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Cardiff 1937

PORT HEALTH SERVICE.

I.—CONSTITUTION, LIMITS OF JURISDICTION, ETC., OF THE CARDIFF PORT HEALTH AUTHORITY.

The Cardiff Port Sanitary (now Health) Authority was constituted in 1882 by a Provisional Order of the Local Government Board (now the Ministry of Health), which was made under section 287 of the Public Health Act, 1875. By a Provisional Order, dated 27th July, 1893, the limits of jurisdiction of the Authority were extended, and on 15th September, 1894, an Order, which came into operation on 9th November, 1894, was made constituting the Authority permanently.

Section 5 of the Public Health Act, 1936, which came into operation on 1st October, 1937, provided that Port Sanitary Districts and Port Sanitary Authorities constituted under any previous Act are to be known as and styled Port Health Districts and Port Health Authorities. The Cardiff City Council, as the Cardiff Port Health Authority, on 26th July, 1937, decided to ask the Minister of Health to make an Order amending the Order constituting the Authority, so as to conform with the Local Government Act, 1933, and the Public Health Act, 1936.

Under the Order of 1894 the Council of the Borough (now City) of Cardiff was constituted the Port Sanitary Authority for the area. The Order provided that the "Authority may from time to time appoint Committees consisting of members of such Authority for the exercise of any powers, which, in the opinion of such Authority, can be properly exercised by Committees, but the acts of every such Committee shall, unless otherwise directed by the Port Sanitary Authority, be submitted to such Authority for approval." The Order also provided "that a Committee so appointed shall in no case be authorised to borrow money or to issue any precept for contributions or to enter into any contract."

The jurisdiction of the Authority extends to so much of the Port of Cardiff as is comprised within the following lines:—"A straight line drawn south from the seaward extremity of the common boundary of the Parishes of Sully and Lavernock to the boundary of the said Port and a line following and coincident with the boundary of the said Port from its commencement at the River Rumney to the point at which the straight line firstly hereinbefore mentioned meets such boundary, together with the water of the said Port of Cardiff within such limits, and the place or places for the time being appointed as the Customs Boarding Station or Stations for such part of the said Port, and every other place for the time being appointed for the mooring or anchoring of ships for such part of the said Port under any regulations for the prevention of the spread of diseases issued under the authority of the Statutes in that behalf, and the docks, basins, harbours, creeks, rivers, channels, roads, bays and streams belonging to such part of the said Port." The district therefore includes the waters contiguous to Penarth Urban and Cardiff Rural Districts.

The Authority have all the powers, rights, duties, capacities, liabilities and obligations of an Urban Sanitary Authority under certain sections of the Public Health Acts "so far as those sections are applicable to waters within the jurisdiction of" the Authority "or to ships coming or being within the said jurisdiction, or to persons upon any such ship or brought by any such ship within the said jurisdiction, or to goods or things upon any such ship, or to goods or things landed from any such ship, and being within the said jurisdiction, and which in the opinion of the said Authority or their Medical Officer of Health requires to be disinfected or destroyed."

II.—SHIPPING ENTERING THE PORT.

The following table (compiled from information kindly supplied by H.M. Collector of Customs) shows the annual number of arrivals and tonnage of vessels since 1928 :—

Year	NUMBER OF ARRIVALS			TONNAGE		
	From Foreign	Coastwise*	Total	From Foreign	Coastwise*	Total
1928	3,205	4,530	7,735	3,389,525	1,695,890	5,085,415
1929	3,531	4,601	8,132	3,652,185	1,891,215	5,543,400
1930	3,210	4,368	7,578	3,182,124	1,820,133	5,002,307
1931	2,433	4,271	6,704	2,467,542	1,689,505	4,157,047
1932	2,089	4,401	6,490	2,337,218	1,702,412	4,039,630
1933	1,903	4,388	6,291	2,017,207	1,778,635	3,795,842
1934	1,791	4,567	6,358	1,891,385	1,855,569	3,749,954
1935	1,804	4,137	5,941	1,935,007	1,939,521	3,874,528
1936	1,729	4,244	5,973	1,752,174	2,007,477	3,759,651
1937	1,876	4,601	6,477	1,887,637	2,265,038	4,152,675

The number and tonnage of vessels entering the port (including Penarth) inspected by officers of the Port Health Authority during 1937 are set out below :—

Ministry of Health Table A.

	Number	Tonnage	Number Inspected by		Number reported defective	Number of Vessels on which defects were remedied	Number of Vessels reported as having or having had during the voyage infectious disease on board	
			Medical Officer	Sanitary Inspector				
From Foreign	Steamers	1,526	1,737,132	78	547	268	236	14
	Motor	243	138,984	14	71	10	6	—
	Sailing	101	9,437	5	16	—	—	—
	Fishing	6	2,084	—	—	—	—	—
Total Foreign	1,876	1,887,637	97	634	278	242	14	
Coastwise	Steamers	1,479	1,800,901	6	467	215	200	11
	Motor	323	184,457	—	47	12	8	—
	Sailing	55	8,761	—	3	1	—	—
	Fishing	335	38,717	—	17	6	6	—
Total Coastwise	2,192	2,032,836	6	534	234	214	11	
Total Foreign and C'stwise	4,068	3,920,473	103	1,168	512	456	25	

* Including tugboats, sand barges, pleasure steamers, etc.

The following table shows the number of vessels entering the port which were dealt with by the department each month during 1937:—

Month	From Foreign	Coastwise	Total
January	139	204	343
February	149	176	325
March	173	199	372
April	157	187	344
May	147	149	296
June	156	180	336
July	157	181	338
August	146	174	320
September	162	179	341
October	165	198	363
November	159	189	348
December	166	176	342
Total	1,876	2,192	4,068

The nationalities of the several types of vessels entering the port which were dealt with by the department during 1937 are shown in the following table :—

Nationality	Steam	Motor	Sailing	Total
American (U.S.A.)	2	—	1	3
Belgian	22	—	—	22
Brazilian	1	—	—	1
British	2,273	323	55	2,651
Chinese	3	—	—	3
Danish	72	2	—	74
Dantzian	1	—	—	1
Dutch	9	84	—	93
Egyptian	3	—	—	3
Esthonian	65	—	—	65
Finnish	32	—	—	32
French	184	98	99	381
German	43	—	—	43
Greek	113	1	—	114
Hungarian	4	—	—	4
Irish	52	17	1	70
Italian	27	—	—	27
Japanese	2	—	—	2
Latvian	24	—	—	24
Norwegian	181	12	—	193
Portuguese	8	2	—	10
Rumanian	2	—	—	2
Russian	16	5	—	21
Spanish	45	1	—	46
Swedish	140	21	—	161
Yugo-Slavian	22	—	—	22
Total	3,346	566	156	4,068

III.—CHARACTER OF TRADE.

Passenger Traffic.—The passenger traffic at the port is relatively small and casual and cannot be classified in the form prescribed by the Ministry of Health (*Table B*). The numbers of inward and outward passengers, all of whom travelled by cargo vessels, were 259 and 137 respectively.

Cargo Traffic.—The principal imports are iron ore, pitwood, fruit, vegetables, grain and provisions. The principal exports are coal, coke, patent fuel and flour. Amongst the countries and places with which the port trades mainly are Spain, France, Portugal, Italy, Norway, the Baltic Ports, United States of America, Argentina, Brazil, Canada and North Africa.

The following figures regarding imports and exports during 1928-37 have kindly been supplied by the Chief Docks Manager :—

Year	Imports (tons)	Exports (tons)
1928	1,730,940	8,970,143
1929	1,981,165	10,144,026
1930	1,711,970	8,963,328
1931	1,451,436	7,543,488
1932	1,185,010	6,944,230
1933	1,179,451	6,482,230
1934	1,250,725	6,584,936
1935	1,274,694	6,631,882
1936	1,560,034	5,530,620
1937	1,781,516	6,281,142

IV.—WATER SUPPLY.

The water supply for the port and shipping is derived entirely from the Cardiff Corporation supply by means of hydrants installed at convenient points.

Section 75 of the Cardiff Corporation Act, 1894, provides that "where the Medical Officer of Health of the Cardiff Port Sanitary Authority is satisfied that the water in any tank, cistern, cask or other fixed receptacle in any ship, vessel or boat within the district of that authority, used or likely to be used by man for drinking or domestic purposes, is so polluted as to be injurious to health, the Medical Officer of Health of such Authority may cause to be emptied and cleansed any such tank, cistern, cask or other fixed receptacle." This simplifies the procedure, because under section 140 of the Public Health Act, 1936, an order of a court of summary jurisdiction would first have to be obtained.

During the year, 119 samples of drinking water from ships were submitted to the Cardiff and County Public Health Laboratory for bacteriological examination, the results being as follows:—

Satisfactory	....	....	....	99
Moderate purity	....	....	....	15
Doubtful purity	....	....	....	2
Contaminated	....	....	....	3
Total				119

Notices were served on the masters of the vessels having contaminated water or water of doubtful purity on board, and in all instances the tanks were emptied, cleansed, and refilled at this port.

V.—PORT SANITARY REGULATIONS, 1933.

The arrangements made for the operation of the Port Sanitary Regulations, 1933 were fully described in the annual report for 1933.

Wireless Installations.—The results of inquiries made during the year regarding the number of vessels carrying wireless installations (excluding vessels under 500 net registered tons) are shown in the following table:—

	Vessels arriving		Total
	From Foreign	Coastwise	
With Wireless	837	624	1,461
Without Wireless	269	140	409
Total	1,106	764	1,870

These inquiries have been undertaken since 1926, and it will be seen from the following table that there has been a slight increase in the proportion of vessels with wireless installations arriving at this port:—

Year	Percentage of Vessels with Wireless Installations		
	From Foreign	Coastwise	All Arrivals
1926	67·3	52·1	63·9
1927	75·6	74·8	75·4
1928	78·6	67·0	75·4
1929	74·8	68·8	73·2
1930	69·9	72·0	70·5
1931	71·1	77·2	72·9
1932	67·1	69·2	67·8
1933	67·9	77·5	71·4
1934	69·7	77·8	72·8
1935	68·4	78·8	72·4
1936	75·2	81·3	77·8
1937	75·7	81·7	78·1

● *Cases of Infectious Disease landed from Vessels.*—The following table shows the nature of eight cases of notifiable infectious diseases landed from vessels during the year :—

Ministry of Health Table C.

Disease	Number of Cases during 1937		Number of Vessels concerned	Average Number of Cases for previous 5 years
	Passengers	Crew		
Pneumonia	—	1	1	0·6
Malaria	—	2	2	7·6
Tuberculosis	—	5	5	2·8

The cases referred to in the above table were dealt with as follows :—

Disease	Admitted to Royal Hamadryad Seamen's Hospital	Allowed to return Home	Treated aboard Ship	Total
Pneumonia	1	—	—	1
Malaria	—	1	1	2
Tuberculosis	4*	—	1	5
Total	5	1	2	8

* Three of these were subsequently repatriated.

Other Cases of Infectious Disease.—Nine other cases of infectious disease that were dealt with by the port health staff were ascertained to fall properly within the province of urban administration and were therefore referred to the districts to which they belonged, as follows :—

Disease	Cardiff	Barry	Total
Pneumonia	1	—	1
Malaria	2	1	3
Tuberculosis	5	—	5
Total	8	1	9

Cases of Infectious Disease occurring on Vessels during the Voyage but disposed of prior to Arrival.—Nineteen cases of infectious disease were reported to have occurred on 17 vessels during the voyage and were disposed of prior to arrival.

Ministry of Health Table D.

Disease	Number of Cases during 1937		Number of Vessels concerned	Average Number of Cases for previous 5 years
	Passengers	Crew		
Pneumonia	—	5	5	1·2
Dysentery	—	1	1	0·4
Malaria	—	11	9	6·8
Tuberculosis	—	2	2	2·4

Cleansing and Disinfection.—Thirty-seven seamen discovered to be suffering from scabies were treated at the Cleansing Station belonging to the Cardiff City Council, their clothing being disinfected at the Disinfecting Station, which is situated adjacently. One-hundred and fifty-three vessels were reported to be infested with bugs, and, after inspection, notices were served requiring the masters to take all necessary steps to eradicate them. Verminous or infected beds to the number of 1,377 were destroyed.

Venereal Diseases.—The following tabular statement shows the number of cases of venereal diseases dealt with at the special treatment centre for seamen at the Royal Hamadryad Seamen's Hospital each year since 1928 :—

Year	Persons attending at the Centre for the First Time					Total Attendances	Aggregate Number of In-patient Days
	Syphilis	Soft Chancre	Gonorrhoea	Conditions other than Venereal	Totals		
1928	205	83	344	14	646	15,347	3,195
1929	239	96	343	21	704	15,027	2,093
1930	235	112	367	17	731	12,670	1,639
1931	176	84	209	18	487	9,853	1,372
1932	198	95	297	19	609	10,004	1,707
1933	194	86	255	14	549	9,918	2,220
1934	190	90	285	25	590	9,717	2,155
1935	186	80	295	28	589	9,674	2,261
1936	164	93	324	20	601	9,455	2,312
1937	109	113	346	32	600	9,944	2,407

The treatment centre forms part of the scheme of the Cardiff City Council for the diagnosis and treatment of venereal diseases, and further details of the work undertaken during 1937 are contained in the report on the general health service of the city.

Twenty cases of venereal disease came to the knowledge of officers of the Authority during the year and were recommended for treatment at the centre.

Psittacosis.—The number of parrots dealt with under the Parrots (Prohibition of Import) Regulations, 1930, with the object of preventing the introduction of psittacosis, was 53.

VI.—MEASURES AGAINST RODENTS.

It is a routine duty of inspectors to examine all vessels carefully for evidence of rat infestation. Deratisation of vessels is carried out by sulphur dioxide or hydrocyanic acid gas, the work being undertaken by private contractors under the supervision of officers of the department. During the year, 1,331 rats were destroyed by this method, and, of these, 328 were submitted to the Cardiff and County Public Health Laboratory for examination for the detection of plague.

During 1937 the number of deratisation certificates issued was 121 and the number of deratisation exemption certificates issued was 288, making a total of 409. The fees received by the Port Health Authority in respect of certificates during the year amounted to £773 6s. 6d.

On all vessels from plague-infected ports and on all grain-laden vessels arriving at the port a rat-catcher is employed. By this means 365 rats were caught, 94 of which were examined for plague.

In order to prevent the passage of rats from ships to the shore, the use of rat-guards on mooring ropes is insisted upon, and gangways are raised at night-time whenever possible. Advice regarding the rat-proofing of vessels is given to masters and other officers of ships.

Systematic visits are paid by inspectors to quays, wharves and warehouses in the vicinity of the docks, and owners and occupiers are advised as to the best means of eradicating rodents. In most instances warehouses are reasonably rat-proof, possessing concrete floors and sliding, close-fitting doors. The importance of rendering all buildings near the docks rat-proof is constantly emphasised on owners and occupiers by the inspectors.

Extensive baiting around the docks is undertaken systematically by the dock owners (the Great Western Railway Company) and by owners and occupiers of premises in the vicinity of the docks under the supervision of officers of the department. During the year, 190,409 poison baits were laid and 707 rats and 32 mice were found dead as a result of these measures.

For the purpose of surveying the area around the docks for rats periodically, the district is divided into four areas, as follows :—

- No. 1. Penarth Dock, Windsor Slipway to Glamorganshire Canal Entrance.
- No. 2. Glamorganshire Canal, West Dock to West Side of East Dock.
- No. 3. East Side of East Dock to North Side of Roath Dock.
- No. 4. South Side of Roath Dock, Roath Basin and Queen Alexandra Dock.

A rat-catcher is engaged for a period of one week on each area. Traps are set and the live rats caught are submitted to the Department of Zoology of the National Museum of Wales for classification and for identification of their parasitic fleas and later to the Cardiff and County Public Health Laboratory to be examined for plague.

The whole district is surveyed in this way at least once every four weeks, and valuable information is being obtained as to the prevalence of rats, their species and the extent of their infestation by fleas. During the year, 61 rats were caught under this scheme, of which 19 were submitted for classification and for examination for plague.

Leaflets containing full information regarding deratisation of ships are issued to (a) shipowners and shipping agents and (b) fumigation contractors.

The following table shows the numbers of deratisation and deratisation exemption certificates issued during each year since 1929 :—

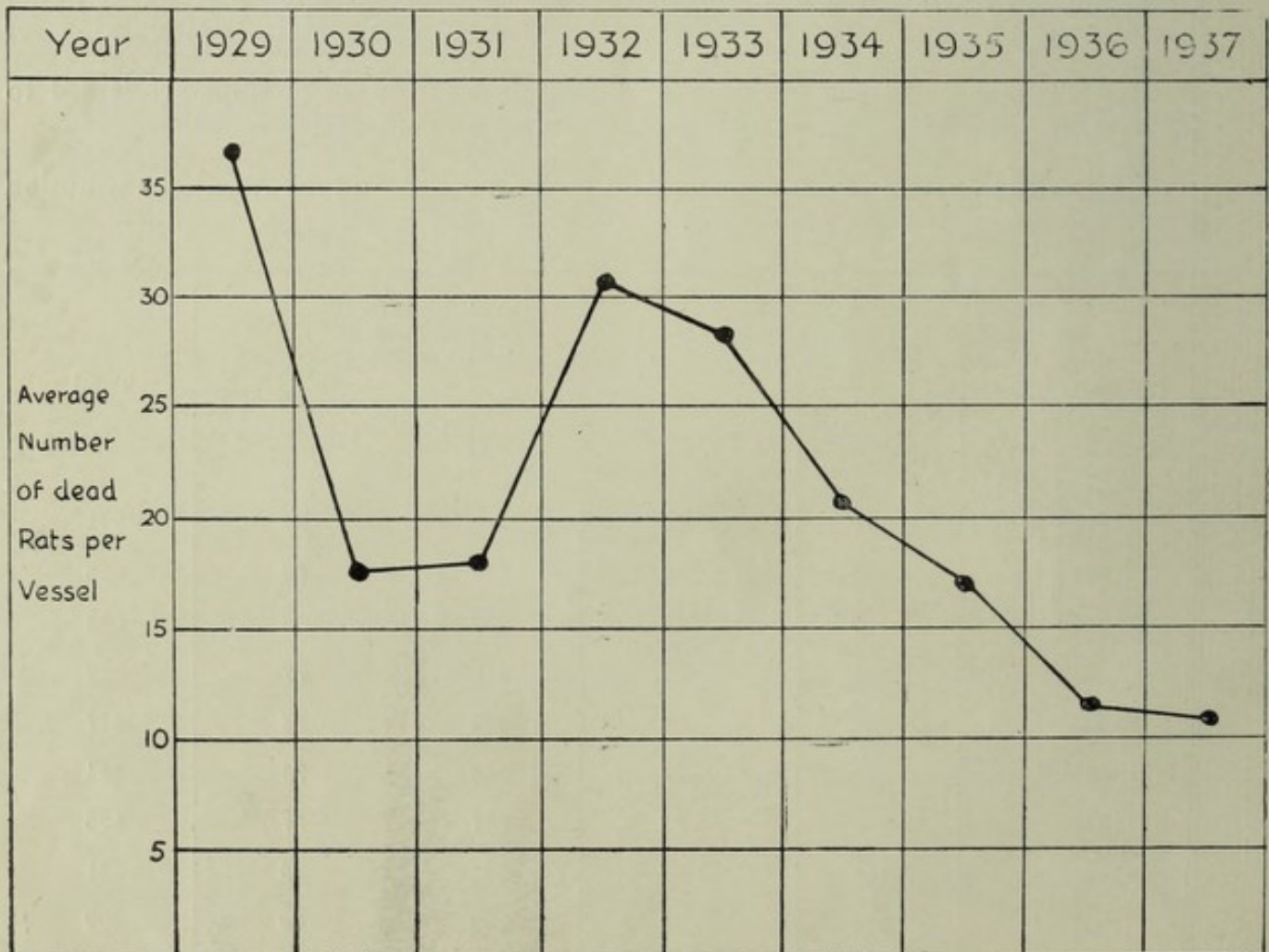
Year	Deratisation Certificates		Deratisation Exemption Certificates		Total
	Number	Percentage	Number	Percentage	
1929	181	62	110	38	291
1930	236	36	420	64	656
1931	195	32	407	68	602
1932	121	23	411	77	532
1933	124	26	353	74	477
1934	126	28	328	72	454
1935	109	23	357	77	466
1936	126	30	295	70	421
1937	121	30	288	70	409

The increase in the numbers during 1930 was due to the effect of the Public Health (Deratisation of Ships) Regulations, 1929, which became operative on 1st January, 1930, but which have since been replaced by the Port Sanitary Regulations, 1933.

The following table shows the number of fumigations of vessels, the total number of dead rats found after fumigation and the average number of dead rats found per vessel during each of the years 1929-1937 :—

Year	Number of Fumigations of Vessels	Total number of Rats found dead after Fumigation	Average Number of dead Rats found per Vessel
1929	181	6,697	37·00
1930	236	4,241	17·97
1931	195	3,530	18·10
1932	121	3,725	30·79
1933	124	3,532	28·48
1934	126	2,584	20·51
1935	109	1,908	17·50
1936	126	1,517	12·04
1937	121	1,331	11·00

Diagram showing the decline in the average number of dead rats found per vessel after fumigation since 1929 :—



Ministry of Health Table G.

MEASURES OF RAT DESTRUCTION ON PLAGUE "INFECTED" OR "SUSPECTED" VESSELS OR VESSELS FROM PLAGUE-INFECTED PORTS ARRIVING IN THE PORT DURING THE YEAR.

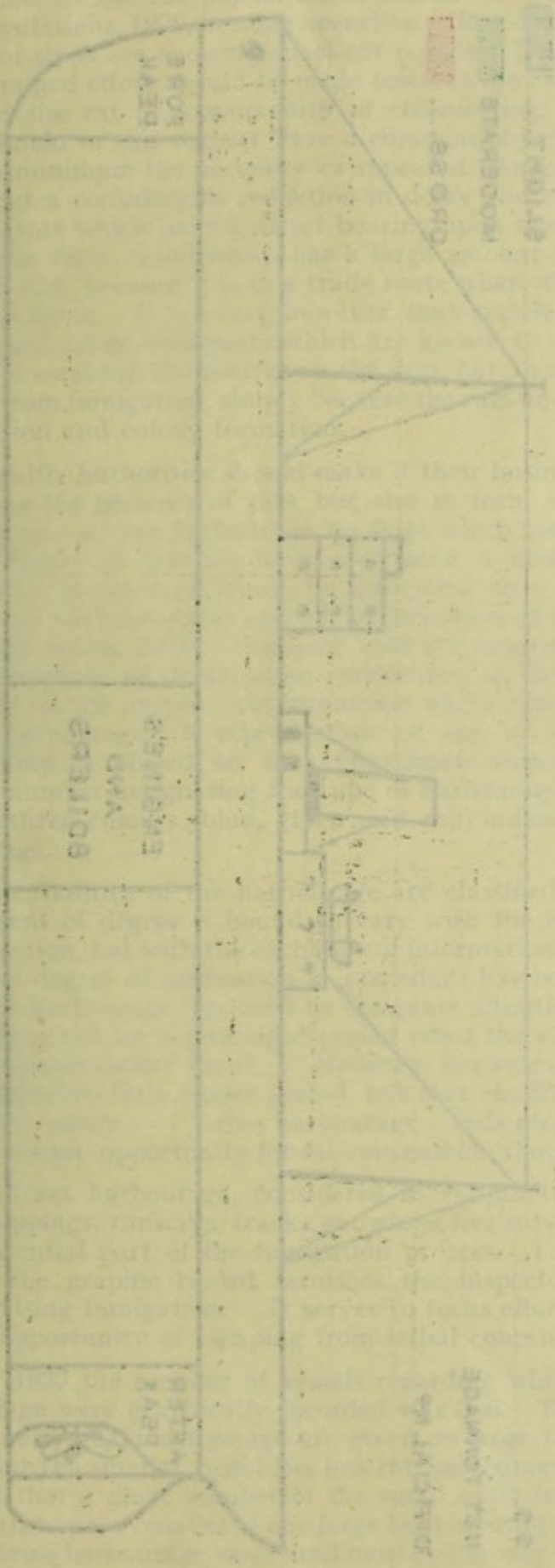
Total Number of such Vessels arriving	Number of such Vessels fumigated by SO ₂	Number of Rats killed	Number of such Vessels fumigated by HCN	Number of Rats killed	Number of such Vessels on which trapping, poisoning, &c., were employed	Number of Rats killed	Number of such Vessels on which measures of Rat destruction were not carried out
1	3	3	4	8	6	7	8
89	4	154	2	74	10*	162	78

*Three of these were also fumigated by SO₂ and two by HCN and are included in columns 2 and 4.

Ministry of Health Table H.

DERATISATION CERTIFICATES AND DERATISATION EXEMPTION CERTIFICATES ISSUED DURING THE YEAR.

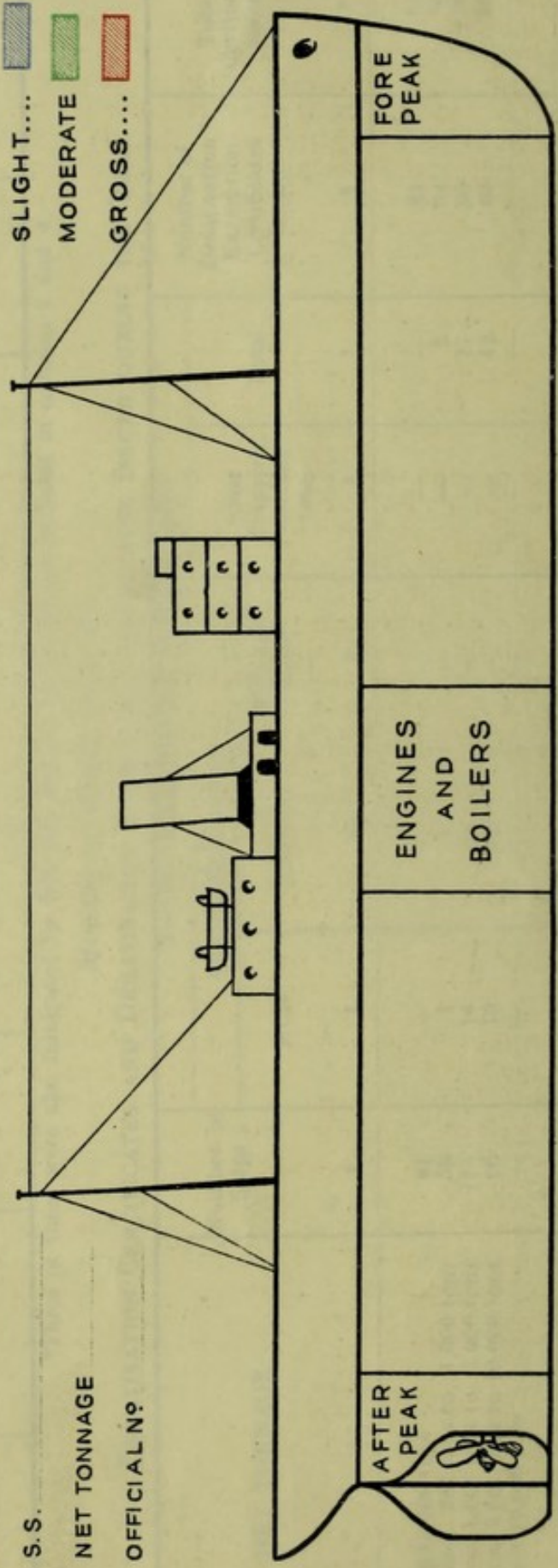
NET TONNAGE	Number of Ships	Number of Deratisation Certificates issued						Total Certificates Issued
		After fumigation with		HCN and Sulphur	After Trapping, Poisoning, etc.	Total	Number of Deratisation Exemption Certificates Issued	
		HCN	Sulphur					
1	2	3	4	5	6	7	9	
Ships up to 300 tons	81	—	—	—	—	—	81	
" from 301 tons to 1,000 tons	56	1	1	—	—	2	56	
" from 1,001 tons to 3,000 tons	176	14	3	—	—	77	176	
" from 3,001 tons to 10,000 tons	66	10	32	—	—	42	96	
" over 10,000 tons	—	—	—	—	—	—	—	
Total	<09	25	96	—	—	121	<09	



- | | | |
|---------------------------|---------------------------|----------------------|
| 1. Fuselage structure | 11. Landing gear | 21. Propellers |
| 2. Primary structure | 12. Landing gear doors | 22. Propeller hubs |
| 3. Secondary structure | 13. Landing gear fairings | 23. Propeller blades |
| 4. Landing gear structure | 14. Landing gear doors | 24. Propeller tips |
| 5. Cabin structure | 15. Landing gear doors | 25. Propeller hubs |
| 6. Cabin structure | 16. Landing gear doors | 26. Propeller blades |
| 7. Cabin structure | 17. Landing gear doors | 27. Propeller tips |
| 8. Cabin structure | 18. Landing gear doors | 28. Propeller hubs |
| 9. Cabin structure | 19. Landing gear doors | 29. Propeller blades |
| 10. Cabin structure | 20. Landing gear doors | 30. Propeller tips |

1. Ceiling over tank top and bilges.
2. Cased spaces at ship's side in lower holds and 'tween decks.
3. Wooden linings in holds and 'tween decks.
4. Bulkhead casings.
5. Insulated holds and 'tween decks.
6. Casings around stanchions.
7. Vertical pipe casings.
8. Horizontal pipe casings.
9. Forepeak stores.
10. Engineers' storerooms.
11. Refrigerating rooms and ice boxes.
12. Lifebelt boxes.
13. Firehose boxes.
14. Provision storerooms.
15. Potato lockers.
16. Underdeck casings.
17. Overhead insulation.
18. Galley fixtures.
19. Lockers in saloon.
20. Lockers in officers' berths.
21. Washstands.
22. Screens over steam heaters.
23. Lockers in alleyways.
24. Double bulkheads.
25. Casings in crew accommodation.
26. Ventilating trunks.
27. Raised wooden platforms in shaft alley.
28. Lockers.
29. Afterpeak stores.
30. Raised transom in poop.
31. Lifeboats.

SLIGHT....
 MODERATE
 GROSS....



S. S.
 NET TONNAGE
 OFFICIAL N^o

Graphic Method for Recording Rat Harbourage on Vessels.—There has been a very marked decline in the rat population of vessels since the Public Health (Deratisation of Ships) Regulations, 1929, became operative. Regular inspection and, when necessary, fumigation of ships are showing excellent results. Nevertheless, it is highly desirable that a determined effort should be made towards the eradication of conditions on ships which afford the rat an opportunity of colonisation. The port sanitarian and the shipowner should in this respect have a common object, for by reducing the rat harbourage to a minimum the necessity of repeated fumigation will be obviated, thereby bringing about a considerable reduction in delay and expense to shipping. There are numerous factors which have a direct bearing upon the rat population on ships. It is not uncommon for a vessel which has a large amount of harbourage repeatedly to be found free of rats, because it is in a trade route where the opportunities for rats to gain access are not great. It is a fact, however, that vessels which are well rat-proofed may carry cargo and trade with ports which are known to offer the maximum opportunity for the rats to establish themselves on the ship, but, in spite of this, they have repeated exemptions from fumigation, simply because the rats find conditions on the ship inimical to reproduction and colony formation.

Port Health Authorities should make it their business not only to examine vessels thoroughly for the presence of rats, but also to form a very good estimate as to the potential sources of rat harbourage on ships which visit their ports. Certain ports in the United States of America have instituted a method of recording in a graphic manner the rat harbourage found, by indicating on a sketch of the vessel the actual sites where rat harbourage exists. A modification of this procedure has been carried out in Cardiff during 1937. The port sanitary inspectors, when carrying out inspections for exemption or deratisation certificates, at the same time record, on special cards devised for the purpose, the situations where rats are likely to find temporary or permanent harbourage. A reproduction of one of the cards faces this page. A coloured stamp is placed on the approximate situation of the harbourage, and the appropriate number designating the type of harbourage is placed over the stamp. The stamp is in three colours (blue, green and red) indicating slight, moderate and gross rat harbourage.

The potentialities of the harbourage are classified as slight, moderate and gross. The assessment of degree is bound to vary with the individual inspector who carries out the inspection, but with the exchange of information amongst the different inspectors a very useful degree of unification in procedure has been established. In general the term "slight harbourage" is used to designate situations where a rat is not likely to remain undisturbed for a prolonged period when the ship is in normal traffic or where there is not much shelter for it. "Moderate harbourage" indicates that the rat may remain undisturbed for a longer period, but that conditions are not ideal for the establishment of a colony. "Gross harbourage" indicates that conditions prevail which would offer ample opportunity for rat colonisation should the rodents once gain access.

Definition of rat harbourage, considered in conjunction with rat infestation in the forms of droppings, runways, tracks, gnawings, live rats, dead rats, nests and rat odour, forms an essential part of the fumigation process. The precise knowledge gained by completing the graphic record furnishes the inspector with invaluable information when supervising fumigation. It serves to focus effort upon the situations that offer the rat an opportunity of escaping from lethal concentration of the fumigant.

During 1937 the number of vessels regarding which the locations and degrees of rat harbourage were graphically recorded was 366. The results for vessels under and over 1,500 net registered tonnage are given on page 13. From the results it will be observed that the smaller vessel has less rat harbourage. This is accounted for largely by the fact that a great number of the small craft have the engines situated astern, while the cargo space consists of one large hold offering a minimum degree of harbourage for rats. Gross harbourage was found most commonly in the following sites in the large and small vessels:—(1) Ceiling over tank top and bilges, (2) cased spaces at ship's side

in lower holds and 'tween decks, (3) wooden linings in holds and 'tween decks, (24) bulkhead casings, (25) casings in crew accommodation, (29) afterpeak stores and (30) raised transom in poop. The presence of (24) double bulkheads in holds is a class of harbourage which has been found almost exclusively in the larger vessels, and unless this is carefully rat-proofed it is a constant source of danger. This type of harbourage is usually on the bulkhead separating the stokehold from the cross bunkerhold, the wooden insulation being so placed to prevent heat damaging cargo in the hold. The warmth seems to attract the rat, and in grain-carrying vessels food is also near; and being so near the stokehold it is within easy reach of water. All these factors have tended to make this harbourage a constant source of trouble.

The system provides a most useful check on the work carried out by each inspector, and certainly provides a stimulus to careful inspection of a vessel before the results are committed to paper in a manner which may be checked so readily. The accumulation of detailed data concerning rat harbourage and checking this against the actual results of fumigation should also provide invaluable information for advice to ship-owners with regard to the best and most practicable methods of rat-proofing vessels.

LOCATION AND DEGREES OF RAT HARBOURAGE.

Site of Harborage	126 Vessels under 1 500 Net Tonnage						180 Vessels over 1 500 Net Tonnage					
	Slight		Moderate		Gross		Slight		Moderate		Gross	
	Number	Percent- age	Number	Percent- age	Number	Percent- age	Number	Percent- age	Number	Percent- age	Number	Percent- age
1. Ceiling over tank top and bilges	8	6.3	13	10.3	69	54.7	3	1.7	22	12.2	141	78.3
2. Cased spaces at ship's side in lower holds and 'tween decks	13	10.3	7	5.5	14	11.1	51	28.3	27	15.0	24	13.3
3. Wooden linings in holds and 'tween decks	4	3.2	9	7.1	23	18.2	11	6.1	14	7.7	54	30.0
4. Bulkhead casings	13	10.3	2	1.6	4	3.2	60	33.3	8	4.4	13	7.2
5. Insulated holds and 'tween decks	—	—	—	—	—	—	5	2.7	1	0.6	2	1.1
6. Casings around stanchions	30	23.8	3	2.4	1	0.8	97	53.8	6	3.3	—	—
7. Vertical pipe casings	46	36.5	4	3.2	1	0.8	112	62.2	11	6.1	—	—
8. Horizontal pipe casings	33	26.2	7	5.5	—	—	86	47.8	9	5.0	—	—
9. Forepeak stores	64	50.8	32	25.4	1	0.8	77	42.8	96	53.3	2	1.1
10. Engineers' storerooms	70	55.5	28	22.2	—	—	80	44.4	93	51.7	1	0.6
11. Refrigerating rooms and ice boxes	10	7.9	10	7.9	—	—	46	25.5	68	37.8	—	—
12. Lifebelt boxes	44	34.9	4	3.2	—	—	113	62.8	10	5.5	—	—
13. Firehose boxes	34	27.0	4	3.2	—	—	109	60.5	9	5.0	—	—
14. Provision storerooms	69	54.7	22	17.4	1	0.8	94	52.2	83	46.1	1	0.6
15. Potato lockers	35	27.7	4	3.2	—	—	95	52.7	27	15.0	—	—
16. Underdeck casings	21	16.6	5	4.0	—	—	99	55.0	18	10.0	—	—
17. Overhead insulation	21	16.6	4	3.2	—	—	74	41.1	13	7.2	—	—
18. Galley fixtures	48	38.1	33	26.2	—	—	50	27.7	101	56.1	—	—
19. Lockers in saloon	48	38.1	43	34.1	1	0.8	48	26.6	119	66.1	1	0.6
20. Lockers in officers' berths	48	38.1	45	35.7	—	—	66	36.6	103	57.2	1	0.6
21. Washstands	27	21.4	32	25.4	—	—	42	23.1	99	55.0	—	—
22. Screens over steam heaters	1	0.8	3	2.4	—	—	3	1.7	9	5.0	—	—
23. Lockers in alleyways	2	1.6	2	1.6	—	—	19	10.5	10	5.5	—	—
24. Double bulkheads	1	0.8	1	0.8	1	0.8	3	1.6	14	7.8	14	7.8
25. Casings in crew accommodation	51	40.5	34	27.0	9	7.1	115	63.9	48	26.6	7	3.8
26. Ventilating trunks	—	—	1	0.8	1	0.8	6	3.3	7	3.8	—	—
27. Raised wooden platforms in shaft alley	18	14.3	33	26.2	—	—	22	12.2	119	66.1	4	2.2
28. Lockers	26	20.6	28	22.2	—	—	31	17.2	87	48.3	—	—
29. Afterpeak stores	27	21.4	20	15.8	3	2.4	63	35.0	61	33.9	35	19.4
30. Raised transom in poop	—	—	3	2.4	6	4.8	3	1.6	38	21.1	34	18.9
31. Lifeboats	40	31.7	60	47.6	—	—	26	14.4	138	76.7	3	1.7

VII.—HYGIENE OF CREW SPACES, ETC.

During the year, 4,068 vessels, with a total tonnage of 3,920,473, were visited by inspectors on arrival or as soon afterwards as practicable. The number of persons in the crews carried by these vessels was 73,987. In addition, 4,270 re-inspections of ships in dock were made, and 512 orders were given to masters and others in connection with nuisances and sanitary defects.

Ministry of Health Table J.

CLASSIFICATION OF NUISANCES.

Nationality of Vessel	Number Inspected during the year	Defects of original construction	Structural defects through wear and tear	Dirt, vermin and other conditions prejudicial to health
British	702	37	596	880
Other Nations	466	72	304	167

The following table shows the number of the defects referred to in the preceding table which were remedied during the year:—

Nationality of Vessel	Defects of original construction	Structural defects through wear and tear	Dirt, vermin and other conditions prejudicial to health
British	17	518	874
Other Nations	25	230	160

The defects and nuisances dealt with during 1937 were as follows:—

Insufficient ventilation	68
„ lighting	16
Defective ventilators	57
„ skylights and deck-lights	20
„ steam heaters, stoves, stove-pipes, etc.	97
„ sanitary conveniences, flushes, etc.	139
„ side ports, deck-prisms, etc.	264
„ bulkheads	10
„ floors	30
„ doors	16
„ bunks and bedsteads	33
„ food-lockers	118
„ baths, wash-hand basins and waste-pipes	42
„ drain pipes	10
„ cable casings	10
„ hawse-pipes	9
Leaking decks	70
Verminous crew quarters	265
Dirty crew quarters	344

Dirty messrooms	91
„ food-lockers	99
„ sanitary conveniences.....	122
„ bathrooms and wash-houses	33
„ fresh-water tanks	10
Foul bilges	5
Foul accumulations	55
Miscellaneous	23
Total	2,056

Owing to more detailed inspections of vessels, greater numbers of structural defects and of conditions attributed to dirt and vermin have been recorded than in previous years.

During 1937 a number of recently constructed vessels arrived at the port, and it is satisfactory to be able to record that on each of them much thought had been directed to improvement in the construction of the accommodation for crew. In these new vessels central heating installation for the heating of berths, messrooms, drying rooms and wash-houses was provided, and improved ventilation and lighting and the provision of separate messrooms, food-lockers, clothes-lockers, oilskin-lockers, wash-houses and water-closets of the pedestal type, with adequate flushing arrangements, were also notable features.

Although the improvement made in the crew accommodation on new vessels is gratifying, there is much leeway to be made up on the older type of vessel. This question is receiving the close attention of the department and, with the co-operation of the Board of Trade, several vessels have been reconditioned in order to bring them as near as possible to the standard laid down for new vessels. The co-operation and assistance of the Principal Officer and the Surveyors of the Board of Trade have been invaluable and are very much appreciated.

VIII.—FOOD INSPECTION.

Examination of imported food is carried out by the food inspectors in the dock-side warehouses and occasionally on board ships.

The principal food imports during the year were from Australia and New Zealand and consisted of beef, mutton, pork, lamb, offal, butter, cheese, flour and fresh and dried fruits. From Canada and United States of America lard, cheese, flour, cereals, canned meats, fruit and fish were imported, and from European countries condensed milk, cheese, bacon, fresh tomatoes, canned tomatoes, dried and canned fruits and vegetables. Additional to these direct imports, large quantities of foodstuffs, transhipped at other ports in the United Kingdom, arrived by coastwise traffic.

A percentage examination of all food is made. If the food examined is found to be in good condition, the whole consignment is released for distribution, but if found to be diseased or unsound the whole consignment is detained until a complete examination is carried out. Diseased and unsound articles of food are destroyed under the supervision of the food inspectors. Samples of foodstuffs are submitted to the Public Analyst and to the Bacteriologist for examination. Importers also carry out a trade examination of their goods in the warehouses under the supervision of the food inspectors.

A preliminary inspection of meat imports is carried out in the transit sheds on the dock-sides, the importers then being allowed to transfer the cargo to the local cold stores, where a further examination is made. The glandular examination of carcasses of mutton and of lamb carcasses weighing over 42 lb. was continued, but very few cases of caseous lymphadenitis were found.

Imported Foodstuffs.—The quantities of various kinds of foodstuffs imported during the year are shown in the following table :—

Description	Tons	cwt.	Bags	Bales	Barrels	Boxes	Miscellaneous
Bacon	—	—	—	3,149	—	—	—
Barley	—	—	1,230	—	—	—	—
Biscuits	—	—	130	—	—	3	76 skips
Butter	—	—	—	—	190	19,660	—
Caraway Seed	—	—	3	—	—	—	—
Cereals	5	—	80	—	—	23,073	—
Cheese	—	—	—	—	—	30,589	—
Chicory	—	—	—	—	—	25	—
Coffee	—	—	28	—	—	100	—
Condiments	—	—	20	—	—	53,185	—
Confectionery	—	—	—	—	—	525	—
Cream, Canned	—	—	—	—	—	6,060	—
Eggs	—	—	—	—	—	110	—
Fat, Edible	—	—	2,024	10	599	4,330	—
Fish, Canned	—	—	—	—	—	566	—
Fish, Dried	—	—	—	41	—	—	—
Fish, Fresh	5,855	14	—	—	—	—	—
Fish, Pickled	59	—	—	—	16	—	—
Fish, Salted	—	—	340	—	—	—	—
Flour	56	—	41,330	—	—	—	—
Fruit, Canned	—	—	—	—	—	34,478	—
Fruit, Dried	—	—	—	—	—	7,100	—
Fruit, Fresh	17	—	—	—	55,418	287,840	250 baskets
Fruit Juice	—	—	—	—	100	—	—
Fruit Pulp	—	—	—	—	199	—	—
Glucose	—	—	—	—	85	—	—
Hops	—	—	—	33	—	—	—
Honey	—	—	—	—	—	1	—
Lard	—	—	—	—	—	28,074	—
Macaroni.....	—	—	—	—	—	5,862	825 packets
Malt	—	—	50	—	—	—	—
Margarine	—	—	—	—	—	32,725	—
Meat, Canned	—	—	—	—	—	12,115	—
Meat, Preserved	—	—	—	—	—	29	—
Milk, Canned	—	—	—	—	118	107,722	—
Milk Dried	—	—	—	—	—	30	—
Nuts	—	—	154	—	—	—	—
Oats, Rolled	—	—	1,467	—	—	43,294	—
Olive Oil	—	—	—	—	14	6	—
Rice	—	—	1,519	—	—	—	—
Salt	—	—	320	—	—	—	—
Sugar	5,870	—	15,467	—	—	300	—
Tomatoes, Canned.....	—	—	—	—	—	7,066	—
Tomato Juice	—	—	—	—	—	25	—
Vegetables, Canned	—	—	—	—	—	77,301	—
Vegetables, Dried	—	—	14,696	—	—	—	—
Vegetables, Fresh	—	—	277,177	—	—	1,439	{ 33,917 baskets
Vegetables, Salted.....	—	—	—	—	1,369	—	{ 12,115 drums
Wheat	85,547	—	—	—	—	—	—
Wine	—	—	—	—	304	4	—
Yeast	—	—	—	—	—	35	—

Imported Meat.—In addition to the foodstuffs already referred to, seven cargoes of frozen meat were imported, the quantities being as follows :—

Carcases of lamb	72,074
Carcases of mutton	15,479
Carcases of pork	3,643
Carcases of veal	68
Quarters of beef	16,692
Quarters of veal	108

Sides of pork	....	....	8
Boneless beef (bags)	....	....	756
Sundries—heart, livers, tongues, etc. (bags)	....	....	681
Calf livers (bags)	....	....	1,382
Ox livers (boxes)	....	....	3,209
Ox kidneys (boxes)	....	....	1,097
Ox tails (boxes)	....	....	967
Offal (boxes)	....	....	20
Offal (bags)	....	....	1,180

The quantities of various kinds of foodstuffs withheld from human consumption during the year were as follows:—

	Tons	cwt.	lb.
Cereals	—	—	10½
Fish, Canned	—	—	1½
Fruit, Canned	2	10	76¼
Fruit, Dried	—	7	65
Fruit, Fresh	81	8	80
Lard	—	—	57
Meat, Canned	—	1	90¾
Meat, Preserved	—	17	111
Milk, Canned	—	3	67½
Milk, Dried	—	4	32
Sugar	1	4	0
Vegetables, Canned	1	16	75
Vegetables, Fresh	119	19	0
Wheat	24	1	102
Total	232	16	96½

Public Health (Imported Food) Regulations, 1925, Public Health (Imported Food) Amendment Regulations, 1933, and Public Health (Preservatives, etc., in Food) Regulations, 1925-27.—During the year, 47 samples of imported food were submitted to the Public Analyst for analysis. The nature, country of origin and number of samples are shown in the following table:—

Nature	Country of Origin	Number of Samples
Cherries, Canned	Italy	1
Dried Apricots	America	1
Dried Figs	Greece	1
Dried Figs	Turkey	2
Dried Peaches	America	1
Lemon Juice	Italy	1
Pea Flour	Scotland	1
Raisins	America	31
Raisins	South Africa	1
Raisins	Spain	1
Sardines	Morocco	1
Sardines	Portugal	1
Sultanas	Greece	1
Sausage Casings	Holland	1
Tomato Ketchup	Canada	1
Tongue, Canned	Germany	1

Forty-two of the samples were reported to be genuine or to contain preservatives within the limits laid down by the Public Health (Preservatives, etc., in Food) Regulations, and five samples of raisins were reported to contain preservatives in excess of the prescribed limits. The consignments of raisins, comprising 950 cases from America, which contained an excess of preservatives were re-exported.

Bacteriological and Chemical Examinations.—Three samples were submitted for bacteriological examination. The nature, country of origin and number of samples are shown in the following table :—

Nature of Sample	Country of Origin	Number of Samples	
		Bacteriological	Chemical
Tongue, Canned	Germany	1	—
Veal, Canned	Denmark	2	—

The sample of canned tongue proved to be approximately sterile, the physical characters being normal. The samples of canned veal showed no evidence of bacterial growth and no gas pressure when opened, and the physical characters were good.

Public Health (Imported Milk) Regulations, 1926.—No fresh milk was imported during the year.

Public Health (Shell-fish) Regulations, 1934.—There are no shell-fish beds or layings within the area under the jurisdiction of the Port Health Authority.

IX.—MISCELLANY.

Medical Inspection of Aliens.—The following is a summary of the work done during the year in connection with the medical inspection of aliens :—

	Total Number.	Number Inspected by Medical Inspectors.
Aliens (excluding alien seamen) landing at the port....	214	100
Aliens refused permission to land by Immigration Officer	17	—
Totals	231	100
Number of vessels carrying alien passengers		74
Number of such vessels dealt with by the Medical Inspector		17
Analysis of aliens landing :—		
Residents returning		2
In transit		6
Visitors		66
Business		97
Seamen		39
Ministry of Labour permit—Males		3
Ministry of Labour permit—Females		1
Coming to settle, not holding Ministry of Labour permit		—
Total		214

Of the 100 aliens medically inspected, 77 who intended taking up employment and remaining in the country over three months and one who came for educational purposes were referred by the Immigration Officer for detailed medical examination.

Diseases of Animals Acts, etc.—The various orders under the Diseases of Animals Acts with reference to the importation of animals were strictly enforced during the year. Two hundred and forty-nine dogs and 628 cats were brought to the port on vessels, and two vessels arrived direct from scheduled countries with three sheep and three pigs on board. All the vessels were visited regularly during their stay in port to ensure that the requirements of the Orders were observed.

One hundred and fifty-nine horses, 65 pit ponies and 2,333 head of cattle were landed at the Imported Animals Wharf during the year from Canada.

Cardiff is one of the comparatively few ports in Great Britain at which live cattle may be imported, being licensed for this purpose by the Board of Agriculture and Fisheries. Every facility is provided for this important branch of the import trade, and the advantages offered at Cardiff have attracted during the past few years many consignments of live cattle from Canada, South Africa, and Ireland.

Considerable extensions have been carried out at the cattle lairs, where modern lairage for 760 fat or 950 light head of cattle is available. New offices have also been provided for the officers of the Ministry of Agriculture and Fisheries and representatives of the various merchants connected with the trade.

Canal Boats.—The Chief Port Sanitary Inspector, who is also Inspector of Canal Boats, has reported that he made 57 inspections of canal boats during the year and found infringements of the Regulations made under the Canal Boats Act, 1877, regarding painting in six instances. Verbal instructions were given, and the infringements in each case were remedied. The number of boats (not propelled by motor) on the register was seven, each with accommodation for two males. The sanitary condition of the canal boats generally was satisfactory.

