	... ..
July 15	Arabic ...	New York ...	Scarlatina (2 cases)	Fazakerley ...

REMARKS.

A passenger by this vessel, who had gone to the White Star Boarding House, was removed to Hospital, and the vessel and bedding disinfected by the Port Sanitary Officers and City Staff.

The patient was removed to Hospital, and the vessel and bedding disinfected by the Port Sanitary Officers and the City Staff.

Five children, suffering from German Measles, were landed at Vigo, on the homeward passage.

One of the native crew, who was suffering from symptoms suspicious of Plague, was removed to the Port Hospital, for observation and the vessel and bedding disinfected by the Port Sanitary Officers and the City Staff. The sickness proved to be of a non-infectious nature.

Four children, passengers, suffered from Scarlatina during the homeward passage. Two of these died and were buried at sea; the others were removed to the City Hospital, and the vessel and bedding disinfected by the Port Sanitary Officers and City Staff.

The patient, a seaman, proceeded with the vessel, the authorities at Manchester being notified.

The patient was removed to Hospital, and the vessel and bedding disinfected by the Port Sanitary Officers and City Staff.

One of the crew, a seaman, was admitted to the Royal Southern Hospital, suffering from Typhoid Fever. Disinfection of the vessel and bedding was carried out by the Port Sanitary Officers and City Staff.

The patient proceeded with the vessel, the authorities at Manchester being notified.

Two children, suffering from Scarlatina, who arrived by this vessel, were removed from their home in Walton Breck Road, to Fazakerley Hospital, and the vessel and bedding disinfected by the Port Sanitary Officers and the City Staff.

Date 1910.	Name of Vessel.	Where from.	Nature of Sickness.	Hospital to which Patient was removed.
July 16	Virginian ...	Montreal ...	Enteric Fever	Netherfield Road
July 16	Caronia ..	New York ...	Enteric Fever	Netherfield Road
July 19	Mauretania ...	New York ...	Measles ...	Park Hill ...
July 25	Celtic ...	New York ...	Enteric Fever (2 cases)	Netherfield Road
July 26	Olympia ...	Bombay ...	Enteric Fever	Northern ...
Aug. 4	Augustine ...	Manaos and Para	Yellow Fever	... ..
Aug. 13	Highland Enterprise	River Plate	Enteric Fever	Netherfield Road
Aug. 13	Mendi ...	West Coast of Africa	Enteric Fever	Mill Road ...
Aug. 15	Antony ...	Para ...	Measles ...	... ..
Aug. 16	Mauretania ...	New York ...	Enteric Fever	Netherfield Road

REMARKS.

The patient was removed to Hospital, and the vessel and bedding disinfected by the Port Sanitary Officers and the City Staff.

One of the stewards, suffering from Enteric Fever, was removed to Hospital, and the vessel and bedding disinfected by the Port Sanitary Officers and the City Staff.

The patient, a child, steerage passenger, was removed to Hospital, and the vessel disinfected by the Port Sanitary Officers and the City Staff.

Two saloon passengers, suffering from Enteric Fever, were removed to Hospital, and the vessel and bedding disinfected by the Port Sanitary Officers and the City Staff.

The patient was removed to Hospital, and the vessel and bedding disinfected by the Port Sanitary Officers and the City Staff.

One case of Yellow Fever occurred during the homeward passage; the patient died and was buried at sea. On arrival in Liverpool, the vessel was visited, and all on board medically inspected. The crew and passengers were found to be well. Disinfection of the vessel was carried out by the Port Sanitary Officers.

The patient was removed to Hospital, and the vessel and bedding disinfected by the Port Sanitary Officers and the City Staff.

One of the crew of this vessel was admitted to the Mill Road Infirmary, suffering from Enteric Fever. Disinfection of the vessel and bedding was carried out by the Port Sanitary Officers and the City Staff.

This vessel landed a case of Measles at Lisbon, on the homeward passage.

A second class passenger who was suffering from Enteric Fever was removed to Hospital, the vessel and bedding being disinfected by the Port Sanitary Officers and City Staff.

Date 1910.	Name of Vessel.	Where from.	Nature of Sickness.	Hospital to which Patient was removed.
Aug. 18	Esneh ...	Poti, Batoum and Odessa	Diarrhœa ...	... ..
Aug. 19	Dominic ...	Ceara ...	Small-pox ...	New Ferry ...
Aug. 21	Celtic ...	New York ...	Enteric Fever	Netherfield Road
Sept. 5	Circassian ...	Bombay ...	Enteric Fever	Netherfield Road
Sept. 8	Clan Cameron	Java ...	Typhoid Fever	Netherfield Road
Sept. 10	Margaret Jones	Odessa ...	Choleraic Diarrhoea	New Ferry ...
Sept. 15	Counsellor ..	Rangoon ...	Enteric Fever	... ..

REMARKS.

This vessel on arrival reported that a seaman (J. Galway) was taken ill with Diarrhœa whilst at Poti; when at Odessa he was removed to the Shore Hospital, but returned after three or four days and had been well since then, that is 19 days before arrival in this Port. The vessel was medically examined and all were found well on board. The forecastles were disinfected and the clothing and bedding belonging to Galway destroyed. The water tanks which had been filled at Batoum were emptied and disinfected.

This vessel arrived on the 19th and reported having one case of Small-pox. The patient, a seaman, sickened on the 3rd of August, and was at once isolated. The vessel was visited on arrival, and all were found well. Thirty-three persons were vaccinated, and the patient removed to the Port Hospital in the ship's boat. Disinfection of the vessel and bedding was carried out by the Port Sanitary Officers and the City Staff.

The patient, a steward, was removed to the City Hospital, Netherfield Road, and the vessel and bedding disinfected by the Port Sanitary Officers and the City Staff.

The carpenter of this vessel, who was suffering from Enteric Fever, was removed to Hospital and the vessel and bedding disinfected by the Port Sanitary Officers and the City Staff.

One of the native crew, suffering from Typhoid Fever, was removed to Hospital and the vessel and bedding disinfected by the Port Sanitary Officers and the City Staff.

The vessel left Odessa on the 31st of August. William Jackson, 2nd Engineer, who had been ailing for some days, was reported sick with Diarrhœa. The next day he was reported suffering from slight Fever and very severe Diarrhœa. On arrival at this Port on the 10th of September, the vessel was visited and the patient found convalescent and all others found well. Jackson was removed to Hospital in the ship's boat. The fresh water tanks were disinfected and emptied and the effects of all on board, all bedding, quarters and bilges disinfected by the Port Sanitary Officers and the City Staff. The vessel was then allowed to proceed to Dock. The crew remained on board and were visited daily, but continued in good health. A subsequent bacteriological examination of the patient proved negative.

The patient, one of the native crew, suffering from Enteric Fever, died on the homeward passage. Disinfection of the vessel and bedding carried out by the Port Sanitary Officers and the City Staff.

Date 1910.	Name of Vessel	Where from.	Nature of Sickness.	Hospita to which Patient was removed.
Sept. 19	Oriana ...	West Coast South America	Enteric Fever	... ..
Sept. 26	Megantic ...	Montreal ...	Typhoid Fever	Netherfield Road
Sept. 26	Ping Suey ...	Macassar and Javan Ports	Cholera (3 cases)	... ..
Sept. 28	Mauretania	New York ...	Typhoid Fever	Netherfield Road
Sept. 30	Empress of Britain	Montreal ...	Measles ... (3 cases)	New Ferry ...
Oct. 4	Lanfranc ...	Para, &c. ...	Yellow Fever	... ..
Oct 11	City of Berlin	Oporto ...	Choleraic Diarrhoea	New Ferry ...

REMARKS.

The patient, a saloon passenger, died on the homeward passage and was buried at sea. Disinfection of the vessel and bedding was carried out by the Port Sanitary Officers and the City Staff.

The patient was removed to Hospital and the vessel and bedding disinfected by the Port Sanitary Officers and the City Staff.

Whilst this vessel was lying at Samarang a death from Cholera occurred amongst the Pilgrims taken on board for Jeddah. Two other deaths from Cholera occurred. All three bodies were buried at sea. During the voyage deaths also took place from the following causes—Senile Decay and Cardiac Failure, 3; Sea Sickness, 2; Heart Disease, 2; Child Birth, 1; Weakness, Cardiac Failure, 1; Gastro-Malaria, 1; Cardiac Failure, 1. Thus, altogether there were 14 deaths on board in 23 days. On arrival at Camaran the vessel was quarantined for twelve days. The pilgrims were landed and disinfected; water tanks emptied, and complete disinfection of the vessel carried out. The ship's surgeon was landed at Suez suffering from Fever and Dysentery. On arrival in this Port the vessel was boarded by the Officers of H.M. Customs, but the master failed to report any deaths or sickness as having occurred during the voyage. Proceedings were taken against the master under the Regulations of the Local Government Board, the case being heard before the Deputy Stipendiary Magistrate, the master being fined £5 and costs.

The patient, a passenger, was removed to Hospital and the vessel and bedding disinfected by the Port Sanitary Officers and the City Staff.

Three children, passengers, who were suffering from Measles were removed to Hospital and the vessel disinfected by the Port Sanitary Officers.

On September 28th the baggage master died from Yellow Fever whilst at Lisbon. On arrival in Liverpool all were found well on board. The vessel and crew's quarters were disinfected by the Port Sanitary Officers.

Ten cases of Choleraic Diarrhoea occurred amongst the crew between Oporto and Liverpool, water having been taken from the River Douro, at Oporto. Four of the cases were of a severe nature, and one seaman who was still sick was removed to the Port Hospital. Disinfection of the vessel was carried out by the Port Sanitary Officers.

Date, 1910.	Name of Vessel.	Where from.	Nature of Sickness.	Hospital to which Patient was removed.
Oct. 11	Indefatigable Training Ship	in the River Mersey	Typhoid Fever	Netherfield Road (6 cases)
Oct. 13	Augustine ..	Manaos and Par	Yellow Fever (5 cases)	New Ferry ...
Oct. 14	Empress of Ireland	Quebec ...	Erysipelas ...	Fazakerley ...
Oct. 15	Orissa ...	South American Ports	Enteric Fever	Bootle ...
Oct. 17	Martaban ...	Rangoon ...	Suspected Plague	New Ferry ...
Oct. 20	Almond Branch	South American Ports	Typhoid Fever	Netherfield Road
Oct. 29	Thimblely ... for Manchester	Newport N.	Typhoid Fever	... ..
Oct. 29	Crown of Castile	Wilmington	Typhoid Fever	Netherfield Road

REMARKS.

One of the boys on board, suffering from Typhoid Fever, was isolated and treated on the ship. Five other cases occurred; these were all brought ashore and removed to the City Hospital, Netherfield Road. Disinfection of the vessel was carried out by the ship's officers.

This vessel arrived in Liverpool on the 13th of October, having had five cases of Yellow Fever on board during the voyage. On the 24th of September, two trimmers were taken ill and landed at Para on the 26th; on the 28th September a Portuguese passenger, who had embarked at Para during the period of remission, died and was buried at sea. Another of the crew, William Radcliffe, was taken ill on the 29th of September, and on arrival in this Port was convalescent, but was removed to the Port Hospital together with a steerage passenger who was suffering from Malignant Malaria Anchylostomiasis. The vessel was disinfected by the ship's officers whilst at sea and again by the Port Sanitary Staff after arrival in this Port.

The patient, a second class passenger, was removed to Hospital and the vessel disinfected by the Port Sanitary Officers and the Staff.

A deck boy from this vessel was admitted to the Bootle Hospital suffering from Enteric Fever. Disinfection of the vessel and bedding was carried out by the Port Sanitary Officers and the City Staff.

A Goanese steward was taken ill on the 10th October, just after leaving Algiers, with an Inguinal Bubo and severe general symptoms. On arrival in this Port on October 17th he was removed to the Port Hospital. The remainder of those on board were medically examined and found healthy. Bacteriological examination of material obtained from the patient, and of rats caught on board proved negative. Disinfection of the vessel was carried out by the Port Sanitary Officers.

The patient was removed to Hospital and the vessel and bedding disinfected by the Port Sanitary Officers and the City Staff

The patient proceeded with the vessel, the Medical Officer of the Port of Manchester being advised.

The patient was removed to Hospital and the vessel and bedding disinfected by the Port Sanitary Officers and the City Staff.

Date, 1910.	Name of Vessel.	Where from.	Nature of Sickness.	Hospital to which Patient was removed.
Oct. 29	Saphir ...	Stettin ...	Suspected Plague	New Ferry ... (2 cases)
Nov. 1	Castano ...	Para ..	Yellow Fever	... ..
Nov. 3	Cheshire ...	Rangoon, via London	Suspected Plague	Royal Southern
Nov. 4	Templemore	Baltimore ...	Enteric Fever	Bootle ...
Nov. 9	Yenetia ... for Manchester	Karachi ...	Suspected Plague	New Ferry ...
Nov. 10	Caronia ...	New York ...	Typhoid Fever	Netherfield Road
Nov. 14	Pontiac ...	Naples, &c....	Choleraic Diarrhoea	... ..
Nov. 14	Olive ... for Manchester	Buenos Ayres	Enteric Fever	... ..
Nov. 14	Celtic ...	New York ...	Enteric Fever	Netherfield Road

REMARKS.

The second mate was left at Elsinore, on October 22nd, said to be suffering from Venereal Buboës. On arrival in Liverpool, on October 28th, the 1st mate and 2nd engineer were removed to the Port Hospital for observation; on further clinical and bacteriological examination, the cases proved to be of a non-infectious nature.

One of the crew of this vessel, who was suffering from Yellow Fever, was left in Hospital at Para. The vessel was disinfected by the Authorities at that Port.

This vessel, whilst in the Tilbury Docks lay in close proximity to the s.s. "Oceana," on board of which a case of Plague occurred on the 2nd November. The following day, on arrival in Liverpool, a native fireman was removed to Hospital suffering from a severe type of Pneumonia. The case being suspicious a bacteriological examination was made, both locally and by the Local Government Board, but proved negative. Rats caught on board were examined by the Corporation Bacteriologist, but proved healthy.

The patient, a cattleman, was admitted to the Bootle Hospital. Disinfection of the vessel and bedding carried out by the Port Sanitary Officers and the City Staff.

One of the crew, a Chinaman, was landed at the Port Hospital, the vessel proceeding to Manchester, the Medical Officer at the Port being informed. Disinfection was carried out by the Liverpool Port Officers.

The patient, the second officer, was removed to Hospital and the vessel and bedding disinfected by the Port Sanitary Officers and the City Staff.

The patient, a female passenger, was landed at Palermo, disinfection being carried out at that Port and again on arrival in Liverpool.

The patient, one of the crew, died on the homeward passage, and was buried at sea. Disinfection carried out by the Port Sanitary Officers.

The patient, a steerage passenger, was removed to Hospital, and the vessel and bedding disinfected by the Port Sanitary Officers and the City Staff.

Date 1910.	Name of Vessel.	Where from.	Nature of Sickness.	Hospital to which Patient was removed.
Nov. 15	Mauretania ...	New York ...	Measles (2 cases)	Park Hill ...
Nov. 23	Foyle ...	Buenos Ayres	Enteric Fever	Grafton Street ..
Nov. 25	Indefatigable Training Ship	in the River	Enteric Fever	Grafton Street ..
Nov. 30	Oravia ...	West Coast of South America	Puerperal Fever	... ..
Dec. 5	Virginian ...	St. John ...	Enteric Fever	Grafton Street ..
Dec. 5	Baltic ...	New York ...	Diphtheria ...	Mill Lane ...
Dec. 5	Mimosa ...	Bombay ...	Suspected Plague (2 cases)	... ..
Dec. 6	Mauretania ...	New York ...	Whooping Cough	... ..
Dec. 7	Friesland ...	Philadelphia	Diphtheria (4 cases)	Fazakerley ...

REMARKS

Two children passengers, who were suffering from Enteric Fever, were removed to Hospital, and the vessel and bedding disinfected by the Port Sanitary Officers and the City Staff.

The patient, the donkeyman, was removed from the vessel at the Vittoria Wharf, Birkenhead, to the Grafton Street Hospital, and the vessel and bedding disinfected by the Port Sanitary Officers and the City Staff.

One of the boys, who was suffering from Enteric Fever, was brought ashore, and removed to the City Hospital, Grafton Street. Vessel disinfected by the ship's officers.

The patient, a cabin passenger, died on the homeward passage. Vessel disinfected by Port Officers.

The patient, one of the crew, was removed to Hospital, and the vessel and bedding disinfected by the Port Sanitary Officers and the City Staff.

One of the passengers, suffering from Diphtheria, was removed to Hospital, and the vessel and bedding disinfected by the Port Sanitary Officers and the City Staff.

On arrival in this Port, on December 4th, the master of this vessel reported that at Suez, on November 12th, a donkeyman and fireman, suffering from suspected Plague, were left in Hospital, and disinfection of the vessel and patients' effects carried out at Suez. No sickness amongst rats during the voyage. The vessel was medically examined on arrival, and the crew found all well.

The patient, a passenger, proceeded. Vessel disinfected by the Port Officers.

The patients, four children passengers, were removed to Hospital, and the vessel and bedding disinfected by the Port Sanitary Officers and the City Staff.

Date 1910,	Name of Vessel.	Where from.	Nature of Sickness.	Hospital to which Patient was removed.
Dec. 17	Tamele ...	Madeira .	Choleraic Diarrhoea	Fazakerley ...
Dec. 17	Antony ...	Manaos and Para	Yellow Fever	... ..
Dec. 24	Mauretania ...	New York ...	Scarlatina ...	Grafton Street
Dec. 24	Lake Manitoba	Halifax ..	Enteric Fever	Netherfield Road
Dec. 25	Pannonia ...	New York ...	Scarlatina ..	Fazakerley ...

REMARKS.

This vessel arrived in the Mersey, on December 17th, and reported having left Madeira on the 11th December; on the following day a saloon passenger was taken ill with Diarrhœa. On the 13th she had continuous Diarrhœa, vomiting and some collapse. On arrival at Liverpool, she was found to be convalescing, but Diarrhœa of a suspicious nature was still present. The patient was removed to the Fazakerley Hospital, where a microscopical examination revealed suspicious organisms; cultures, however, failed to confirm the presence of the Coma Bacillus. Vessel disinfected.

Three cases of Yellow Fever occurred at Manaus amongst the crew of this vessel, two musicians and a steward being affected; all three were landed at Para, where one of them subsequently died. The Hospital and quarters occupied by these persons were disinfected at Para under the supervision of the Para Prophylactic Commission. On arrival at this Port, 17 days later, the passengers and crew were medically inspected and found well. The Hospital and quarters were again disinfected by the Port Sanitary Officers.

The patient, a passenger, was removed to Hospital, and the vessel and bedding disinfected by the Port Sanitary Officers and the City Staff.

The patient was removed to Hospital, and the vessel and bedding disinfected by the Port Sanitary Officers and the City Staff.

One of the stewards, having Scarlatina, was removed to Hospital, and the vessel and bedding disinfected by the Port Sanitary Officers and the City Staff.

Diseases incident upon Sailors.—Sanitation of Vessels.

The diseases to which sailors are peculiarly liable fall under four headings:—

- (a) Those which are caused by the peculiar stresses of the work.
- (b) Those attending the vices to which sailors in foreign ports are particularly addicted: Alcoholism and Venereal Diseases.
- (c) Tropical diseases, including Malaria, Beri-beri, &c.
- (d) Those associated with the peculiar environment of the sailor, such as damp forecastles, contaminated water supplies, and the close association of the sick with the healthy in the confined quarters on shipboard.

It is against the latter classes of disease that the efforts of the Port Sanitary Authority for improving the sanitation of vessels are directed.

The defects are classified under three headings as arising from:—

- (a) Faulty construction.
- (b) Wear and tear.
- (c) Lack of cleanliness, and nuisance.

A large number of the defects, included under the third heading, that are found on British ships, arise from the crews having been paid off and the forecastles being unoccupied. This is specially applicable to the tramp class of vessel. In the case of ships of foreign nationality, or carrying "native" crews, the crew are at the time inhabiting quarters where filth or nuisance exists.

4,850 vessels were visited by the Inspectors during the year. This is an increase of 840 in comparison with 1909, accountable for by the appointment of an extra Inspector in the course of the past year.

Work of the Port Sanitary Inspectors.

The area of the Port is divided into four districts, those of the North Docks, the North Central Docks, the South Docks, and the outlying districts comprising Birkenhead and Garston. These are each in charge of an Inspector who is fully qualified, both by examination and for the most part by previous sea-going experience. These visit all vessels lying within their district to examine into their sanitary state and also to enquire concerning the health of those on board, and as to the occurrence of sickness during the voyage, particularly stringent enquiries being made in the case of all vessels from ports where Plague, Cholera or Smallpox are prevalent. Enquiries are also made as to the occurrence of sickness or mortality amongst the rats on vessels from plague-infected ports.

The Inspectors report daily to the Assistant Port Medical Officer, and vessels have frequently to be visited in the docks on both sides of the Mersey owing to reports thus received from the Inspectors.

INSPECTION OF SHIPPING.

Year 1910.

TABLE 6.

The following Table indicates the number of visits paid to vessels by the Inspectors during the year:—

Nationality.	Visits.	Re-visits.	Total.
British	3,256	1,000	4,256
Norwegian	176	47	223
Swedish... ..	24	6	30
Spanish... ..	134	58	192
Danish	22	5	27
German... ..	37	9	46
Italian	3	2	5
Belgian	3	3	6
Russian	7	3	10
French	25	8	33
Dutch	6	1	7
Greek	3	—	3
Austrian	5	3	8
American	1	—	1
Brazilian	2	—	2
Chilian	1	—	1
	<u>3,705</u>	<u>1,145</u>	<u>4,850</u>

SUMMARY OF INSANITARY CONDITIONS.

TABLE 7.

Class of Vessels.	Number Inspected.	Number on which nuisances were found.	Per cent.
FOREIGN—			
Steamers	2,258	800	35·42
Sailing	51	20	39·21
Total	2,309	820	35·51
COASTWISE—			
Steamers	1,103	185	16·77
Sailing	293	69	23·54
Total	1,396	254	18·19

Nationality.	Number Inspected.	Number on which Nuisances were found.
British	3,256	915
Foreign	449	159
	3,705	1,074

Nuisances arising through

Defects of Original Construction.	Per cent. of Total Defects.	Structural Defects through wear and tear.	Per cent. of Total Defects.	Dirt, and other conditions prejudicial to health.	Per cent. of Total Defects.
26	0·89	316	10·93	2,557	88·20

TABLE 6.

THE FOLLOWING TABLE SHOWS THE NUMBER AND NATIONALITIES OF THE VESSELS ON WHICH DEFECTS WERE DETECTED DURING THE YEAR 1910.

NATIONALITY.	Number of Ships.	Dirty Forecasts.	Dirty Wash-basins, Store-houses, etc.	Foot Water Chicks.	Foal Bilges.	Foal W.C's.	Accumulation of offensive refuse.	Gear stowed in Crew's Quarters.	Damp Quarters.	Water lodging on top of Tanks.	Animals kept causing nuisance.	Leaky Decks overhead.	Defective Stairs.	Defective Bulbheads.	Defective Ports and Sky lights.	Defective Ventilators.	Defective Flooring Boards.	Defective Lockers and Lockers.	Defective Chain Pipes.	Defective Hicwa' Pipes.	Defective W.C. Fixings.	Defective Soil Pipes.	Inadequate Ventilation.	Inadequate Lighting.	Inadequate Drainage.	Race Iron and Sheath'd.	W.C.'s, deficient in Ventilation and bad situation, bad.	Total number of Defects.	Total Remedied.	
British ...	915	1534	110	12	6	531	23	2	24	7	...	50	20	12	140	3	...	4	18	19	12	...	11	2	1	5	...	2554	2021	
Norwegian ...	49	57	20	3	1	1	8	1	...	6	97	73
Swedish ...	9	9	...	...	...	5	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	14	11
Spanish ...	58	85	6	...	...	35	2	2	3	...	...	5	1	2	1	...	...	...	1	...	2	...	...	...	...	...	...	145	131
Danish ...	8	4	...	...	...	6	...	...	...	...	...	...	...	2	...	...	...	...	...	...	...	...	...	...	...	...	...	12	8
German ...	11	8	2	...	...	9	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	1	...	...	...	20	16
Italian ...	2	4	1	...	...	...	...	...	...	...	...	...	...	...	...	...	1	...	...	...	...	...	...	...	...	...	...	6	2
Belgian ...	1	1	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	1	...
French ...	11	8	2	...	...	9	...	...	...	...	...	...	...	...	2	...	...	...	...	...	1	...	...	...	...	...	...	22	17
Dutch ...	1	2	...	...	...	1	...	...	...	...	...	...	...	...	4	...	...	...	...	...	...	...	...	...	...	...	...	7	7
Chilian ...	1	6	...	...	...	2	...	...	...	1	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	9	...
Austrian ...	3	5	...	...	...	1	...	...	...	...	...	...	...	1	...	...	...	...	...	...	...	...	...	...	...	...	...	7	6
Russian ...	5	7	...	...	...	5	...	...	...	...	...	...	1	...	...	...	...	...	...	...	...	...	...	...	...	...	...	13	10
Total ...	1074	1730	121	12	6	624	25	4	27	8	...	58	23	18	155	3	1	4	19	19	16	...	17	2	2	5	...	2899	2302	

THE UNIVERSITY OF CHICAGO

PHYSICS DEPARTMENT

1957

1958

1959

1960

1961

1962

Canal Boats.

The Port Sanitary Inspectors have been appointed Canal Boat Inspectors, under the Canal Boat Acts of 1877 and 1884. This is rendered necessary by the large number of Canal Boats which are to be found lying in the Liverpool Docks. By rotation one Inspector devotes one day per week for a period of five months at a time, as it has been found that in this way it is easier to follow up any boat that may be defective. These boats are for the most part kept in very good repair.

Contraventions of the Acts, and of the regulations made under them, include failure to register the boat; failure to have the boat clearly marked with the registered number or to produce the certificate of registration on demand; failure to keep the cabins or water-casks in good order or repair; carrying offensive cargoes insufficiently separated from the cabins; overcrowding or improper habitation; and failure to notify infectious disease.

908 boats were inspected during the year, of which number 50 were found to have some condition contravening the regulations.

Special Visits.

In addition to the daily routine inspection of the sanitation of vessels, special visits require to be made to many vessels on reports of sickness; smallpox contacts have also to be kept under daily observation. Disinfection has to be carried out or supervised on all vessels which have had cases of actual or suspected infectious disease. 132 vessels were disinfected during the year, in some cases extensive precautions being required.

The whole time of one Inspector has been occupied in supervising the landing of cattle from coastwise cattle boats, under the provisions of the Diseases of Animals Acts, to which duties they have been specially appointed.

TABLE 9.

RETURN OF THE NUMBERS OF CATTLE, SHEEP AND SWINE EXPORTED FROM IRELAND TO LIVERPOOL DURING THE YEAR 1910, SHOWING THE PORTS IN IRELAND AT WHICH THE ANIMALS WERE SHIPPED.

	Cattle.	Sheep.	Swine.
Ballina	14	4,878	427
Belfast	6,447	11,029	540
Cork	27,955	17,171	9,071
Drogheda	32,498	50,322	5,001
Dublin	108,433	224,391	29,832
Dundalk	28,107	36,701	19,271
Londonderry	4,687	13,186	299
Newry	6,964	7,414	1,004
Sligo	98	9,264	12,278
Warrenpoint	69	—	—
Waterford	18,180	39,532	9,437
Westport	399	15,173	7,350
Wexford	1,317	19,270	3,027
Total	235,168	448,331	97,537

TABLE 10.

SHOWING THE TOTAL NUMBERS OF THE SEVERAL KINDS OF CATTLE, SHEEP AND SWINE EXPORTED FROM IRELAND TO LIVERPOOL, DURING THE YEAR 1910.

CATTLE.	No.	SHEEP.	No.
Fat	110,753	Fat	205,371
Stores (for fattening)	85,708	Stores	1,524
Milch Cows	22,103	Lambs	241,436
Springers	6,451		
Other Cattle	3,207	Total Sheep	448,331
Calves	6,946		
Total Cattle	235,168	SWINE.	
		Fat	90,229
		Stores	7,308
		Total Swine	97,537

The Aliens Act, 1905.

An "immigrant" ship (i.e., a ship bringing more than 20 alien steerage passengers to be landed in the United Kingdom) may not land these passengers at other than immigration ports at which Immigration Officers and Medical Inspectors have been appointed and Immigration Boards have been established.

The immigration Ports are:—Cardiff, Dover, Folkestone, Grangemouth, Grimsby, Harwich, Hull, Leith, Liverpool, London (including Queenborough), Newhaven, Southampton, and the Tyne Ports.

An alien shall be considered to be an "undesirable" according to section 1 (3) of the above Act:—

- (a) If he cannot show that (a) he has in his possession or (b) is in a position to obtain the means of decently supporting himself and his dependents (if any); or
- (b) If he is a lunatic or an idiot, or owing to any disease or infirmity appears likely to become a charge upon the rates or otherwise a detriment to the public; or
- (c) If he has been sentenced in a foreign country, with which there is an extradition treaty, for a crime, not being an offence of a political character, which is, as respects that country, an extradition crime within the meaning of the Extradition Act, 1870; or
- (d) If an expulsion order under this Act has been made in his case; but in the case of an immigrant who proves that he is seeking admission to the country solely to avoid prosecution or punishment on religious or political grounds or for an offence of a political character, or persecution, involving danger of imprisonment or danger to life and limb on account of religious belief, leave to land shall not be refused on the ground merely of want of means, or the probability of his becoming a charge on the rates.

Supervision of Food Importations.

The Unsound Food and Foreign Meat Regulations came into force in October, 1908, and January, 1909, respectively; these Regulations increased the duties and responsibilities of the Port Sanitary Authority, and the returns of the past two years have shown this supervision to be very necessary.

The inspection of food is carried out not only in the Liverpool docks but also in Birkenhead and Garston. In the Birkenhead docks large quantities of grain are landed close to the flour mills.

During the year the amount of food stuffs landed at this Port has increased considerably, and from time to time enormous shipments of meat and pork have to be dealt with, some of them being in a deteriorated and unsound condition.

The year 1910 has been the busiest as regards inspection work which we have had, and the amount of meat condemned during this period has been five times the amount condemned during 1909.

To shortly review the methods adopted at this Port, the inspection is carried out by the Food Inspectors after the goods have been landed on the docks. Under the Foreign Meat Regulations the valuable co-operation of the Examining Officers of H.M. Customs has been obtained. These officers detain certain classes of meat for examination, and, in addition, from their close association with imported goods for revenue and other purposes, they keep the Authority informed as to the character of food landed in the docks.

The meat consignments, &c., detained by the Customs Officers are first of all attended to by the Inspectors, but general food inspection is also carried out simultaneously in the sheds.

The Inspector carries out his work by a process of sampling, or an inspection of portions of the consignments; and for this purpose he can require packages to be opened and the contents exposed for his inspection. If on this preliminary sampling certain unsoundness is found,

examination of further portions may be necessary, or the whole consignment sorted in the sheds, or where circumstances require, as in the case of frozen goods, such as boxed beef, carcasses of sheep, pigs, &c., permission is given to have the goods removed to the numerous cold stores situated in the immediate vicinity, where the consignments are detained and sorted under the supervision of the Authority.

Great advantage arises from the co-operation of the Food Inspectors of the City and Port acting under the City Council in dealing with such foods as fruit, fish, &c., which, for business and other reasons, are frequently allowed to pass, after preliminary examination, to the market-stores and warehouses to be sorted under the supervision of the Fruit and Fish Inspectors. Frequent cross references pass between the Food Inspectors of the City and the Port, thereby saving much time, and valuable information is obtained on both sides.

In order to cope with the increased work on the staff, owing to the importation of Chinese and other pigs, and the large importation of Australian beef which required attention, the appointment of two additional Inspectors was agreed to by the Authority and sanctioned by the Local Government Board.

The importation of frozen and chilled meats still continues to be an increasing one; the deliveries in the United Kingdom for the year 1910 reached a total of 610,970 tons, an increase of 78,714 tons, or 15 per cent. over 1909.

The total supply of beef available from all sources for consumption in the United Kingdom during 1910 was 1,209,208 tons, and of mutton and lamb 604,212 tons, representing 59·7 lbs. of the former and 29·8 lbs. of the latter per head of the population.

These quantities were composed as follows:—

Home grown meat ...61·8 per cent	} Approximately—
Frozen meats ...24·9 „	
Chilled beef ... 8·8 „	
Foreign live cattle and sheep ... 4·5 ,	
	62 per cent. Home grown.
	38 „ Foreign „

TABLE 11.
SHOWING THE IMPORTS OF MEATS (EXCEPT
POULTRY AND GAME) INTO THE PORT OF LIVERPOOL
DURING THE YEARS, 1909 AND 1910.

Description.	Years.	
	1909.	1910.
	£	£
Bacon	5,100,371	4,102,268
Beef, fresh and refrigerated ...	3,909,429	4,509,781
Beef, salted... ..	87,970	91,296
Hams	2,040,633	1,632,223
Mutton, fresh and refrigerated ...	1,806,352	2,617,420
Pork, fresh and refrigerated ...	13,731	102,846
Pork, salted... ..	60,700	61,603
Rabbits	260,899	298,753
Unenumerated fresh, refrigerated and salted	386,081	456,440
Preserved, otherwise than by salting	442,594	514,447
Totals... ..	£14,108,760	£14,387,077

The quality and condition of the frozen and chilled meat and mutton imported at Liverpool are generally very good, and it is seldom any condemnations take place, unless in cases where the refrigerating machinery has broken down and decomposition has set in, or moulds have grown upon the meat so as to render it unsound; in addition, brine sometimes escapes from the refrigerating pipes and damages carcasses to a considerable extent.

Several large steamers arrived in the Port with cargoes of meat and mutton in a more or less damaged condition; these were examined by

the Inspectors, and all decomposed and unsound portions were removed and condemned. The bulk of the unsound meat was allowed to go for industrial purposes, to the satisfaction of the Medical Officer of Health, and the amount thus disposed of was very large.

During the past year large quantities of Australian beef, from Queensland and New South Wales, have been imported into Liverpool. These frozen quarters of beef have been found to be affected with nodules, varying in size from a pea to a nut, or even as large as a small orange. These lumps are situated chiefly in the brisket and flank, but in the hind quarters they are more or less confined to the neighbourhood of the stifle (knee) joint; they are more numerous, however, in the brisket than elsewhere.

Verminous
nodules
in Beef.

These nodules or lumps contain a fine thread-like parasitic worm (*Onchocerca Gibsoni*), which is coiled up in the centre of each nodule. Australian cattle become infected with this parasite in some way not yet definitely known, probably through the agency of biting flies. The cysts or nodules were first described and exhibited in 1880 before the Royal Society of New South Wales by Dr. William Morris.

In Liverpool, as elsewhere, the method adopted in dealing with this affection has been, after detention of the consignments of meat in cold stores, either to remove the affected flanks or briskets from the frozen quarters, and deal with them for industrial purposes, or, at the option of the importer, to incise the flanks and, where nodules were found, to have them removed. A 10 per cent. examination is made of a consignment, noting marks, &c., and if it is found that the amount of affected parts is under 5 per cent. the consignment is passed. Very few consignments have reached this standard, the majority varying from 35 per cent. to 70 per cent.

This has been the method chiefly adopted in Liverpool. The importers seem to prefer the excision of the nodules in preference to cutting off the briskets and flanks; the procedure, however, entails a greater amount of examination and supervision on the part of the Meat Inspectors of the Port Sanitary Authority.

A valuable report on this subject has been made to the Local Government Board by Dr. McFadden and Dr. Leiper.* A full description is given of the nodules and the worms, in addition to some suggestions as to the method of spreading.

* Reports to the Local Government Board by Dr. A. W. J. McFadden and Dr. Robert T. Leiper, F.L.S., on a parasitic condition (*onchocerciasis*) met with in Australian Beef (Food Reports, No. 11).

Regarding the parasite and its life history the author states:—

“ When an unruptured nodule is carefully incised with a sharp knife to the depth of about a quarter of an inch and then prised open with the fingers a number of small loops of what appear to be pieces of cat-gut spring up into the base of the incision. These are portions of the body of the female worm, and it is noticeable that to the naked eye they show a faint but regular transverse striation. Towards the centre of the nodule the male worm may be found by careful searching. This is recognised by its very slender form, its apparent lack of striation, and its loose attachment to the stroma of the nodule.

“ So far as is known no parasitic worm is able to develop to sexual maturity within the body of the host in which it received birth without first passing a more or less brief period of its life outside.

“ Certain of these worms can pass the necessary period outside the body in a free state, either still within the egg shell or as active young in soil or water; others require to pass into the body of an invertebrate organism, therein to undergo a certain amount of development in order to attain to the degree of organisation that will enable them to continue their existence and become sexually mature on regaining warm-blooded host.

“ To the latter category belongs the family Filariidæ, the members of which, so far as they have been studied, have shown the common characteristic of requiring an arthropod for their larval development, and for their conveyance from the infected animal to another. Thus, although nothing is at present known of the extra-corporeal life and mode of exit or entry of the host of any single species of *Onchocerca*, yet, because of the structural relationship of *Onchocerca* to the other members of the family Filariidæ, the following statements regarding the species producing *Onchocerciasis* in Australian cattle can be made with considerable confidence:—

“ 1. Although the female within the body of its host produces hundreds of thousands of living young, not one of these can undergo direct development. An intense infection of the host results from an intense and repeated infection from outside.

“ 2. These young must be taken up and pass a certain period of time, perhaps about three weeks, in the body of some arthropod—crustacean

or insect. Thus, development of the parasite in man, as a result of the consumption of food containing these young in a living state, is impossible.

"3. The structure both of adult and young indicates that the parasite belongs to that division of the family Filariidæ that requires an insect as intermediary, not to the division in which an aquatic arthropod is the essential carrier. This view is further supported by the fact that careful investigation of parasites with this structure has failed to reveal any evidence that the adult worms discharge their young into water from a broken surface. Moreover, even in minute detail, the structure of the young closely corresponds to that of those known to develop in biting insects, and leave and enter the body by their means alone.

"The implication of some biting insect in the transmission of Onchocerciasis is thus indicated; most probably the intermediate host will be found to be a Stomoxys, Hippobosca, Tabanid, or one of the Ixodidae.

"In view of the intense infections that occur in certain districts and of the evidence pointing to the fact that every worm found in the body has entered as a microscopic larva from an intermediary, it should not be difficult, by systematic dissection of the various biting flies in the infected area, to determine which is the actual carrier of round-worm embryos, and then to demonstrate experimentally the connection of these with the production of this disease. Once this connection were established, it should not prove impossible, from a study of the life-history and habits of the special carrier, to devise a method for the destruction of the intermediary and thereby bring about a diminution or elimination of the disease."

The summary and conclusions of Dr. Leiper are as follows:—

1. The parasitic nodules in Australian beef are, without exception, due to the presence of long thread-like worms of the genus *Onchocera*.
2. The diseased condition, Onchocerciasis, is not peculiar to Australian cattle, but occurs also in other animals and in various parts of the world, including the United States of America.
3. The parasites belong to a group of worms that require to be taken up by a biting insect and to undergo a certain degree of development therein before they can be transmitted to another warm-blooded animal.

4. The worms and their young do not appear to be capable of surviving for more than a few hours the death of the cattle. No evidence of vitality of the worm or its embryo has been met with in the case of Australian beef reaching this country.

5. From (3) and (4) above, it follows that the direct development of the parasite in man as a result of eating the affected meat is impossible.

6. The nodules are the product of changes taking place in the tissues as a result of some acrid toxin excreted by the worms. In my opinion their presence in meat intended for human consumption is undesirable for this reason.

Before the above Report was available, specimens of the diseased beef had been forwarded to Dr. J. W. Stephens, Walter Meyer Lecturer, of the Liverpool School of Tropical Medicine, asking for some information regarding the condition of the meat. Dr. Stephens submitted an "Abstract of a report on worm nests (Filariasis) in cattle," by Drs. Cleland and Johnston, from the Report of the Government Bureau of Micro-Biology, New South Wales, 1909. Sydney, p.p. 91-99.

The following notes were extracted from this abstract and are of some interest.

Geographical Distribution—

Queensland Cattle:—Nodules common.

In 1892, 50 per cent. of animals slaughtered in Sydney were affected. These would include Queensland and New South Wales cattle.

They were also found in cattle bred in the neighbourhood of Sydney, in cattle from the Northern rivers and Western Districts of New South Wales, the Northern territory of South Australia, in Western Australia, but not in Tasmania.

Popular Names—

"Stone-bruises" (origin doubtful).

"White Kernels" or "Kernels" (they lack the dark centre of lymphatic glands in cattle).

"Worm nests."

"Worm knots."

"Cancers."

Site of Nodules—

1. *Brisket*.—By far the most common seat is the subcutaneous tissue over the brisket and between the layers of its muscles.
2. *Rump*.—(Gibson) about *Hock-joint* on *Stifle-joint* on *Silverside*.
3. *Throat, Neck, Intestines*, (Barnard and Park describe "abscesses," in these situations, but many of these may have been due to tuberculosis).
4. *Connective tissue* in any part of the body, even deep seated (Dodd).

Age of Infected Animals—

Rare in animals under four years (Gibson).

Not found in animals under two years (Barnard and Park).

Three nodules found in a calf 6 months old (Cleland and Johnston).

Naked Eye Appearance—

In living cattle the nodules may be seen, if subcutaneous, as rounded swellings over the brisket and especially over the limbs.

In *slaughtered* cattle, they appear generally over the brisket as tense rounded swellings, and those not seen may be felt by the hand as marble-like structures in the underlying tissues.

They can easily be shelled out, and vary in size from that of a marble to two inches or more in diameter. They are spherical, or flat ovals or may be irregular with bosses on them.

The Nodules consist of two parts:—

(1) An outer very dense fibrous capsule from which can be shelled out.

(2) The worm mass proper. This consists of an intricate tangle of worm or worms occupying tunnels throughout a supporting somewhat loose fibrous stroma. The whole mass is also surrounded by a delicate fibrous capsule.

Every facility has been afforded by meat importers to enable the food inspectors to cope with the enormous number of quarters of Australian beef thus affected.

IMPORTATION OF FROZEN PORK.

The importation and examination of frozen pork has formed a considerable item during the past year. The pigs were imported on

large refrigerating steamers chiefly from China, but consignments also arrived from New Zealand, Australia, France and elsewhere.

Chinese Pork. Five vessels arrived during the year from China with a general cargo including frozen pigs. These were:—

s.s. Lizanka No. 1	11,591
s.s. Count Muravieff	6,214
s.s. Telamon	2,239
s.s. Poona	6,952
s.s. Lizanka No. 2	6,369

The importations of Chinese pigs received considerable attention in the public press and questions were frequently asked in Parliament. In order to completely satisfy the public as to the character of these carcasses, the examination was carried out in every detail and every carcase was submitted to a close inspection.

The Medical Officer of the British Consulate at Hankow, where the animals were slaughtered and who happened to be in England, interviewed the Medical Officer of Health and gave him full information as to the habits, feeding, slaughtering and examination of the pigs. The majority of these animals are bred near the Tung-Ting Lake in the province of Hupe, and also in Hunan.

A large number of carcasses in the first consignments were imported for business purposes, without the backbone, and as these did not comply in this respect with the requirements of the Foreign Meat Regulations, it was necessary to have them exported. The importers stated that they wished to make bacon of these pigs, and accordingly as this product is admissible under the Regulations they were exported to the Isle of Man, where they were made into bacon and re-imported into this country. In order to satisfy the Port Sanitary Authority and the public that the bacon was sound and from animals free from disease, it was agreed to send an inspector of the Port Sanitary Authority to the Isle of Man, to examine every carcase before curing. This course was readily agreed to by the firm interested. Our inspectors have examined in the Isle of Man 20,503 pigs during the year.

The frozen carcasses were in all cases thawed out, and the inspection included an examination of all the lymphatic glands, cavities and flesh for tuberculosis and other diseased conditions. As the existence of

trichinosis amongst these pigs had not been definitely settled, every pig in the first consignments, numbering several hundreds, was examined microscopically for the presence of the parasite. In no case was anything found indicative or suspicious of the disease. Later a 10-20 per cent. examination of all pigs examined has been made, with negative results, although 23,246 pigs have passed through the inspectors' hands. The Consulate Medical Officer at Hankow collected a large amount of evidence to prove that trichinosis is a disease rarely met with in China. This evidence was submitted to the Local Government Board and to the various health authorities concerned. The condemnations of carcasses as unsound numbered 695; of these 343 were affected with decomposition originating in transit, whilst the remainder were affected with disease, chiefly tuberculosis. The examination fully satisfied the Authority that the pigs, after a most searching inspection, are fully as sound as any bred in this country. There can be no doubt but that the condition of these imported pigs as regards disease will be further improved owing to the stricter inspection which has been instituted in China. In fact, a considerable improvement in this direction has already manifested itself.

The inspection of frozen offal (hearts, kidneys, livers etc.) has been ^{Frozen} much facilitated by the improvements in packing carried out by the importers.

It is now possible to examine each organ in a box of frozen offal instead of having to thaw out the organs as formerly. It may be said that practically all the offal is now imported, so as to be readily inspected. A considerable amount of disease was found in some consignments, especially those from South America, and pressure was brought to bear through the Local Government Board and others to improve this condition, with satisfactory results.

Boned "boxed" beef in the form of separate recognisable cuts still ^{Frozen} continues to be imported and is now brought in convenient form and ^{Meats.} frozen in its natural state, the lymphatic glands *in situ*, so as to be readily examined.

The importations of unsound pickled beef from Denmark, via ^{Pickled} Hamburg and other ports, and in regard to which prompt action was taken last year, have now been discontinued. There were only two

shipments in the beginning of the year following on those in the latter end of 1909.

21st January ...	s.s. "Greenland" at Hamburg.	25 barrels beef (salted). Weight 9,575 lbs.	Tubercular, Dropsical and Stripped.
26th January ...	s.s. "Rhineland" at Hamburg.	25 barrels beef Weight 9,575 lbs.	Tubercular, Dropsical and Pleura Stripped.

The examination of pickled meats, as well as pigs' tongues, heads, &c., has largely occupied the attention of the Inspectors. As regards pork products which do not possess an "official certificate" attached to the package, it has now been settled that if these severed parts of the carcass have the lymphatic glands *in situ*, so that the Inspectors at the port of importation can examine the products for disease, the goods may be treated as Foreign Meat Unclassed, and admitted, provided they are otherwise sound. This was provided for in the Foreign Meat Amending Regulations, 1909 (see Appendix).

In connection with the shipment of immature calves from the Continent it is interesting to observe that the Netherlands Minister of Agriculture has issued a decree prohibiting the export from Holland to the United Kingdom of carcasses of calves which when weighed without head, skin and intestines are less than $21\frac{1}{2}$ kilos ($47\frac{1}{2}$ lbs.).

Inedible Fats. The Inspectors of the Port Sanitary Authority during the past two years have had the supervision of the importations of inedible fats from the United States of America. Hog grease, prepared in the United States from diseased and unsound pigs, is allowed to be exported by the United States Government if the word "inedible" is put on each container (see United States Regulations, Amendment 1 to Board of Animal Industry Order, 150).

During this period large quantities of this inedible grease have been imported.

The Food Inspectors have great difficulty in following these consignments after importation to see that they were suitably disposed of. It

was noted, however, that over 1,000 packages were exported to the Continent on various dates; it is also known that large consignments were returned to this country. At the instance of the Port Sanitary Authority, a case occupied the attention of the Stipendiary on March 9th, which fully substantiated this point. An application was made to the Magistrate for a destruction order. The facts were that 75 tierces of inedible hog grease were imported from America. The importers whitewashed the ends of the tierces, deleting the word "inedible," and re-marked them. The goods were sold to a firm in Germany as South American lard, but owing to the action of the German officials the goods were ordered to be exported within 24 hours. Owing to this action, and that of the officers of the Port Sanitary Authority, the goods, on return to Liverpool, were forced back to the original owners. Before the goods passed into the hands of the former owners, samples had been submitted on the Liverpool market as South American lard for export, and lard rate was paid to the Dock Board. Owing to enquiries having been started, the owners took up the position that the grease had never been intended for human food. In Court the owners agreed to give a guarantee that the fat should be disposed of to a recognised soap manufacturer, to the satisfaction of the Medical Officer of Health.

It must be admitted that this duty puts an undue stress on the resources of the Port Sanitary Authority, which are quite inadequate to follow the consignments to their ultimate destination, as stated in guarantees of the importers.

The denaturing of this produce at the original packing house would be the simplest solution of the difficulty.

There were over 307 tons of cereals, including rice, wheat, &c., condemned as unfit for human food during the year; these were allowed to go for cattle and poultry food after suitable guarantees had been given by the owners. In addition, 436 cases of cocoa, ex s.s. "Ayrshire," weighing 21 tons, were allowed to go for feeding purposes.

The disposal of all these goods was subsequently verified by the Inspectors personally or by communication with the Medical Officer of Health of the districts of destination, acquainting him with the nature of the goods and the use to which they were to be put.

Milk con-
signments.

During the year several consignments of milk were sampled by the Authority's officers and submitted to the Analyst for examination. A sample of frozen milk from Australia, ex s.s. "Runic" from Sydney, was tested and found to contain 28 per cent. of borates or about 24 grains per pint of boracic acid.

A sample of "Vacca" milk was examined, ex s.s. "Rissa," from Antwerp, and found to contain 14 per cent. of added water; the matter was referred to H.M. Customs and to the Food and Drug Inspectors of the City of Liverpool; further analyses were made and the adulteration confirmed. Proceedings were taken in conjunction with the Commissioners of H.M. Customs and a fine of £20 and costs imposed on the "Vacca" Company, Antwerp, who allowed their name to be substituted for that of the importers. In the Customs prosecution the Commissioners would not allow the defendants to substitute the name of the "Vacca" Company, as they were not the importers, and a fine of £5 and costs was imposed for adulteration.

Another sample of milk was taken later in the year, ex s.s. "Zealand," from Hamburg. This was found to be "free from preservatives and contained 3.45 per cent. of fat and 8.24 per cent. of other solids, and had probably been slightly watered; on the basis of the English standard the amount of added water would be 3 per cent., the milk had been homogenised, i.e., so treated that the cream does not rise."

A subsequent sample of a similar milk was reported to be "genuine" milk of good quality.

Metallic con-
tamination.

Several samples of canned peas were analysed for the presence of Copper. In the samples taken in the early part of the year .6 to .75 grain of Copper (i.e., 2.3-3 grains of Copper Sulphate) per pound of peas was found; in samples analysed later the amount found was .2-.4 grain of Copper to the pound. Representations were made to the importers in regard to the earlier consignments, and their representative interviewed the Medical Officer on the subject and discussed the practice as regards this matter at this and other ports; he promised to do all possible to get the amount reduced.

During the year 1910 there were 1,438 certificates of release granted to Customs Officers and importers of meat consignments detained on the quays. Notices to export foods of an undesirable nature or where they did not comply with the Foreign Meat Regulations were issued in 29 cases.

Certificates of destruction or where foods have been allowed to go for industrial purposes have been granted in 440 instances at the request of owners or officers of Customs.

The amount of meats condemned during the year has been far in advance of 1909; this may be attributed to the large number of damaged cargoes which were brought into this port and also to the large importations (33,365) of Chinese pigs.

	1909.	1910.
Beef	60 tons	381 tons.
Mutton	27 „	15 „
Pork	1 ton	54 „
	<hr/>	<hr/>
	90 tons.	450 tons.

OFFAL.

	1909.	1910.
Beef	10,667 pieces.	13,388 pieces
Mutton,	10,758 „	28,319 „
Pork	1,252 „	13,845 „
Veal	10 „	44 „

Numerous samples of brines were analysed during the year for the presence of formaldehyde and other preservatives.

The analysts' reports stated that a considerable number of consignments of pig tongues were found to give a slight reaction for formaldehyde; a point was, however, raised by the importers that no formalin had ever been used in the packing houses and that a possible explanation of the reaction was that where sugar was employed in the pickling along with other substances, certain changes were brought about which on chemical analysis gave the formalin reaction. Full enquiries were made in Liverpool and the United States to substantiate these statements, and the facts were referred to the Local Government Board. The matter is now, we understand, under investigation from a chemical standpoint.

The following tables represent the amounts of condemned meats and offal and other food imports which have been destroyed or otherwise dealt with to the satisfaction of the Medical Officer of Health.

The figures indicate that the amount of unsound food and meats dealt with has been very much larger than that previously recorded.

TABLE SHOWING QUANTITIES OF GENERAL FOOD STUFFS
CONDEMNED DURING THE YEAR 1910.

TABLE 12.

Description.	No. of Tins.	Pounds Weight.	Description.	Packages	Weight.	
Canned Goods—			Fruit (Fresh)—			
Apricots ...	5,269	10,672	Pears ...	229	Tons. 11	Cwts. 0
Apricot Pulp ...	399	2,793	Pomegranates ..	1		1
Peaches ...	2,198	5,495	Plums ...	—		2
Pears ...	4,499	11,247	Fruit (Dried)—			
Pine Apples ...	187	280	Raisins ...	59		14
Cherries ...	11	22	Muscateles ...	3		$\frac{3}{4}$
Apples ...	36	216	Figs ...	24		6
Tomatoes ...	12,871	40,524	Prunes... ..	2		$\frac{1}{2}$
Tongues ...	166	166	Sultanas ...	73		18
Brawn ...	1	2	Almonds ...	—		4
Beef ...	196	1,176	Vegetables—			
Mutton ...	827	5,022	Turnips ...	178	8	18
Lobsters ...	97	97	Potatoes ...	34	1	14
Salmon ...	25,100	25,100	Onions... ..	—	93	16
Fig Pulp ...	1	10	Cereals—			
Milk ...	48	48		—	307	0
Infant's Food...	2,660	2,428	General—			
Fruit—(Fresh)—			Fruit—(Fresh)—			
	Packages	Weight.				
Pine Apples ...	—	Tons. 8				2
Melons... ..	657	32	Fish ...	—	1	10
Bananas ...	3,927	122	Rabbits ...	9,000	8	7
Tomatoes ...	38	8	Sweets ...	—		30
Oranges ...	—	167	Cheese ...	—		1 $\frac{1}{4}$
Apples ...	226	11	Bacon ...	—		8
Lemons ...	225	10	Cocoa ...	436	21	16
Grapes... ..	94	2	Sausage ...	2		2 $\frac{1}{2}$

TABLE SHOWING THE QUANTITY AND DESCRIPTION OF OFFAL CONDEMNED DURING THE YEAR 1910.

TABLE 13.

Name of Organ.	Beef.		Mutton.		Pork.		Veal.	
	Number.	Weight, Pounds.	Number.	Weight, Pounds.	Number.	Weight, Pounds.	Number.	Weight, Pounds.
Livers...	9,031	126,434	309	463	6	18	16	8
Kidneys ...	2,815	2,815	22,810	2,851	46	8	—	—
Plucks...	—	—	2,553	10,212	84	420	22	88
Tripe ...	53	665	—	—	—	—	—	—
Lungs ...	—	—	485	485	—	—	6	12
Hearts ...	224	1,120	1,682	1,682	—	—	—	—
Tongues ...	93	558	480	241	523	653	—	—
Tails ...	843	1,686	—	—	—	—	—	—
Heads ...	—	—	—	—	*2,445	24,892	—	—
Cheeks ...	279	558	—	—	1	4	—	—
Bungs ...	—	—	—	—	†10,170	4,440	—	—
Feet ...	—	—	—	—	600	600	—	—
Totals ...	13,338	133,836	28,319	15,934	13,845	31,035	44	108

*The majority of this number consisted of pickled heads of Continental and other origin which were decomposed.

†These goods were contained in 137 cases, weighing 4,440 lbs.

The organs dealt with above were rejected for various reasons, notably, decomposition and diseased conditions, such as Cysts, Tuberculosis, Inflammation, &c.

TABLE SHOWING THE QUANTITY AND DESCRIPTION OF MEATS CONDEMNED *
DURING THE YEAR 1910.

TABLE 14.

DESCRIPTION.	CAUSE OF DESTRUCTION.						
	Tubercular.		Brine Stained, Mouldy and Decomposed.		Other causes. (Emaciation, Dropsy and Pleurisy).		
	Tons cwts.	qrs. lbs.	Tons cwts.	qrs. lbs.	Tons cwts.	qrs. lbs.	
Beef	381	11 0 5	8 12 0	6 367	13 2 22	5 5 1	5
Mutton.....	15	3 1 26	—	15	3 1 13	0	0 0 13
Pork	54	3 3 27	14 6 2	16 33	9 3 17	6	7 1 22
Total.....	450	18 2 22	22 18 2	22 416	6 3 24	11	12 3 13

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

Included in the above weights were 4,245 quarters Beef, 659 carcasses Mutton, and 697 carcasses Pork.

TABLE 15.

Shewing comparative Value of the more important Food Stuffs imported at the principal Ports during the year 1909.

	London. 1	Liverpool. 2	Hull. 3	Harwich. 4	South- ampton. 5	Bristol. 6	Leith. 7	Manchester 8	Glasgow. 9	Newcastle. 10
	£	£	£	£	£	£	£	£	£	£
Animals	2,262,099	2,473,466	—	—	41,265	—	—	473,299	328,899	—
Butter	5,802,543	171,965	3,051,364	1,592,306	2,357,890	97,841	2,472,057	2,872	9,434	2,260,184
Cheese	3,432,751	1,257,142	139,032	105,613	114,104	914,175	208,149	159,499	238,384	48,833
Cocoa	1,249,694	338,647	—	209,796	543,274	199,031	—	—	—	—
Coffee	1,231,153	10,747	—	—	675,900	—	—	—	—	—
Grain	19,201,724	16,221,077	11,144,227	86,998	738,719	5,190,961	3,108,803	3,641,330	4,747,062	1,506,310
Eggs	2,115,182	214,618	1,274,147	1,126,721	245,346	14,568	1,048,596	33,562	1,287	363,645
Fish	1,082,290	874,829	682,191	97,709	38,222	—	60,789	—	—	134,557
Fruit	5,341,246	4,037,626	660,547	54,055	566,759	659,091	58,523	879,148	659,964	178,173
Lard	1,208,754	1,806,374	532,289	—	70,376	268,001	4,981	977,257	183,123	2,542
Margarine	227,078	327,429	672,703	643,418	—	—	101,641	132,833	25,091	46,357
MEAT:—										
Bacon	1,185,592	5,100,371	815,386	4,401,560	522,549	242,574	—	199,149	492,540	288,945
Beef, Fresh	3,331,362	3,909,429	197,389	106,005	2,243,304	—	—	—	191,938	164,174
" Salted	—	87,970	—	—	—	—	—	—	—	—
Hams	340,604	2,040,633	71,037	—	27,900	90,406	—	134,170	404,631	—
Mutton, Fresh	5,270,214	1,806,352	77,727	325,774	70,345	38,927	—	—	—	76,481
Pork, Fresh	809,639	13,731	—	196,686	17,150	—	—	—	—	21,742
" Salted	—	60,700	—	—	—	—	86,734	—	—	—
Rabbits	428,686	260,899	—	16,483	—	—	—	—	—	—
Unenumerated	529,434	386,081	101,504	238,195	—	99,089	11,974	—	—	—
Preserved	1,304,932	442,594	52,453	—	133,222	—	—	107,345	107,114	—
Milk, Condensed	802,053	136,181	104,900	106,274	—	64,905	45,926	110,175	—	137,982
Poultry and Game	553,810	85,101	50,609	95,913	63,834	—	—	—	—	—
Sugar	7,499,732	4,015,024	993,151	104,190	202,530	1,157,993	1,490,889	995,986	85,748	200,082
Vegetables	928,410	707,363	379,904	43,613	664,328	32,553	37,236	125,333	80,241	71,855

EMIGRATION.

There was a further large increase in the number of emigrants leaving the Port of Liverpool during the year 1910, the number being 336,088, an increase of 82,688 over the previous year, when the number of emigrants leaving the Port was 253,400. The figures for the last twelve years are given, and it will be seen that the numbers for 1910 have only once been exceeded, viz., in 1907, which was a record year so far as the shipment of emigrants at this Port was concerned.

A special feature to be noticed is that the great majority of British emigrants, i.e., those from the United Kingdom and Ireland, go to Canada, whilst the bulk of the foreign emigrants go to the United States.

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 1899-1910—

TABLE 16.

In 1899, 118,568 Emigrants, and 714 Clearances of Ships.

„ 1900, 149,884	„	660	„
„ 1901, 167,452	„	761	„
„ 1902, 214,113	„	791	„
„ 1903, 265,918	„	902	„
„ 1904, 274,584	„	924	„
„ 1905, 277,536	„	983	„
„ 1906, 352,818	„	1,090	„
„ 1907, 385,797	„	1,102	„
„ 1908, 212,155	„	1,113	„
„ 1909, 253,400	„	1,117	„
„ 1910, 336,088	„	1,149	„

The following Tables, Nos. 17 and 18, relating to Emigration, have been kindly supplied by the Board of Trade.

TABLE 17.

Statement showing the Number of Passengers of each Nationality that left the Port of Liverpool for places out of Europe in the year 1910:—

DESTINATION.	NATIONALITY OF PASSENGERS.						
	English.	Welsh.	Scotch.	Irish.	British Colonial.	Foreign.	Total.
British North America.	93,969	1,969	5,418	2,178	6,041	33,095	142,670
Australia and New Zealand	5,728	41	1,412	401	106	39	7,727
British South Africa ...	499	4	51	28	20	11	618
India (including Ceylon)	2,755	74	683	162	259	192	4,125
Other British Colonies and Possessions	2,678	48	470	174	199	222	3,791
Total British Empire...	105,629	2,136	8,034	2,943	6,625	33,559	158,926
United States.....	48,505	1,531	2,389	3,990	677	113,057	170,149
Other Foreign Countries	4,771	243	642	205	27	1,125	7,013
Total Foreign Countries	53,276	1,774	3,031	4,195	704	114,182	177,162
Grand Total.....	158,905	3,910	11,065	7,138	7,329	147,741	336,088

TABLE 18.

Number of Passengers of each Nationality, as given in Table No. 11, that sailed from the Port of Liverpool, in each month of the year 1910.

MONTH.	NATIONALITY OF PASSENGERS.						
	English.	Welsh.	Scotch.	Irish.	British Colonial.	Foreign.	Total.
January	5,257	148	608	224	159	6,473	12,869
February	6,405	172	560	297	197	7,621	15,252
March.....	16,309	482	1,126	564	523	14,708	33,712
April	22,749	687	1,392	1,105	464	19,272	45,669
May	19,631	453	1,102	775	401	15,134	37,496
June	15,552	317	968	511	337	11,978	29,663
July	16,494	331	983	653	702	12,462	31,625
August.....	13,858	262	1,017	742	1,376	17,366	34,621
September	15,299	335	1,104	821	2,090	16,924	36,573
October	14,056	393	1,034	732	653	13,020	29,888
November	8,010	175	603	462	228	7,465	16,943
December	5,285	155	568	252	199	5,318	11,777
Total	158 905	3,910	11,065	7,138	7,329	147,741	336,088

Emigrant Inspections.

All emigrants travelling second class or steerage on board vessels outward bound are subject to inspection by the Medical Officers of the Board of Trade, Dr. Burland and Dr. Macintyre. 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 all persons who may be rejected on account of actual or suspected infectious disease.

There were 260 such inspections, and 68 persons were rejected on account of infectious disease, most of whom were removed to the various City Hospitals.

TABLE 19.
PARTICULARS OF REJECTIONS OF EMIGRANTS.
(Board of Trade Inspections.)

Date, 1910	Name of Vessel.	Nature of Sickness.	Where taken to.	Description of Patient.
Jan. 1	Ayrshire ...	Measles ...	City Hospital, Fazakerley	Child
.. 5	Haverford ...	Itch ...	Boarding House, Great George Square	Adult Child
.. 8	Baltic ...	Dementia... ..	Boarding house ... 130, Duke Street	Adult
.. 19	Merion ...	Itch ...	Boarding House ... Great George Square	Children (2) Adult
.. 22	Laurentic ...	Tuberculosis ...	Returned home ...	Adult
.. 27	Canada ...	Itch ...	Boarding House ... Great George Square	Adult
.. 28	Empress of Britain	Syphilis ...	Returned ashore ...	Adult
Feb. 2	Friesland ...	Favus ...	Boarding House ... Great George Square	Adult
.. 4	Tunisian ...	Observation ...	Returned home ...	Child
.. 11	Empress of Ireland	Eczema ...	Boarding House ... Paradise Street	Child
.. 12	Umbria ...	Observation ...	Boarding House ... Hardy Street	Infant

TABLE 19.— *Continued.*

Date, 1910.	Name of Vessel.	Nature of Sickness.	Where taken to.	Description of Patient.
March 9	Friesland ...	Measles	City Hospital, Fazakerley.	Child
„ 19	Medic ...	Measles	Returned home	Child
„ 23	Haverford ...	Measles	City Hospital, Fazakerley.	Infant Child
April 7	Afric	Chicken-pox	Returned home	Child
„ 9	Lusitania ...	Tuberculosis... ..	Returned home	Child
„ 16	Cedric ...	Scabies	Boarding House Duke Street	Child
„ 21	Dominion ...	Chicken-pox	Returned home	Child
„ 30	Mauretania ...	Suppurating wound in forehead	Boarding House Great George Square	Adult
„ 30	Baltic	Scabies	Boarding House Duke Street	Children (2)
May 7	Canada ...	Itch	Boarding House Duke Street	Child
„ 14	Megantic ...	Itch	Returned ashore	Child
„ 14	„ ...	Barber's Itch	Returned ashore	Adult
„ 28	Baltic ...	Tuberculosis	Boarding House Duke Street	Adult
„ 28	Lusitania ...	Measles	City Hospital, Fazakerley.	Children (2)
June 4	Canada ...	Chicken-pox	City Hospital, Fazakerley.	Child Infant
„ 4	„ ...	Chicken-pox	City Hospital, Fazakerley	Child
„ 4	„ ...	Measles	Brownlow Hill Hospital ...	Child
„ 7	Saxonia ..	Observation	Boarding House Great George Square	Infant

TABLE 19.—Continued.

Date, 1910.	Name of Vessel.	Nature of Sickness.	Where taken to.	Description of Patient
June 7	Saxonia ...	Chicken-pox ...	City Hospital, Fazakerley	Child
„ 14	Carmania ...	Measles ...	City Hospital, Fazakerley.	Child
„ 14	„ ...	Observation ...	Boarding House, Great George Square	Children (6)
„ 22	Friesland ...	Itch ...	Boarding House ... Paradise Street	Children (4)
„ 24	Virginian ...	Chicken-pox ...	City Hospital, Fazakerley	Child
July 23	Laurentic ...	Whooping Cough	Boarding House ... Duke Street	Infant
„ 27	Friesland ...	Trachoma ...	Boarding House ...	Adults (6)
Aug. 12	Empress of Britain	Scabies ...	Returned home ...	Child
„ 13	Dominion ...	Impetigo	Boarding House ... Great George Square	Infant
„ 30	Saxonia ...	Chicken-pox ...	City Hospital, Fazakerley	Child
Sep. 6	Carmania ...	Observation ...	Boarding House ... Great George Square	Child
„ 8	Corsican ...	Chicken-pox ...	Boarding House ... Kent Square	Child
„ 10	Dominion ...	Chicken-pox ...	Returned home ...	Infant
„ 22	Tunisian ...	Chicken-pox ...	Boarding House ...	Infant
Oct. 1	Mauretania ...	Chicken-pox ...	Boarding House ... Great George Square	Infant
„ 19	Haverford ...	Chicken-pox ...	Boarding House ... Great George Square	Child
„ 22	Canada ...	Observation	Boarding House ...	Adult
Nov. 12	Baltic ...	Chicken-pox ...	Boarding House ... 130, Duke Street	Infant
Dec. 21	Friesland ...	Tuberculosis ...	Boarding House ... Great George Square	Adult

As in previous years, the various bodies connected with the administration of the Port, viz., H.M. Collector of Customs and staff, the Mersey Docks and Harbour Board and their officers, and the various Shipping Companies, have co-operated with the Port Sanitary Authority in preventing disease, and have worked harmoniously together in every particular. The Consular Body have at all times given courteous assistance.

E. W. HOPE, M.D.

MUNICIPAL OFFICES,

LIVERPOOL, *9th March*, 1911.

APPENDIX.*Circular—Sanitary Authorities.*

PREVENTION OF EPIDEMIC DISEASE.
REGULATIONS AS TO PLAGUE.
DESTRUCTION OF RATS.

LOCAL GOVERNMENT BOARD,
WHITEHALL, S.W.,
10th November, 1910.

SIR,

I AM directed by the Local Government Board to state that, in consequence of the occurrence of cases of plague in rats in certain parts of England, they have deemed it desirable to confer upon Local Authorities in England and Wales powers with regard to the destruction of rats, in districts where plague in rats is present or suspected or in which there is an unusual mortality among rats.

The Board have accordingly, in pursuance of their powers for the prevention of epidemic diseases, issued an Order, copies of which are enclosed, authorising the local authority to take measures for the destruction of rats and for preventing their entrance into buildings and other premises.

The Board are glad to learn that in many localities active steps are being taken by owners and occupiers for the extermination of rats. They trust that these steps will not be abated and that all individuals will do their utmost to co-operate with and assist the local authorities in carrying out the Regulations.

The Order refers not only to the destruction of rats but to the prevention of their entrance into buildings and other premises. Inasmuch as the risk of infection from plague-stricken rats arises mainly through fleas it is obviously to the interest of all persons to do what they can to prevent their entry into dwellings and to remove from the proximity of dwellings accumulations of material or rubbish which may harbour them. In this way, as well as by action by the local authority under the Regulations, much may be done to further the object in view.

Copies of a Memorandum on Plague, which has been prepared by the Board's Medical Officer, will be forwarded in a day or two.

The Order and this Circular will be placed on sale, so that copies may shortly be obtained either directly or through any bookseller from Messrs. Wyman and Sons, Limited, Fetter Lane, E.C.

I am, Sir,

Your obedient Servant,

H. C. Monro,
Secretary.

The Clerk to the Port Sanitary Authority,
or
The Town Clerk,
or
The Clerk to the Urban District Council,
or
the Rural District Council.

MEMORANDUM ON PLAGUE.

I.—GENERAL CHARACTERISTICS OF THE DISEASE.

After frequent recurrences during several centuries, ending with the great outbreak of Plague in 1664-1679, the disease disappeared from Great Britain for more than 200 years. In 1894 it became prevalent at Hong Kong, and since that time it has spread from Asia into various parts of Europe, America, Africa, and Australia. In 1900 and in two subsequent years small outbreaks have occurred at Glasgow, and one or more cases have also occurred at Liverpool, Cardiff, and Leith during the last ten years.

During the present year (1910), cases suspected to be pneumonic plague were associated in Suffolk with definite occurrence of plague in rats and other rodents.

In view of these facts sanitary authorities and their officers should be on the alert, and especially should they take steps for ascertaining the cause of any recognised excessive sickness in rats, or of human illness of a doubtful nature associated with sickness or mortality in rats in the same district.

The following facts with regard to plague should be borne in mind:—

(1) *Symptoms of Plague.*

An attack of plague usually begins some three to five days after exposure to infection. The attack may develop gradually, but, commonly there is sudden onset with much fever, as indicated by a high temperature, rapid pulse, headache, hot skin, and thirst. The eyes are injected; the expression, at first anxious, becomes subsequently vacant and dull; the utterance is thick, and the gait unsteady as in one under the influence of drink. There is at times a distinct tendency to faint. The tongue is at first covered with a moist white fur except at the edges, which are red, but later on it becomes dry and of a mahogany colour.

The most distinctive sign of plague is the presence of glandular swellings, or "buboes" as they are called, in the groin, armpit, or neck. These "buboes," which led to the disease being called "bubonic plague," appear, as a rule, about the second or third day of the disease. They are usually painful and tender on pressure, and in size they vary from that of an almond to that of an orange. Later on they may "gather" and burst like an ordinary abscess. In a few cases "carbuncles" occur.

Cases of plague occur in which buboes are greatly delayed or even absent, as for instance in "Pneumonic," "Gastric," and "Septicæmic" plague.

In addition to the above-mentioned forms, plague sometimes takes on the so-called "ambulant" form. In plague of this description the affected person is hardly ill at all, presenting no definite symptoms perhaps beyond indolent, though painful, swellings in groin or armpit. Such plague cases may nevertheless be instrumental in spreading the disease, and any persons therefore who, having been possibly exposed to plague, exhibit these symptoms, should be isolated and watched medically until the nature of their malady has been definitely ascertained.

(2) *Diagnosis of Plague.*

The three most important forms of plague—bubonic, septicæmic, and pneumonic—are very liable to be confused with venereal diseases, enteric or typhus fever, and ordinary pneumonia respectively; and the differentiation will be greatly facilitated (a) if the medical practitioner bears the possibility of plague in mind, (b) if he enquires carefully into the antecedents of the patient, and into the occurrence of rat sickness or mortality, and (c) if he avails himself of the bacteriological aid to diagnosis mentioned below. The occurrence at or about the same time or in succession of more than one case of pneumonia in a house, or the unusual prevalence of disease of a dubious character in a neighbourhood, should at once lead to suspicion and to the action needed to clear up the diagnosis.

(3) *Method of spread of Plague.*

The pneumonic form of plague is directly infectious from patient to patient, the expectoration and possibly also the droplets ejected when the patient coughs containing plague bacilli. The means for avoiding personal infection are set out below.

In bubonic plague there is a consensus of experience that personal infection rarely, if ever, occurs; and that, given elementary cleanliness, including absence of fleas and bugs, little risk is run by doctors or nurses or other attendants. Bubonic plague is the rule, pneumonic plague is rare. That infection from patient to patient seldom occurs is further shown by the comparative infrequency of multiple cases of plague in invaded houses. Experimental observations* have shown that the plague bacillus has only a short extra-corporeal vitality; and that infected soil and dust need not be considered as serious or continuing sources of infection.

It has also been shown that experimental feeding of animals with virulent plague material produces the disease only when the infective material is given in enormous doses. Apart from the protection afforded by cooking, such massive infection of human food is highly improbable. It is, however, desirable that the access of rats and mice to human food should be prevented.

In the majority of cases of human plague the virus enters through the skin by means of a flea-bite, occasionally by inoculation in other ways. Under experimental conditions the chance of infection varies with the number of infected fleas which are allowed to bite the subject of the observation. The risk of infection therefore may be regarded as likely to be proportional to the extent to which the house or workplace is infested by plague-infected fleas.

(4) *Rats the source of Plague.*

Plague for administrative purposes may be regarded as a disease of rats which incidentally and occasionally attacks man. Fleas form the intermediaries between the diseased rat and man. If the fleas of infected rats (or the fleas of such other animals as occasionally suffer from plague) are excluded from access to human beings, plague will seldom, if ever, spread from animals to man.

The species of rat and the species of fleas infesting the rat have an important bearing on the likelihood of infection spreading to man.

During the great epidemic of plague in England in the 17th century, the black rat (*Mus rattus*) was chiefly prevalent. The brown or Norwegian rat (*Mus decumanus*) began to invade England early in the 18th century, and soon almost entirely replaced its smaller and weaker rival in this country. The change bears on the possibility of the occurrence of human plague in this country. The brown rat in towns is found chiefly in sewers, docks, slaughter-houses, granaries, &c. In the country it lives in burrows in the hedgerows and ditches and in ricks. It is a shy animal and avoids man, seldom taking up its abode in human habitations. In India the black rat lives and breeds in the houses and huts of the natives, in close proximity to man. Both the flea *ceratophyllus fasciatus*, which commonly infests rats in this country, and *pulex cheopis*, which is the usual rat flea in India and other tropical countries, readily feed upon man when hungry and when their natural host is not available; *pulex cheopis* is usually considered to bite man more readily than the former.

II.—MEASURES AGAINST PLAGUE.

The chief measures requiring to be taken to prevent the spread of plague follow from the knowledge of its natural history which has been acquired in recent years, especially as the result of the work of the Indian Plague Commission.

Measures concerned with the prevention of importation of infection from abroad are regulated by the International Sanitary Convention of 1903, and need not be considered in this Memorandum.

The experience of Glasgow shows that in this country the disease in man can easily be controlled under conditions of efficient sanitary administration.

* See Reports on Plague Investigations in India in Journal of Hygiene, particularly Vol. 8, No. 2 (1908).

The measures to be taken in respect of plague occurring in this country concern (a) human sources of infection, (b) infection from inanimate objects, and (c) infection from lower animals, especially the rat.

(a) *Precautions against human infection.*

The first step in the control of spread of infection from patient to patient is the discovery of suspected cases of illness and their prompt notification to the medical officer of health.

Notification.—The Board's Order of September, 1900, requires under penalty immediate notification to the medical officer of health of the district, and by him to the Board, of every recognised case of plague. To aid in this recognition the sketch of the clinical features of the malady given above has been inserted in this Memorandum. Further, in order to aid in identifying plague newly developing in a district, the Board have arranged for.

Bacteriological Diagnosis, without cost to the local authority, of material sent to the Board's medical officer by the medical officer of health from the earliest suspected cases.

Isolation and Observation of "contacts."—Although it is only in the pneumonic form of disease that personal infection is likely to occur, the isolation of all patients suffering from plague is desirable, among other reasons, because disinfection and the dis-infestation of premises from vermin can be more efficiently secured after the patient's removal. It is important to keep under observation those who have been in contact with the patient or exposed to the same conditions.

The Production of Personal Immunity.—Those persons who are liable to be exposed to direct infection will do well also to protect themselves beforehand by means of the plague prophylactic, which has been found to be successful in India in protecting attendants and others exposed to infection under very dangerous conditions. Plague prophylactic should be obtained by the medical officers of health of districts actually invaded by plague, for the protection of doctors and nurses who may have to attend cases of plague, or others who may be exposed to infection. Any person attending a patient with recognised or suspected pneumonic plague should use strict precautions to avoid infection. Among such precautions may be mentioned personal cleanliness, especially of the hands, and the use of a respirator containing a film of cotton, made to cover the nose and mouth.

The part played by man in spreading bubonic plague is small. Hence measures taken against him have a correspondingly limited influence in preventing the propagation of plague. In the case of pneumonic plague direct personal infection occurs. Such outbreaks are successfully dealt with by isolation of the patients and observation of contacts.

(b) *Precautions in regard to Inanimate Objects.*

These are concerned with the destruction of infective material derived from man or from animals, and with removing the harbourage for rats.

As already stated, the plague bacillus does not live long outside the animal body, even in excreta or in discharges from the lungs or abscesses. It is, however, important thoroughly to disinfect and cleanse infected dwellings. The disinfection and cleansing which will be most efficient will be such as will secure the dis-infestation of the rooms and of all articles of bedding and clothing from fleas. Clothing, which may harbour infected fleas, is dangerous. Fleas are to be found in dust and rubbish in dirty, untidy houses; hence the importance of domestic cleanliness in the prevention of plague.

The removal of all heaps of refuse, especially of garbage affording food for rats, the removal of empty boxes or any rubbish allowing rats to hide near houses, the stopping up of rat-runs with broken glass and tar, the repairing or re-laying of drains in houses where there are rat-runs, are among the most important methods for preventing the spread of plague by the rat. It is also important securely to stop up entrance to spaces under floors of dwellings and outbuildings where rats may harbour.* These and other like measures, which

*The provision of a layer of concrete under the floor, as required in the Board's Model Byelaws for new buildings in urban districts, is of importance in this connection.

will occur to all, are directed towards preventing the access of rats to or their entrance into houses. If rats are kept out of dwellings, danger is relatively small. There is difference of opinion as to the keeping of cats. Cats which have worried plague-infected vermin may bring rat fleas into the house; but the presence of a cat in a house is one of the best safeguards against domestic invasion by rats or mice. The balance of evidence appears to be strongly in favour of the protective influence of cats. But a cat which shows signs of illness should be destroyed and buried.

Domestic uncleanliness favours plague. The human flea (*pulex irritans*) which flourishes under such conditions, will bite both the rat and man; but it is seldom found on rats and soon dies out on them. Uncleanliness also may lead to increase of rats in and about the house.

(c) *Precautions against Rats.*

The continuous suppression or limitation of rats in a district into which rat-plague has been introduced will prevent the occurrence of human plague of local origin. Efforts should therefore be concentrated in such districts towards this end. Complete extermination of rats is perhaps impossible; but decrease of rats, short of extermination, diminishes greatly the chances of infection. Such measures must be persistent, as the rat soon breeds up to its old level of numbers, conditioned only by the amount of food supply and the activity of its enemies. Rats are intelligent, and will migrate to other districts unless the efforts at destruction are combined and systematic. In view of likely migration, medical officers of health and inspectors of nuisances, as well as private persons, in districts bordering on a neighbourhood where rat-plague exists, should make enquiries at intervals, and should submit suspected rats found dead or ill for bacteriological examination.

There are several methods of dealing with rats, but it is unwise to trust to any one of them alone, and, when practicable, all methods should be employed together. Of traps, a spring trap has been found to be the most useful kind. Poisons containing phosphorus or arsenic are effective, but they should not be laid where poultry or other domestic animals may be poisoned. The different forms of bacterial virus are useful, where chemical poisons cannot safely be employed. They are said sometimes to be uncertain in result, and it is important that animals poisoned by them should not obtain access to human food. Hunting with dogs and ferrets is a very effective method, especially in the hands of expert rat catchers. If dogs or ferrets are employed, they should be kept under observation and not allowed in domestic dwellings. The Board of Agriculture and Fisheries are about to issue a leaflet on the subject of rat destruction, which will contain general information on the matter.

Even in districts not affected with rat-plague, nor bordering on districts so affected, the Sanitary Authority should be on the watch for the occurrence of unusual mortality among rats. If excessive mortality is observed, bacteriological examination of rats found dead should be made, and if they prove to have died of plague, steps should be taken to ensure the systematic and continuous destruction of rats. Precautionary measures of this kind are especially called for in and about docks and wharves, and also in places where rats abound, such as granaries, meat markets, slaughter-houses, piggeries, and dumping grounds for refuse. The private slaughter-houses still found in the immediate neighbourhood of dwelling-houses are a special source of danger, being commonly over-run with rats.

Fleas leave the dead rat when it becomes cold. Dead rats should, however, not be handled without precautions. Cremation is the best method of disposal of dead rats, if it can be carried out without involving delay or unguarded handling. Failing this they should be so buried that they cannot be disinterred by other animals.

Rat-catchers, as well as those engaged in disinfection of clothing, &c., can, apart from the administration of plague prophylactic, partially protect themselves by the external application of powders, &c., disliked by fleas, and by wearing puttees or gaiters and gloves.

On a previous page the importance of removing all harbourage for rats in or near houses has been emphasised. So far as possible every house should be rat-proof. It is equally important not to encourage the domestic invasion of rats by allowing morsels of food to lie on or under the floor or in ashpits.

The most important recommendations may be summarised as follows:—

- 1st.—Persistently and systematically destroy all rats.
- 2nd.—Remove and obliterate their nests, burrows, and habitual haunts, and
- 3rd.—Make each dwelling as far as practicable rat-proof, and remove all known harbourage for rats in or near dwellings.
- 4th.—At the same time do not allow waste food (whether for human beings, chickens, or other animals) to accumulate in or about the house.

Rat-plague is not necessarily accompanied or followed by human plague. Freedom from risk of plague can be secured, with almost complete certainty, by any household which acts in accordance with the directions given above.

ARTHUR NEWSHOLME,

Medical Officer.

LOCAL GOVERNMENT BOARD,

November, 1910.

STATUTORY RULES AND ORDERS, 1910.

No. 1165.

PUBLIC HEALTH, ENGLAND.
Prevention of Infectious and Epidemic Diseases.

REGULATIONS OF THE LOCAL GOVERNMENT BOARD, DATED NOVEMBER 10, 1910, AS TO
THE DESTRUCTION OF RATS, AND FOR PREVENTING THEIR ENTRANCE INTO
BUILDINGS AND OTHER PREMISES.

56,223.

- To the Mayor, Aldermen and Commons of the City of London;—
To the Councils of the several Metropolitan Boroughs;—
To the Councils of the several Municipal Boroughs and other Urban Districts;—
To the Councils of the several Rural Districts;—
To the several Port Sanitary Authorities;—
And to all others whom it may concern.

Whereas We, the Local Government Board, are empowered by the Public Health Act, 1875, as extended to London by the Public Health (London) Act, 1891, and as amended by the Public Health Act, 1896, from time to time to make, alter, and revoke such Regulations as to Us may seem fit, with a view to the treatment of persons affected with Cholera, or any other epidemic, endemic, or infectious disease, and preventing the spread of Cholera and such other diseases, as well on the seas, rivers, and waters of the United Kingdom, and on the high seas within three miles of the coasts thereof, as on land, and for guarding against the spread of disease; and may provide for the enforcement and execution of such Regulations:

Now therefore, We, the Local Government Board, do, by this Our Order, and in the exercise of the powers conferred on Us by the Public Health Act, 1875, the Public Health (London) Act, 1891, and the Public Health Act, 1896, and every other power enabling Us in that behalf, make the following Regulations, and Declare that the said Regulations shall apply and have effect throughout England and Wales, and shall be enforced and executed by the Authorities, Officers and Servants herein-after mentioned:—

Article I.—In this Order—

The expression "Local Authority" means the Common Council of the City of London, the Council of each Metropolitan Borough, the Council of each Municipal Borough or other Urban District, the Council of each Rural District and each Port Sanitary Authority;

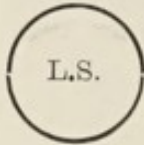
The expression "District" means the District of a Local Authority.

Article I.—In any district in which a representation is made to the Local Authority that rats in the district are infected or threatened with Plague, or that there is an unusual mortality among rats in the District, the Local Authority shall report the matter to Us, and shall take measures (a) for the destruction of all rats in the district and (b) for preventing the entrance of rats into buildings and other premises in the district.

Article III.—For the purposes of these Regulations the Local Authority may appoint such additional officers or servants as they may deem necessary and may delegate to such officers or servants any powers under these Regulations.

Article IV.—The expenses incurred by a Local Authority in the execution of these Regulations shall be defrayed in the case of a Local Authority which is a Sanitary Authority for the execution of the Public Health (London) Act, 1891, as part of their expenses in the execution of that Act, and in the case of any other Local Authority as part of their general expenses in the execution of the Public Health Acts.

Given under the Seal of Office of the Local Government Board, this Tenth day of November, in the year One thousand nine hundred and ten.



John Burns,
President.

H. C. Monro,
Secretary.

NOTICE.—The Public Health Act, 1896, provides by subsection (3) of Section 1 that if any person wilfully neglects or refuses to obey or carry out, or obstructs the execution of, any regulation made under section one hundred and thirty, or section one hundred and thirty-four of the Public Health Act, 1875, or in pursuance of either of those sections as extended to London by the Public Health (London) Act, 1891, and as amended by the Public Health Act, 1896, he shall be liable to a penalty not exceeding one hundred pounds, and in the case of a continuing offence to a further penalty not exceeding fifty pounds for every day during which the offence continues.

St. R. & O., 1910, No. 1165*.

(54,199.)

FOREIGN MEAT REGULATIONS.
(AMENDMENT, 1909.)

(27th September, 1909.)



TO ALL PORT SANITARY AUTHORITIES:—

- To all other Sanitary Authorities and Local Authorities as herein defined;—
- To all Officers of Customs and Excise;—
- To all Medical Officers of Health of the Sanitary Authorities and Local Authorities aforesaid;—
- To all Masters of Ships;—
- And to all others whom it may concern.

WHEREAS, in relation to articles of food, the Public Health (Foreign Meat) Regulations, 1908, provide for the use of an Official Certificate, for the Classification of Foreign Meat, and for the combined action of Authorities for the purposes of those Regulations;

And whereas it is expedient that, with respect to the aforesaid matters and to other purposes, the Public Health (Foreign Meat) Regulations, 1908, be altered, and that, accordingly, such Regulations as are hereinafter set forth be made;

And whereas the Commissioners of Customs and Excise have signified their consent to the said Regulations, so far as they apply to the Officers of Customs and Excise:

NOW, THEREFORE, We, the Local Government Board, by this Our Order, and in the exercise of the powers conferred upon Us by the Public Health Act, 1875, the Public Health (London) Act, 1891, the Public Health Act, 1896, and the Public Health (Regulations as to Food) Act, 1907, and of every other power enabling Us in that behalf, do make the following Regulations, that is to say:

ARTICLE I.—Article I. of the Public Health (Foreign Meat) Regulations, 1908, shall be revoked: and those Regulations shall be altered so that they shall have effect, with the substitution for the Article so revoked of the following Article, namely:—

“ARTICLE I.—In these Regulations, unless the contrary intention appears—

- “(a) Words importing the masculine gender include females;
- “(b) Words in the singular include the plural, and words in the plural include the singular;
- “(c) Expressions referring to writing include references to printing and other modes of representing or reproducing words in a visible form;
- “(d) The expression ‘cattle’ includes a bull, cow, ox, heifer, calf, ram, ewe, wether, goat, and kid;
- “(e) The expression ‘pig’ includes a boar, sow, and hog;

- “(f) The expression ‘meat’ means pork, the flesh of cattle, any other
 “edible part of a pig or of cattle, or a substance, compound,
 “material, or article of which pork, or the flesh of cattle, or any
 “other edible part of a pig or of cattle is an ingredient;
- “(g) The expression ‘foreign’ used in relation to meat means brought
 “from a place situate elsewhere than in the United Kingdom, the
 “Channel Islands, or the Isle of Man;
- “(h) The expression ‘Official Certificate’ used in relation to foreign meat
 “or in relation to a box, case, receptacle, or package containing
 “foreign meat, means a certificate, label, mark, stamp, or other
 “voucher which, by a notice published in the London Gazette at
 “any time during the period of twelve months beginning on the
 “First day of October, One thousand nine hundred and eight, or
 “which, by a notice published in the London Gazette after the
 “expiration of that period, is declared to be admissible in the
 “manner, to the extent, and subject to the rules and conditions,
 “prescribed in that notice, as evidence that the cattle or pig from
 “which the meat is derived has been certified by a competent
 “authority in the place of origin to be free from disease at the
 “time of slaughter, and that the meat has been certified by the like
 “authority to have been dressed or prepared, and packed with the
 “needful observance of all requirements for the prevention of
 “danger arising to public health from the meat as an article of
 “food; and, for the purposes of this definition and of any
 “Regulations under the Public Health (Regulations as to Food)
 “Act, 1907, every Official Certificate which, by a notice published in
 “the London Gazette at any time during the period of twelve
 “months beginning on the First day of October, One thousand nine
 “hundred and eight, is declared to be admissible as aforesaid, shall,
 “notwithstanding anything prescribed in the notice, continue to
 “be so admissible until, by a further notice to be published in the
 “London Gazette, the said Official Certificate is declared to be no
 “longer so admissible;
- “(i) The expression ‘Foreign Meat of Class I.’ means foreign meat in
 “the form
- “(A) Of scrap meat, namely, meat which, whether it is fresh, or has,
 “before importation, been subjected to a process of freezing or
 “other refrigeration, or to chemical or other treatment, with
 “or without the addition of any preservative or colouring
 “substance—
- “(i) consists of scraps, trimmings or other pieces (whether
 “with or without bone in its natural state of attachment) of
 “such shape or in such condition as to afford insufficient
 “means of identification with definite parts of a carcass; and
- “(ii) has not, before importation, been made ready for
 “human consumption in the form of a sausage, or of another
 “prepared or manufactured article of food;
- “or
- “(B) Of tripe, namely, any edible part of the stomach, or
 “Of a tongue, or kidney,
 “to which formalin, or a solution, or other preparation of, or
 “comprising formic aldehyde; or a compound containing
 “fluorine or boron; or salicylic acid, formic acid, sulphurous
 “acid, benzoic acid, or any compound of any such acid has been
 “applied;
- “or
- “(c) Of severed parts of the carcass of a pig, or of other edible parts of a
 “pig, which have not, before importation, been salted, cured,
 “pickled, dried, or smoked, or otherwise prepared in the manner

“ in which bacon or ham is ordinarily prepared, and which are
 “ not contained in a box, case, receptacle, or package with an
 “ Official Certificate impressed thereon, or affixed or attached
 “ thereto;

“ or

“ (D) Of severed parts of the carcass of a pig, or of other edible parts
 “ of a pig, which have, before importation, been salted, cured,
 “ pickled, dried, or smoked, or otherwise prepared in the manner
 “ in which bacon or ham is ordinarily prepared, and which are
 “ not contained in a box, case, receptacle, or package with an
 “ Official Certificate impressed thereon, or affixed or attached
 “ thereto, and which, in the case of the severed parts of the
 “ carcass, are without the lymphatic glands about those parts
 “ in their natural position;

“ or

“ (E) Of meat which, whether derived from cattle or a pig, is in the
 “ form of a carcass, or of a part of a carcass, and, in either
 “ case, comprises the ribs, and is without any such membrane
 “ as, in its natural position, forms the lining of the cavity
 “ enclosed by the ribs;

“ (j) The expression ‘ Foreign Meat of Class II.’ means foreign meat
 “ which, being in the form of the entire carcass of a pig, is without
 “ the head in its natural state of attachment to the carcass, or is
 “ without the lymphatic glands about the throat, or about any other
 “ part of the carcass, in their natural position;

“ (k) The expression ‘ Foreign Meat of Class III.’ means foreign meat
 “ which is in the form of severed parts of the carcass of a pig, or
 “ of other edible parts of a pig, which is not and does not comprise
 “ any foreign meat of Class I., or any foreign meat of Class II.,
 “ and which is contained in a box, case, receptacle, or package with
 “ an Official Certificate impressed thereon, or affixed or attached
 “ thereto;

“ (l) The expression ‘ Foreign Meat Unclassed’ means foreign meat
 “ other than foreign meat of Class I., foreign meat of Class II.,
 “ or foreign meat of Class III.;

“ (m) The expression ‘ importer’ means any person in the United
 “ Kingdom who, either as owner or consignee, agent or broker, is
 “ entitled to the possession, custody, or control of any foreign meat;

“ (n) The expression ‘ ship’ includes a vessel or boat;

“ (o) The expression ‘ Officer of Customs and Excise’ includes any person
 “ acting under the authority of the Commissioners of Customs and
 “ Excise;

“ (p) The expression ‘ Master’ used in relation to a ship includes the
 “ officer, or other person for the time being in charge or command
 “ of the ship;

“ (q) The expression ‘ Sanitary Authority’ means every Port Sanitary
 “ Authority, and every Council of a Municipal Borough or other
 “ Urban District, and every Rural District Council whose borough
 “ or district includes or abuts on any part of a Customs port which
 “ part is not within the jurisdiction of a Port Sanitary Authority;

“ (r) The expression ‘ the District’ means the District of a Sanitary
 “ Authority;

“ (s) The expression ‘ Medical Officer of Health’ includes any duly
 “ qualified Medical Practitioner appointed or employed by a Sanitary
 “ Authority to act in the execution of these Regulations; and any
 “ other person appointed or employed by the Sanitary Authority
 “ under these Regulations to exercise any powers, or to discharge
 “ any duties assigned to the Medical Officer of Health;

“(t) The expression ‘Local Authority’ means every Council of a
 “Municipal Borough or other Urban District and every Rural
 “District Council, not being a Sanitary Authority within the
 “meaning of these Regulations, and includes the Common Council
 “of the City of London and every Council of a Metropolitan
 “Borough;

“(u) The expression ‘area’ used in relation to a Local Authority means
 “the area subject to the jurisdiction of the Local Authority for the
 “purposes of the Public Health Act, 1875, or of the Public Health
 “(London) Act, 1891, as the case may be.”

ARTICLE II.—These Regulations shall come into operation on the Thirtieth day of September, One thousand nine hundred and nine, and then and thereafter the Public Health (Foreign Meat) Regulations, 1908, and any Order theretofore made in pursuance of Article XVI. of those Regulations shall apply and have effect and shall be enforced and executed in such form and in such manner as will give full effect to the alterations made by these Regulations, and as if, throughout the Public Health (Foreign Meat) Regulations, 1908, references to an Officer of Customs and Excise were substituted for references to an Officer of Customs, and as if, throughout any such Order, references to the Public Health (Foreign Meat) Regulations, 1908, as altered by these Regulations, were substituted for references to the Public Health (Foreign Meat) Regulations, 1908, and references to an Officer of Customs and Excise were substituted for references to an Officer of Customs.

ARTICLE III.—These Regulations may be cited as “The Public Health (Foreign Meat) Amending Regulations, 1909.”

Given under the Seal of Office of the Local Government Board, this
 Twenty-seventh day of September, in the year One thousand nine
 hundred and nine.

L.S.

John Burns,
 President.

S. B. Provis,
 Secretary.

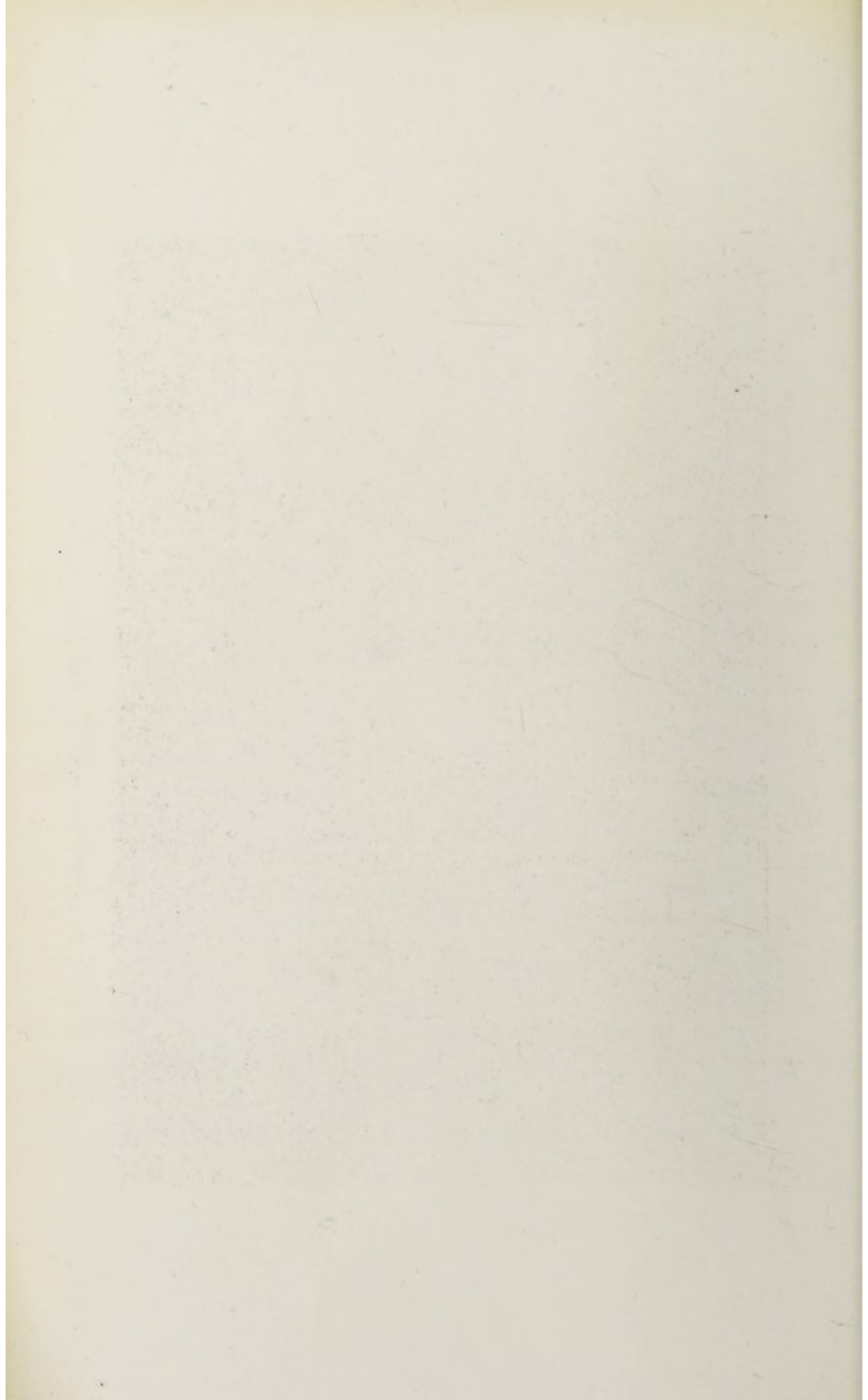
Notice.—The Public Health Act, 1896, provides by subsection 3 of Section 1 that if any person wilfully neglects or refuses to obey or carry out, or obstructs the execution of any regulation made under any of the enactments mentioned in that Act he shall be liable to a penalty not exceeding One Hundred Pounds, and in the case of a continuing offence to a further penalty not exceeding Fifty Pounds for every day during which the offence continues.

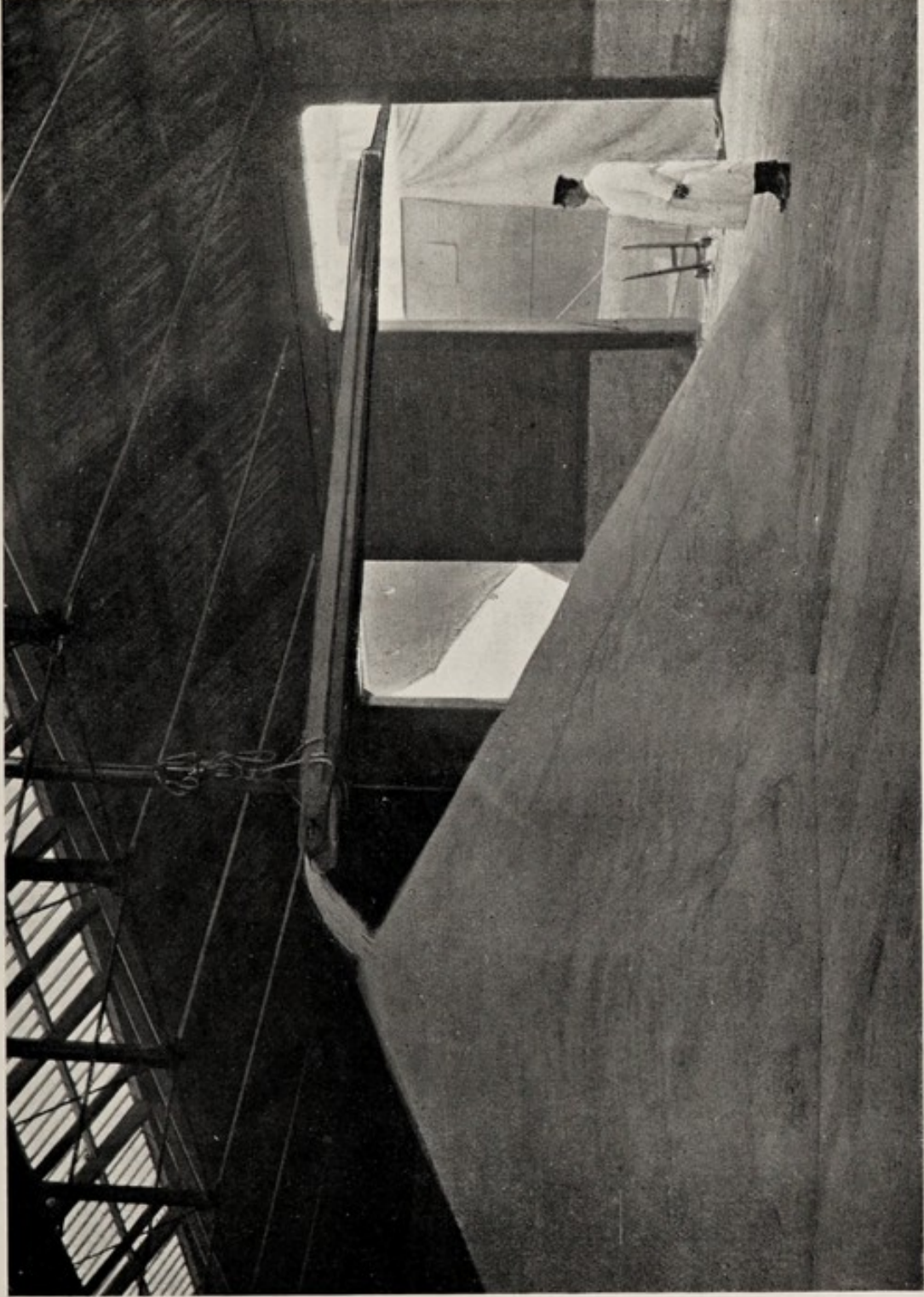
The power of making regulations under the Public Health Act, 1896, and the enactments mentioned in that Act is enlarged by the Public Health (Regulations as to Food) Act, 1907.



FOOD INSPECTION—SORTING ORANGES.

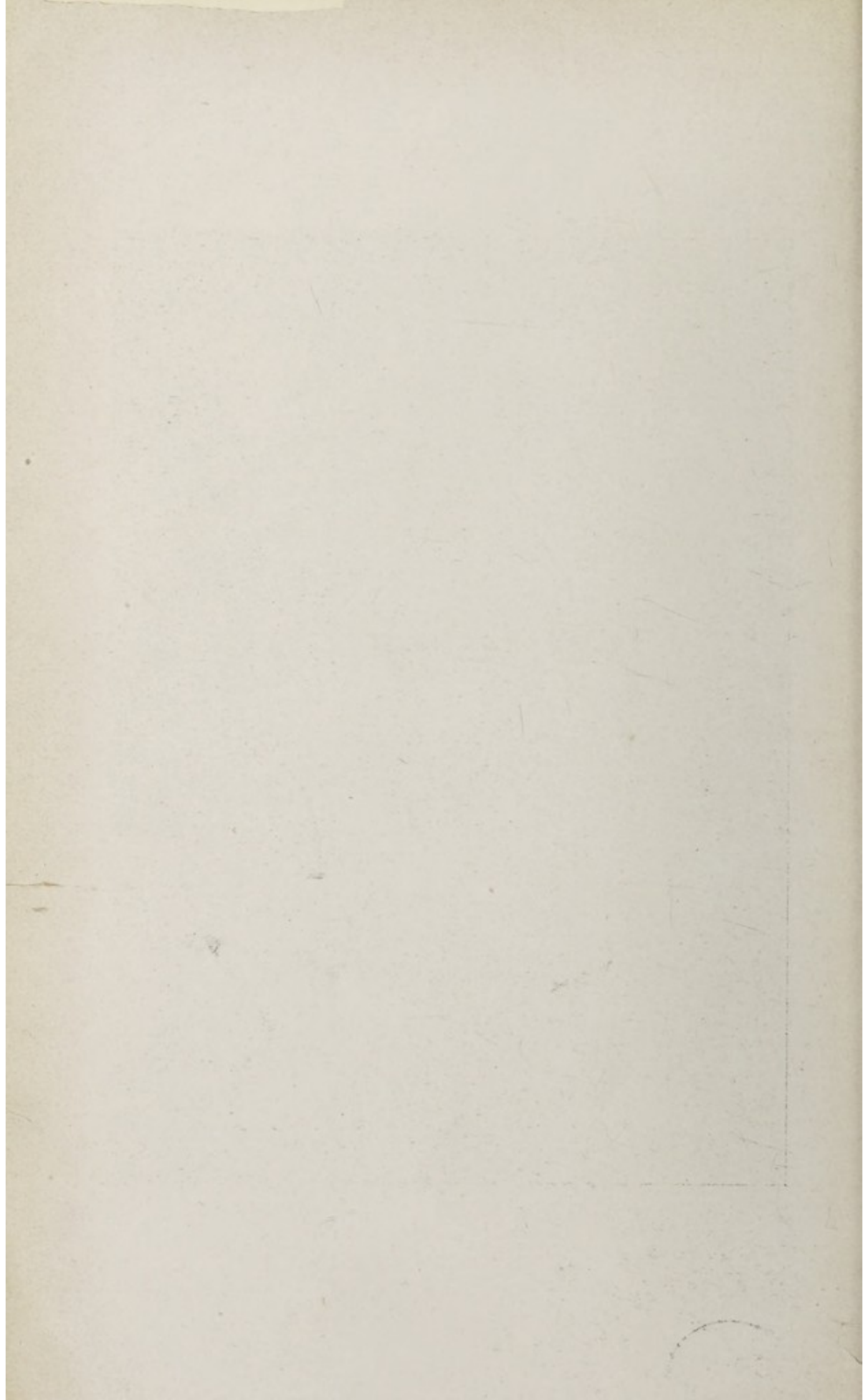
PORT OF LIVERPOOL.

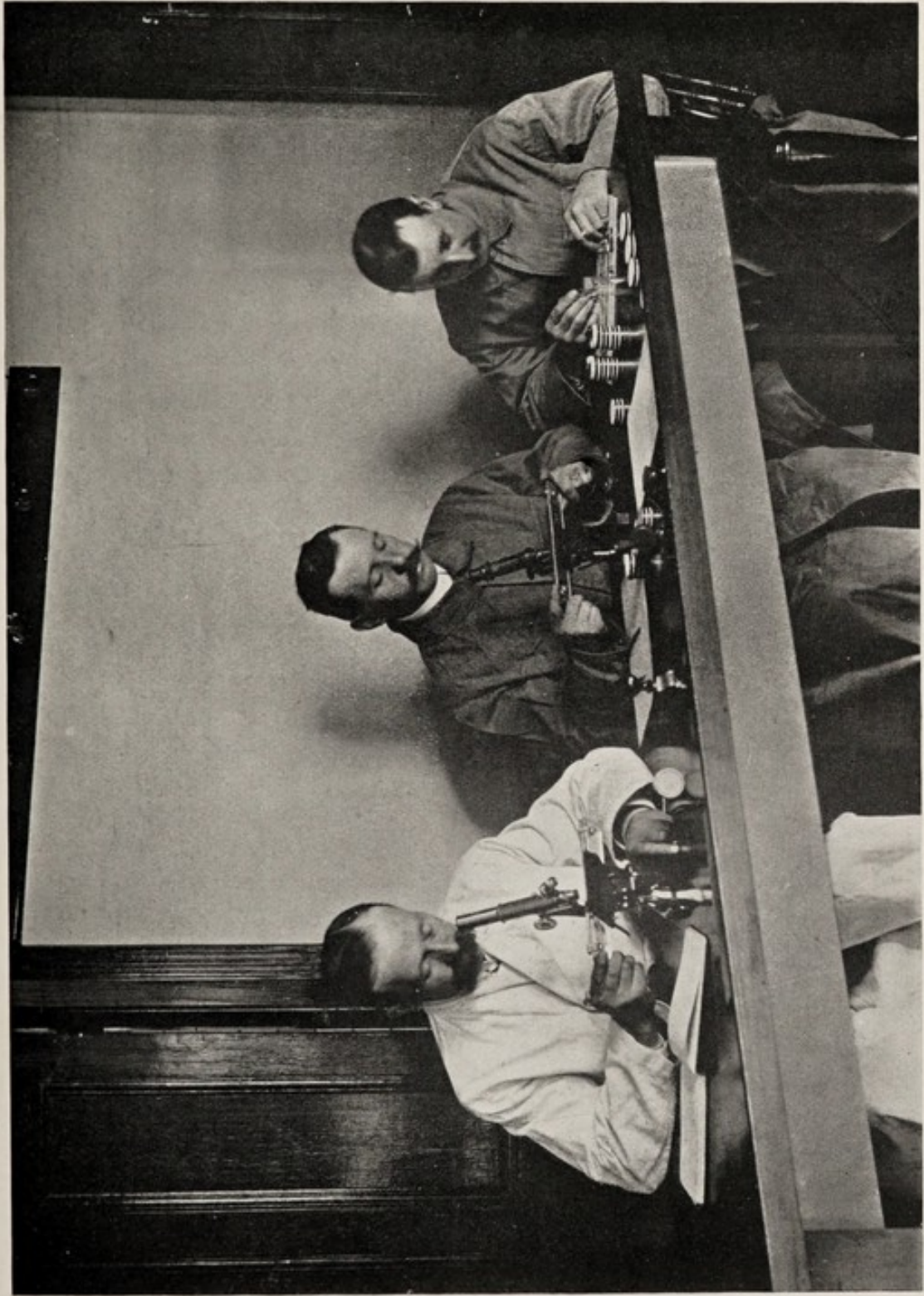




LANDING GRAIN IN BULK.

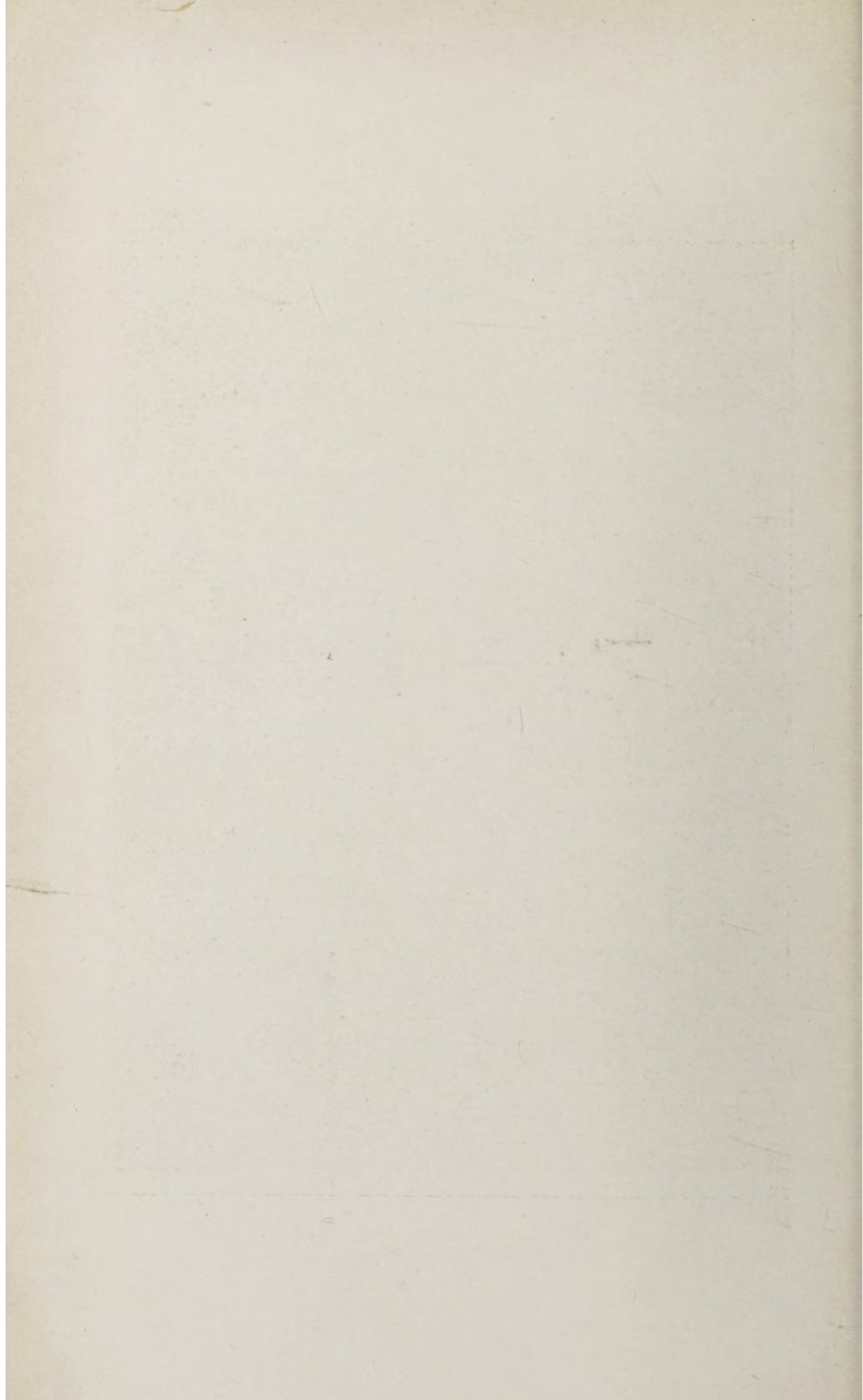
PORT OF LIVERPOOL.

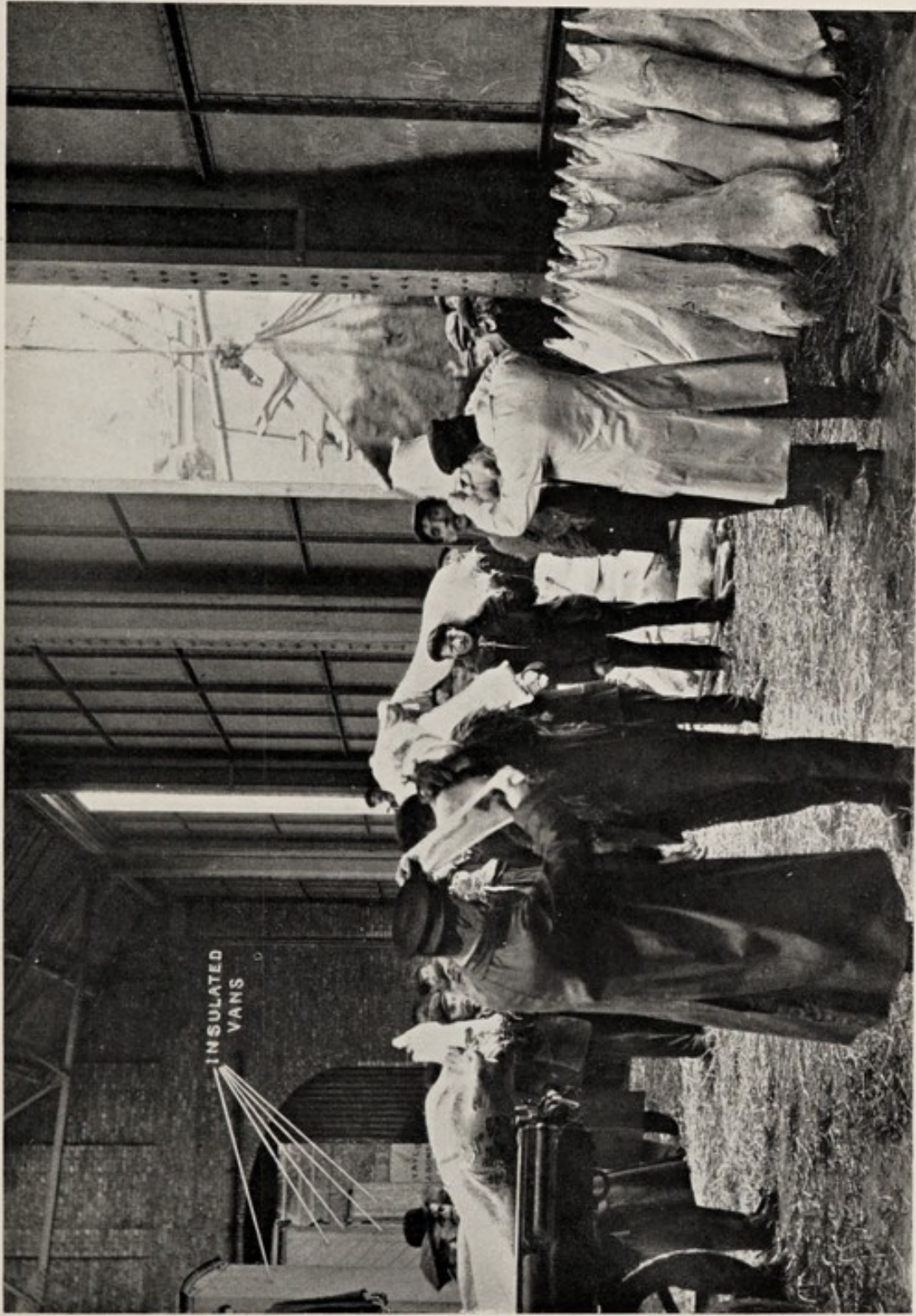




FOOD INSPECTION—EXAMINATION OF PORK FOR TRICHINOSIS.

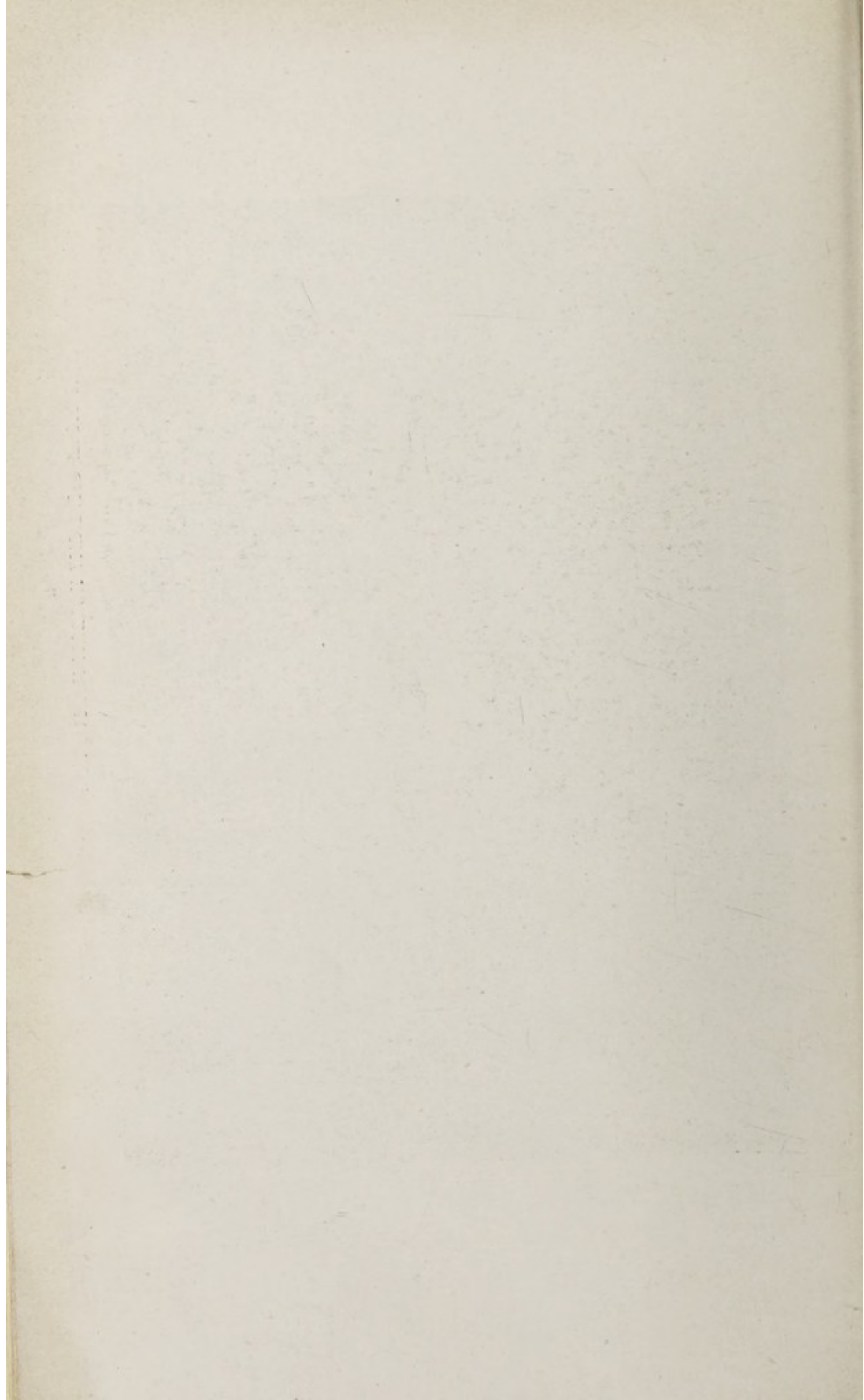
PORT OF LIVERPOOL.





FOOD INSPECTION—EXAMINATION OF FROZEN MUTTON AND LAMB FROM NEW ZEALAND.

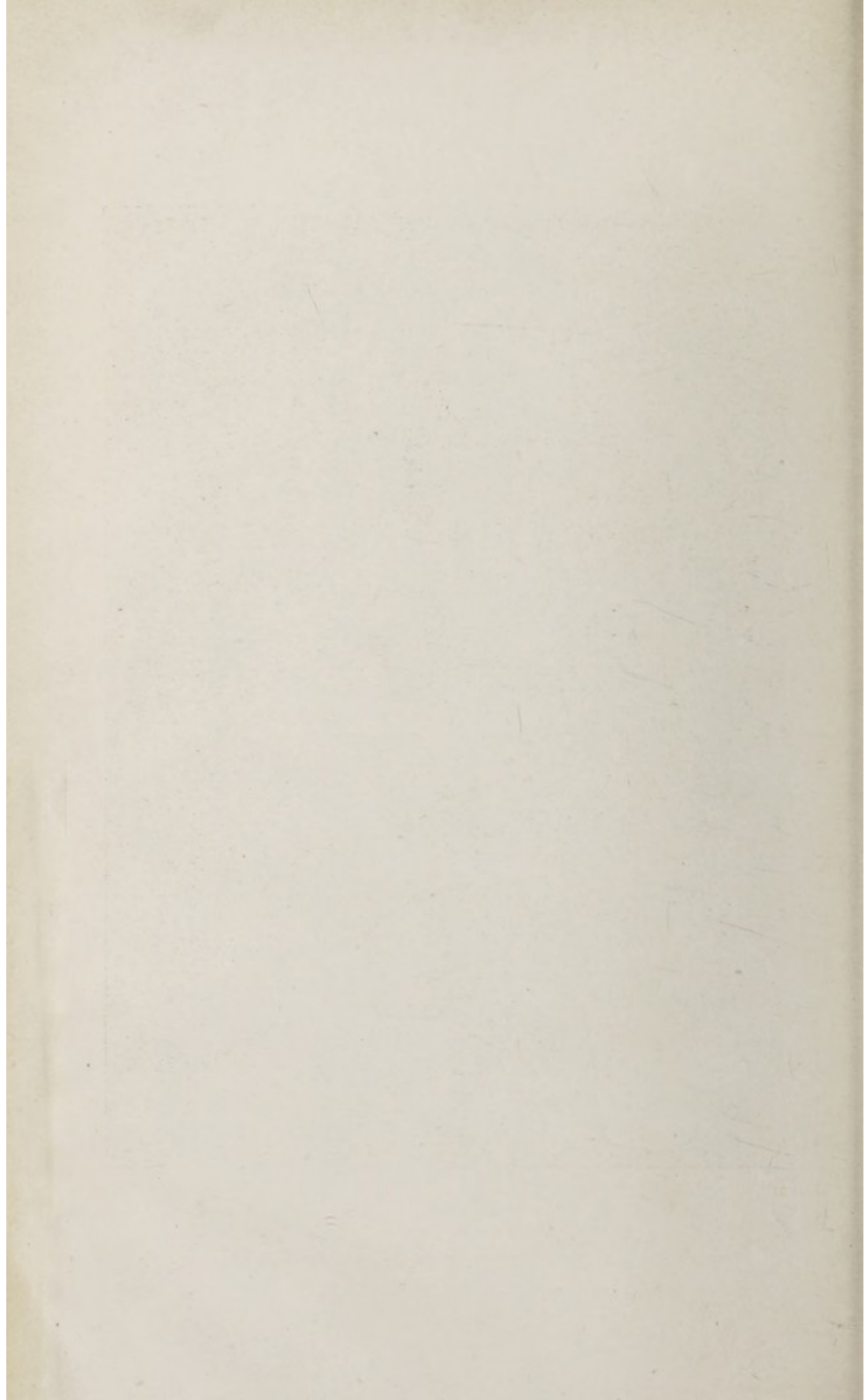
PORT OF LIVERPOOL.

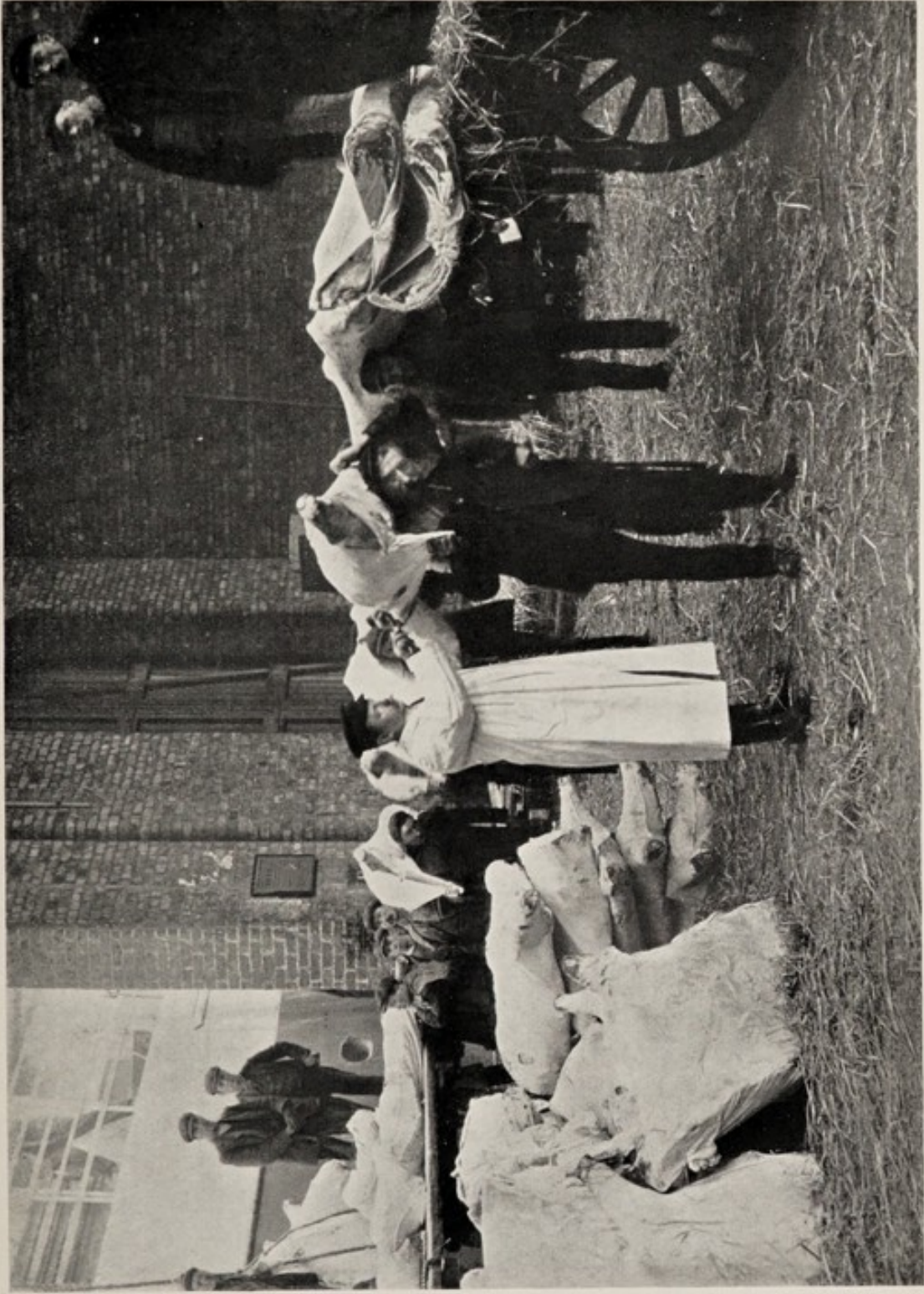




FOOD INSPECTION—EXAMINATION OF FROZEN OFFAL.

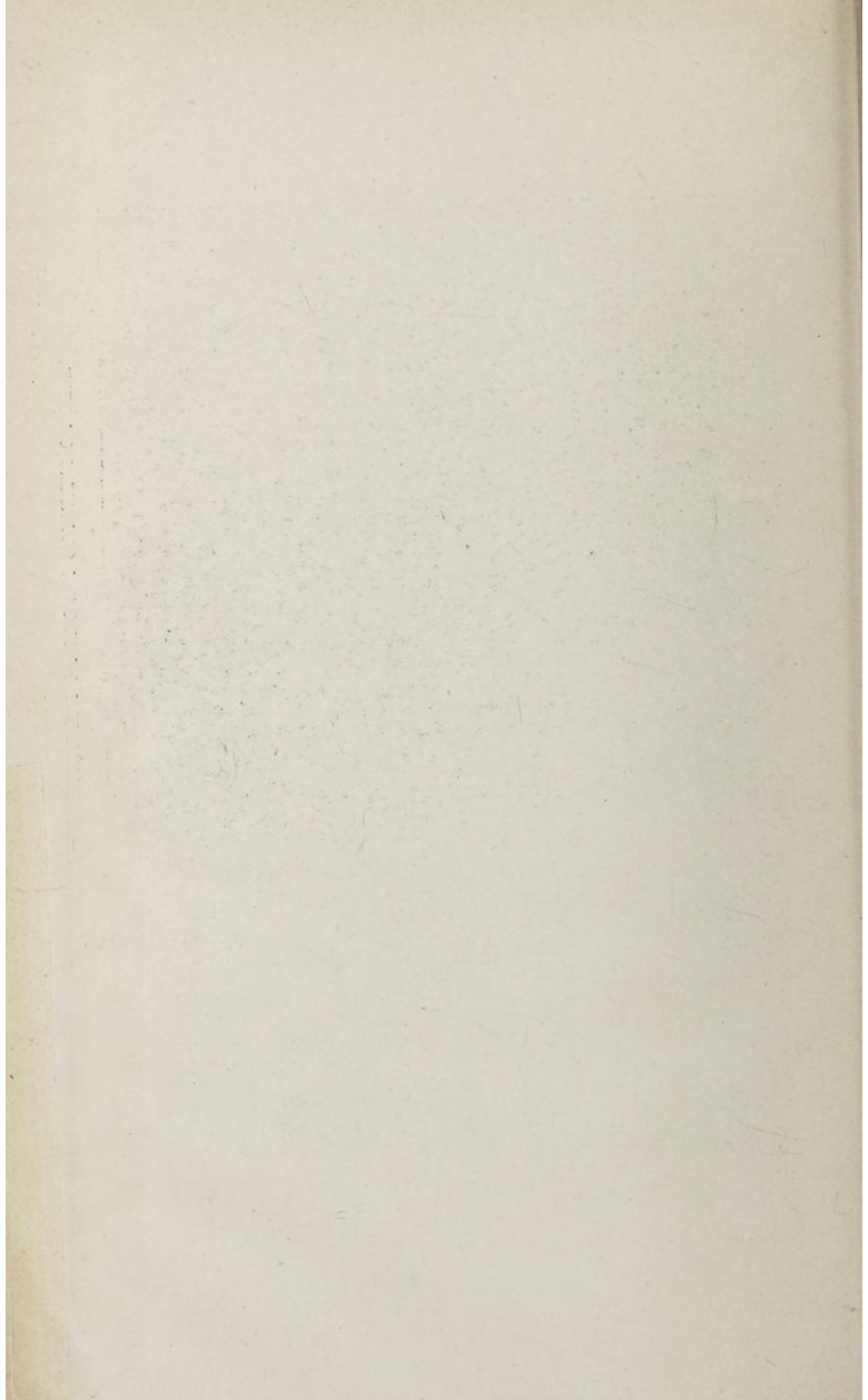
PORT OF LIVERPOOL.





FOOD INSPECTION—EXAMINATION OF FROZEN QUARTERS OF BEEF.

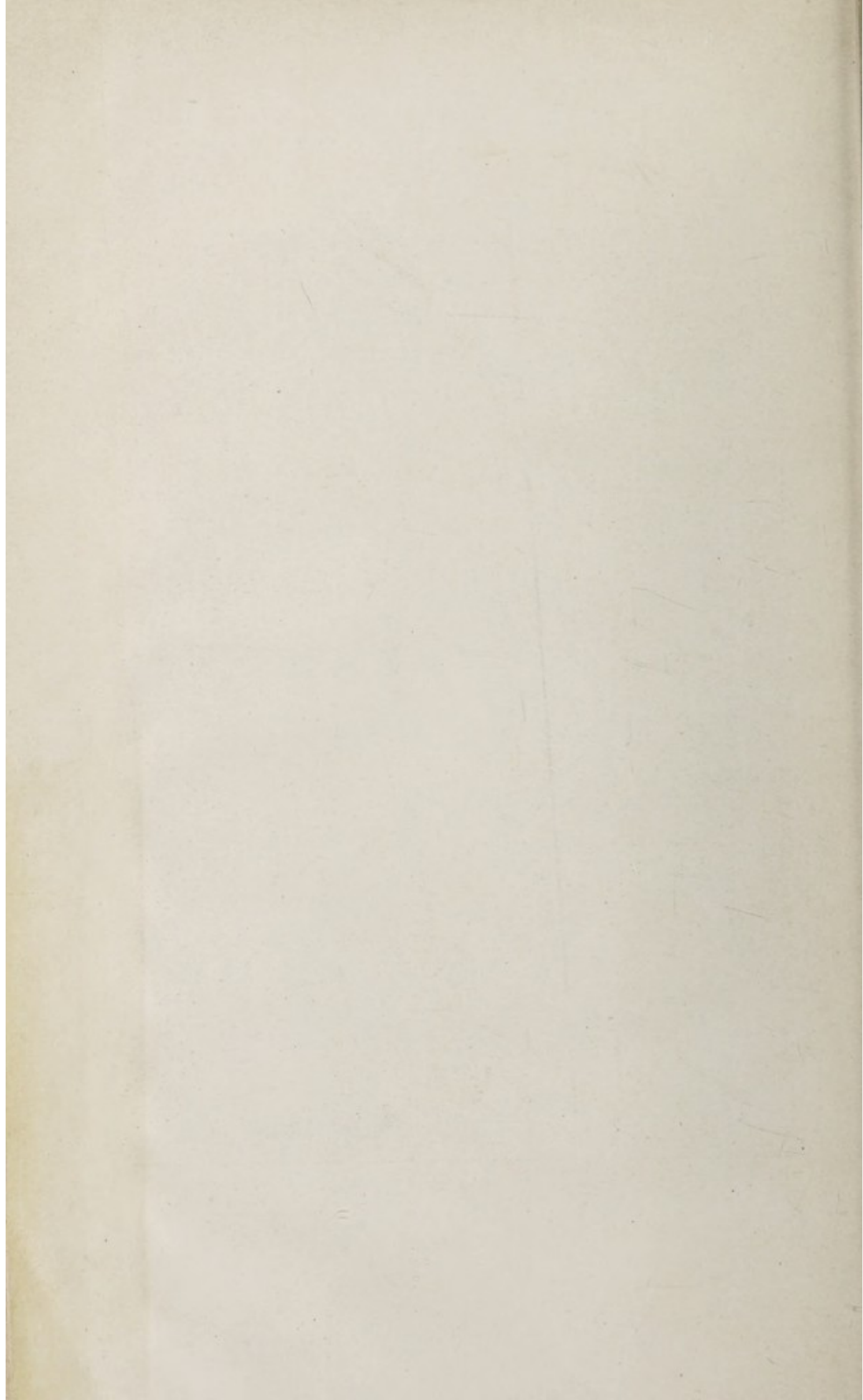
PORT OF LIVERPOOL.





FOOD INSPECTION—EXAMINATION OF CANNED GOODS.

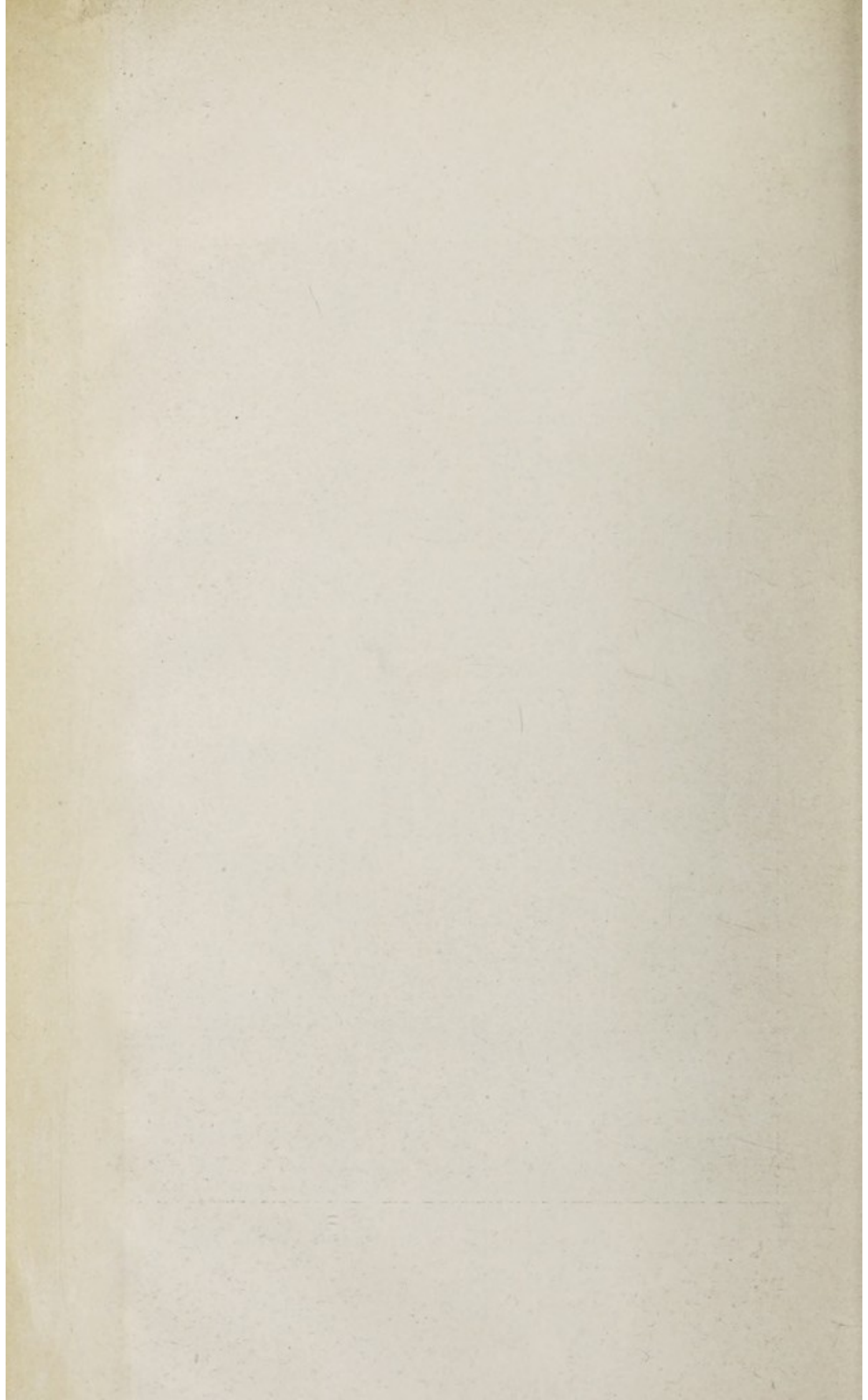
PORT OF LIVERPOOL..





FOOD INSPECTION—EXAMINATION OF CHINESE PORK.

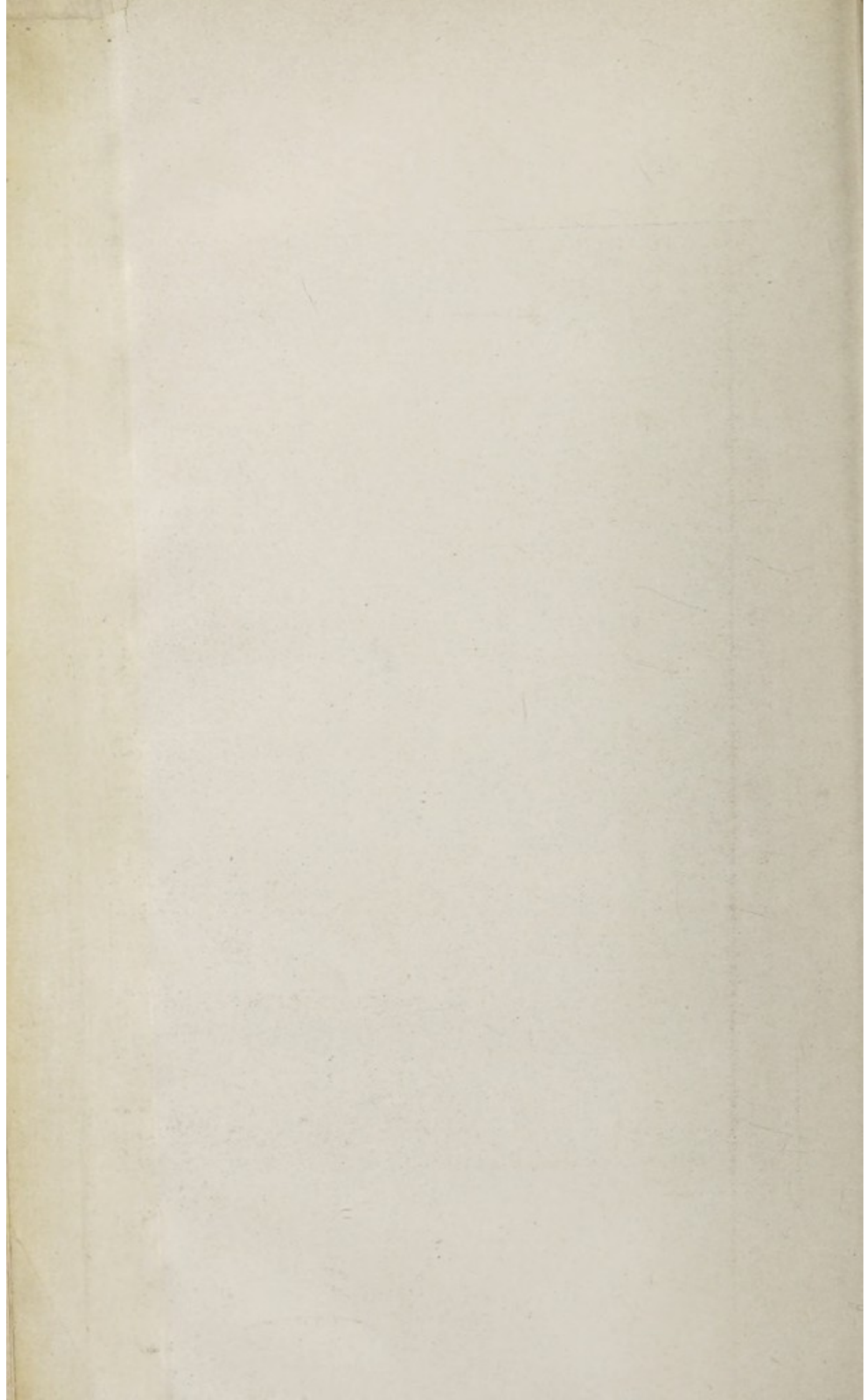
PORT OF LIVERPOOL.

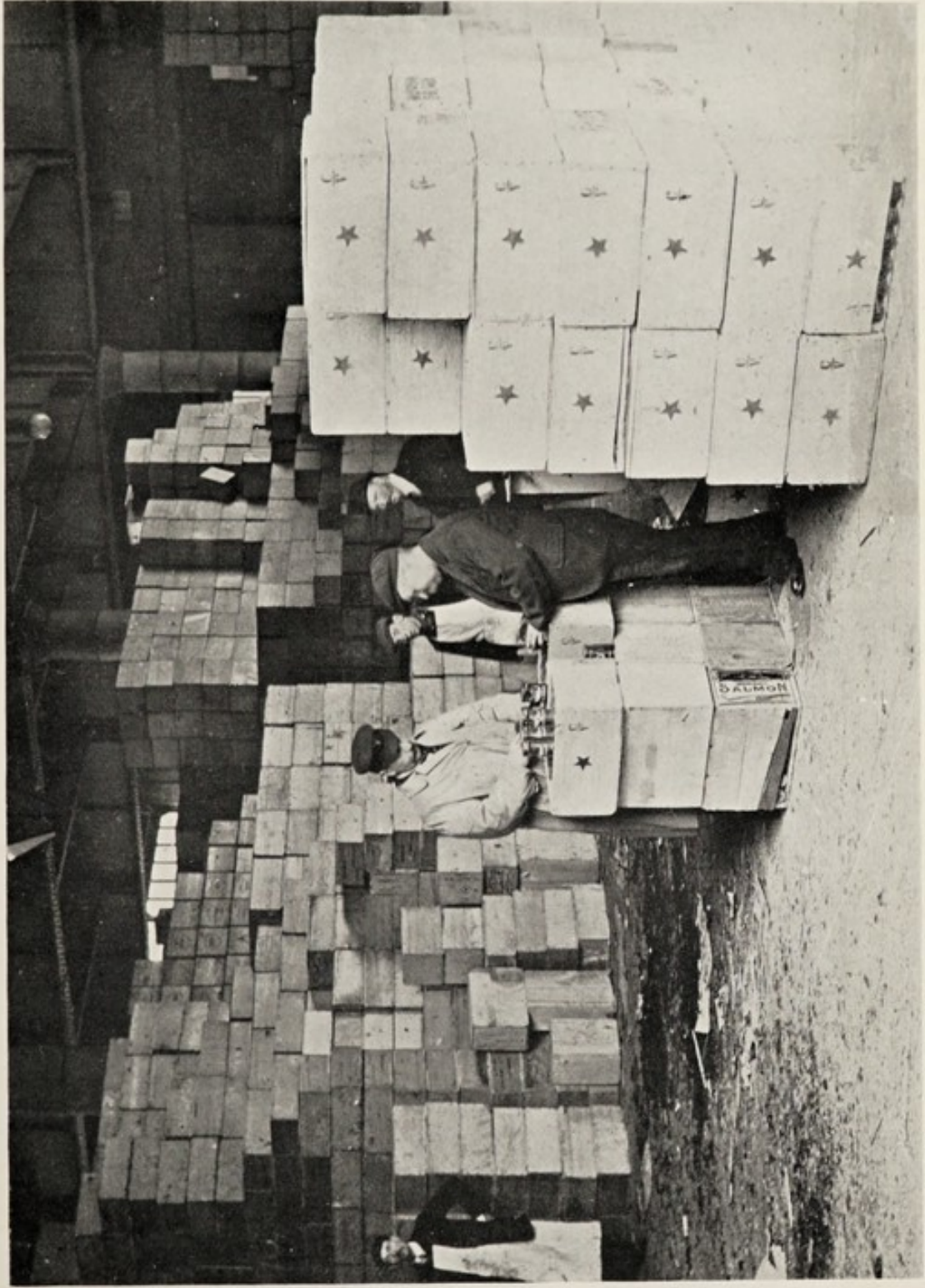




FOOD INSPECTION—EXAMINATION OF PICKLED BEEF AND PORK.

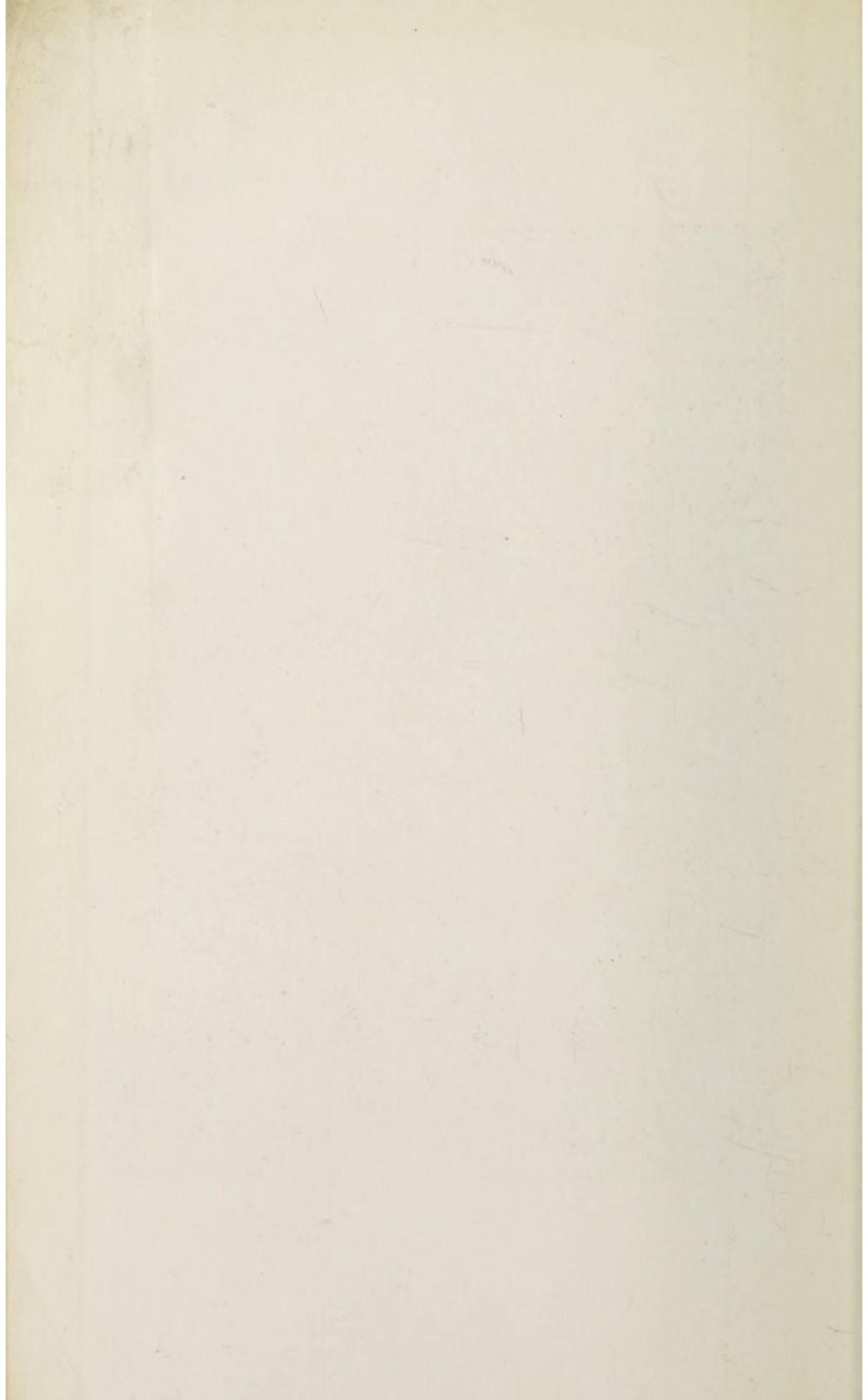
PORT OF LIVERPOOL.

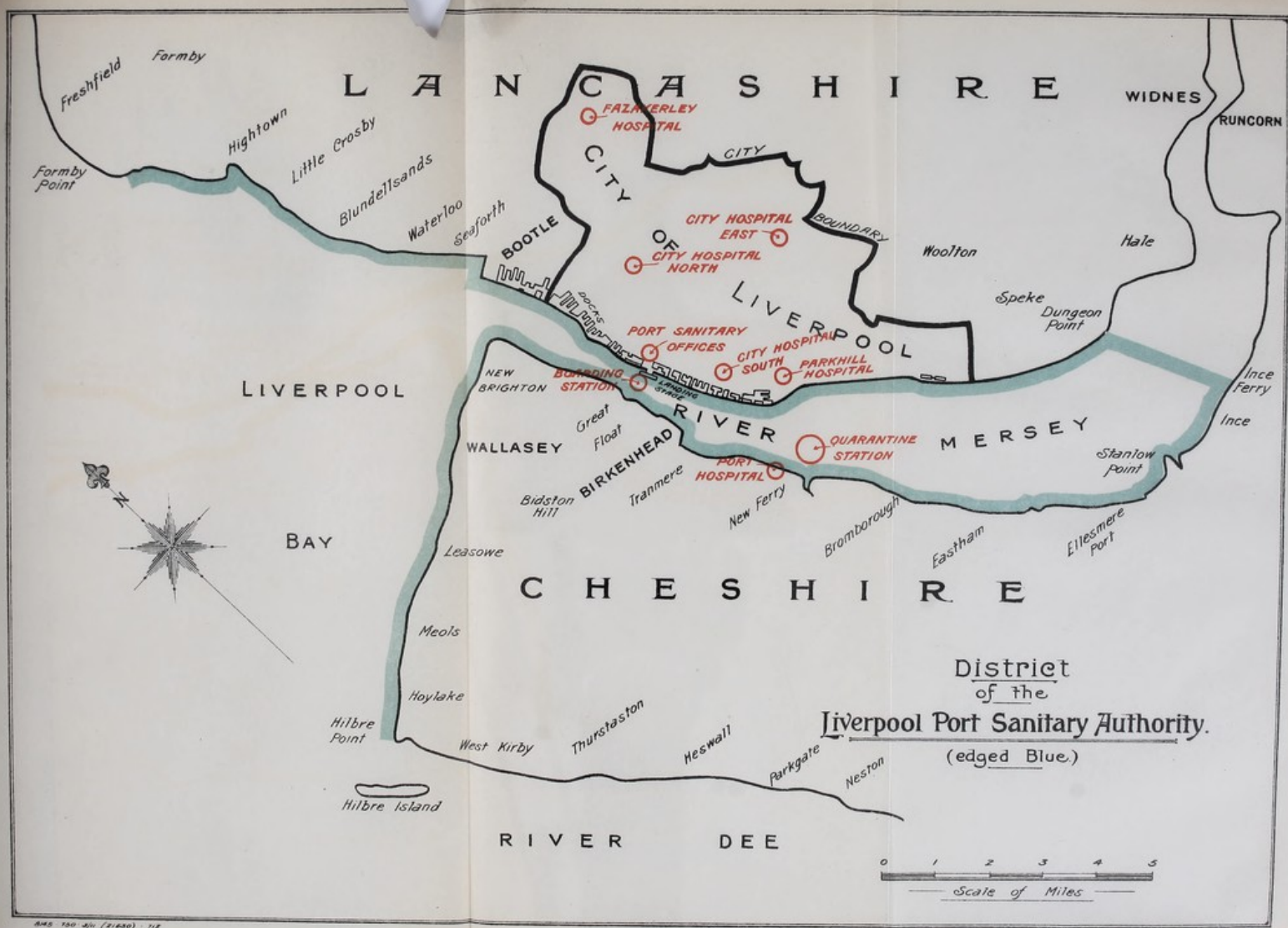


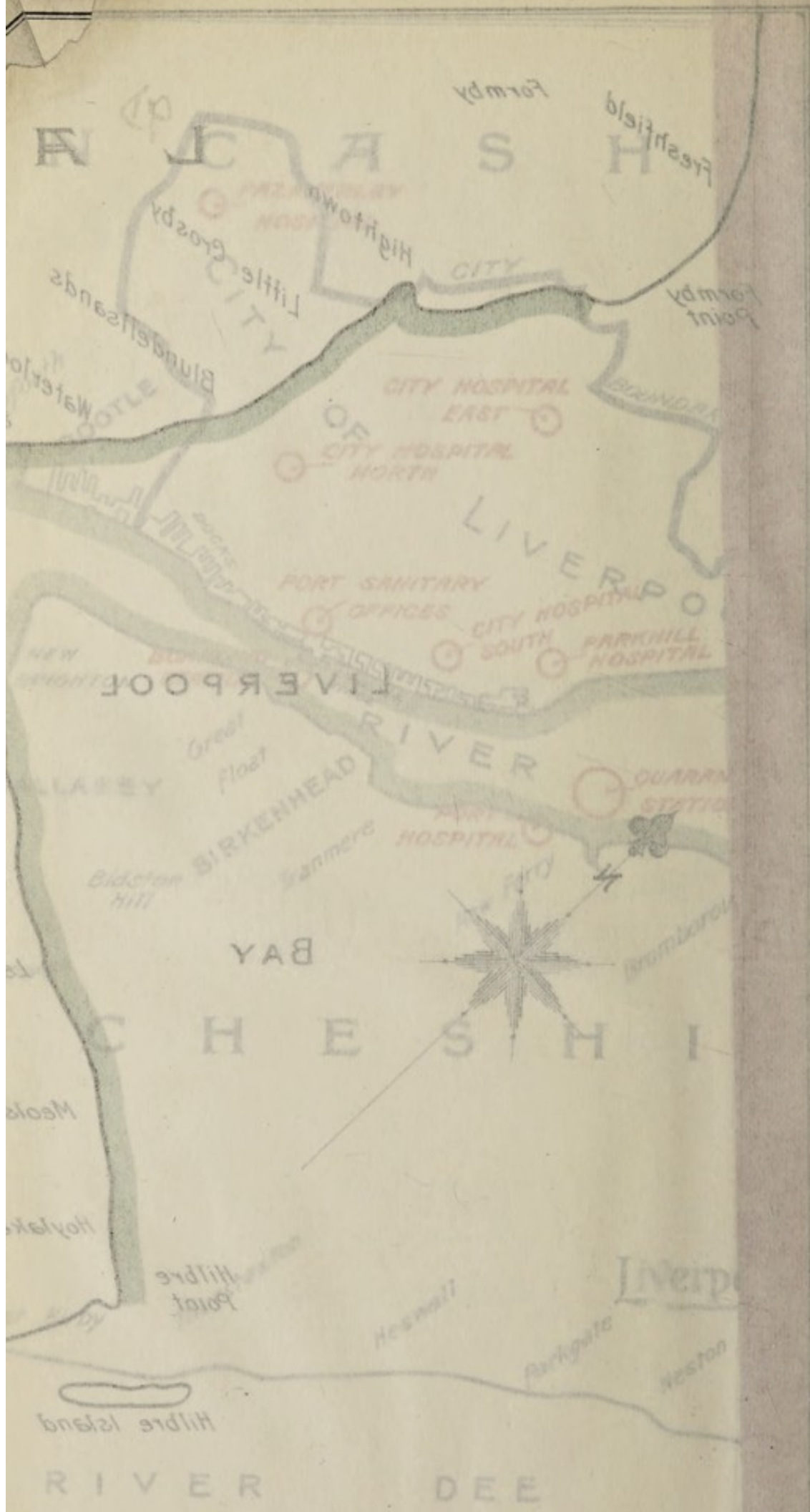


FOOD INSPECTION—EXAMINATION OF CANNED SALMON.

PORT OF LIVERPOOL.







W E A S H

Little Grosby
Blundell Sands
High Town
City
Freshfield
Point

CITY HOSPITAL EAST
CITY HOSPITAL NORTH
BIRKENHEAD

LIVERPOOL
PORT SANITARY OFFICES
CITY HOSPITAL SOUTH
PARKHILL HOSPITAL

LIVERPOOL
Great Float
BIRKENHEAD
THOMPSON HOSPITAL
QUARRIES

BAY
Biddon Hill
Hill
Hill
Hill

W E A S H

Hill
Point
Hill
Hill

LIVERPOOL
Hill
Hill
Hill

RIVER DEE