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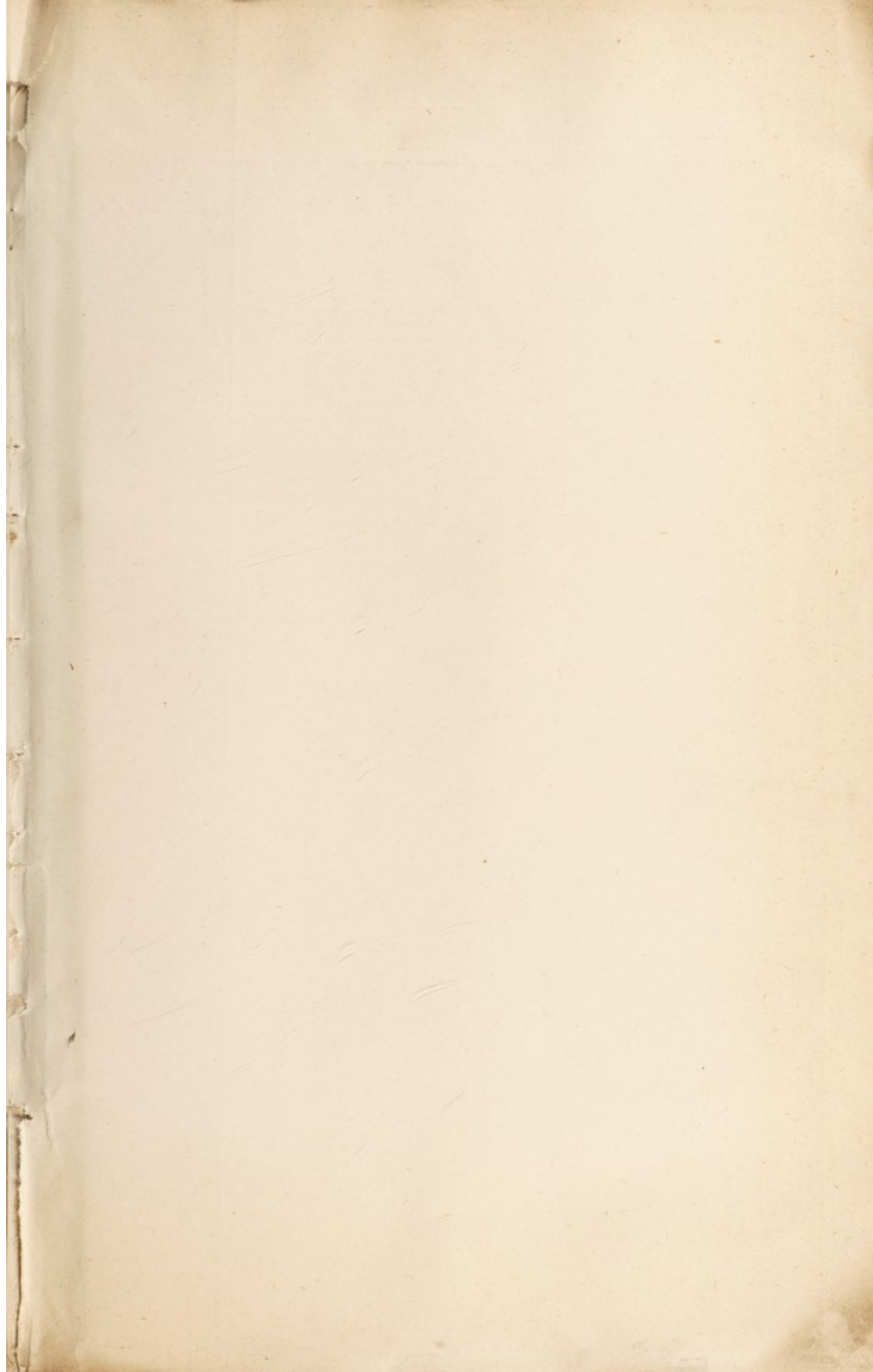
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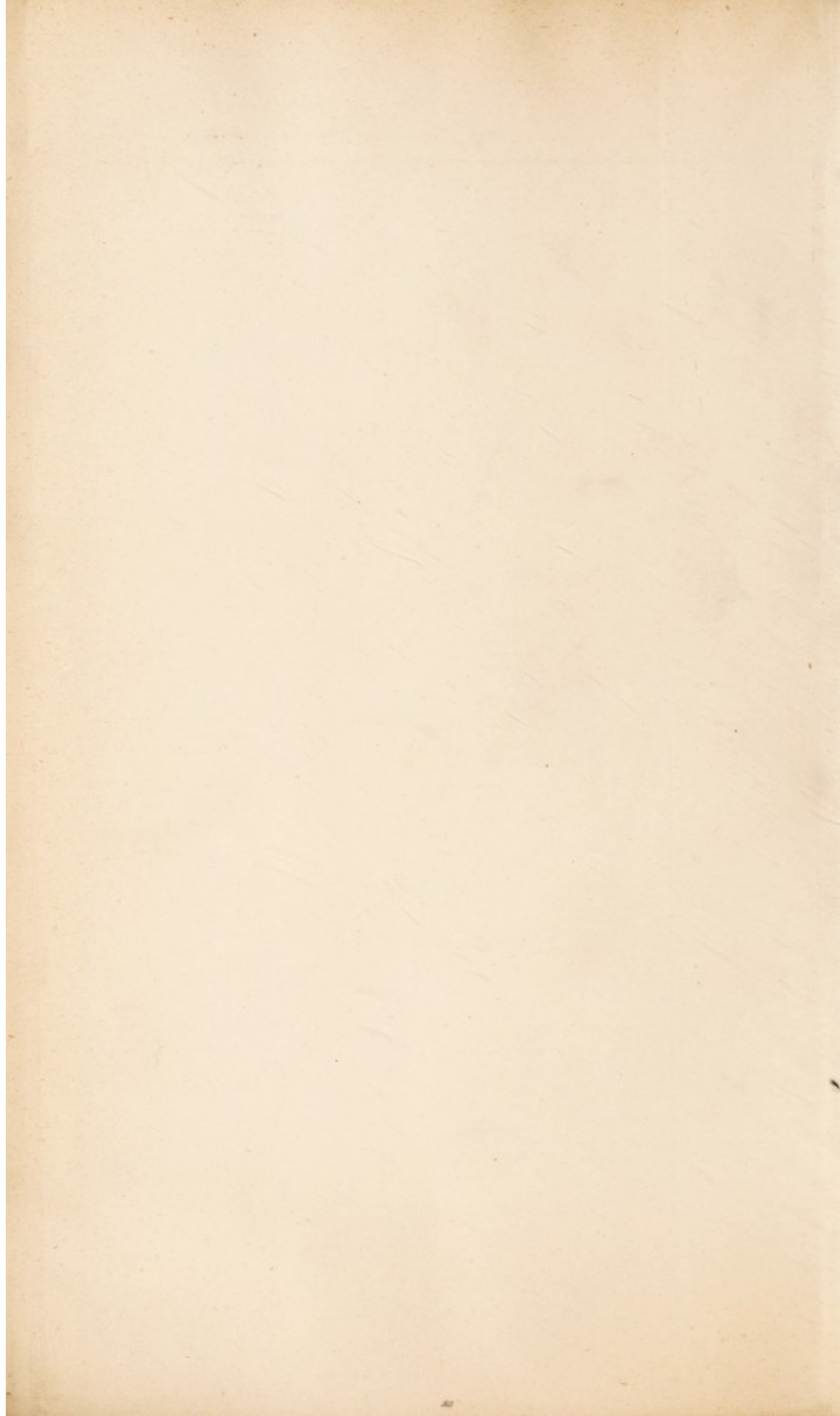
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'SALUS POPULI, SUPREMA LEX.'



REPORT
ON
THE HEALTH OF
PORTSMOUTH
FOR THE YEAR 1902

BY
A. MEARNS FRASER

M.D. (EDIN. UNIV.) D.P.H. (CAMB. UNIV.)

*Medical Officer of Health,
Medical Superintendent to the Small Pox Hospital,
Medical Officer of Health to the Port of Portsmouth*

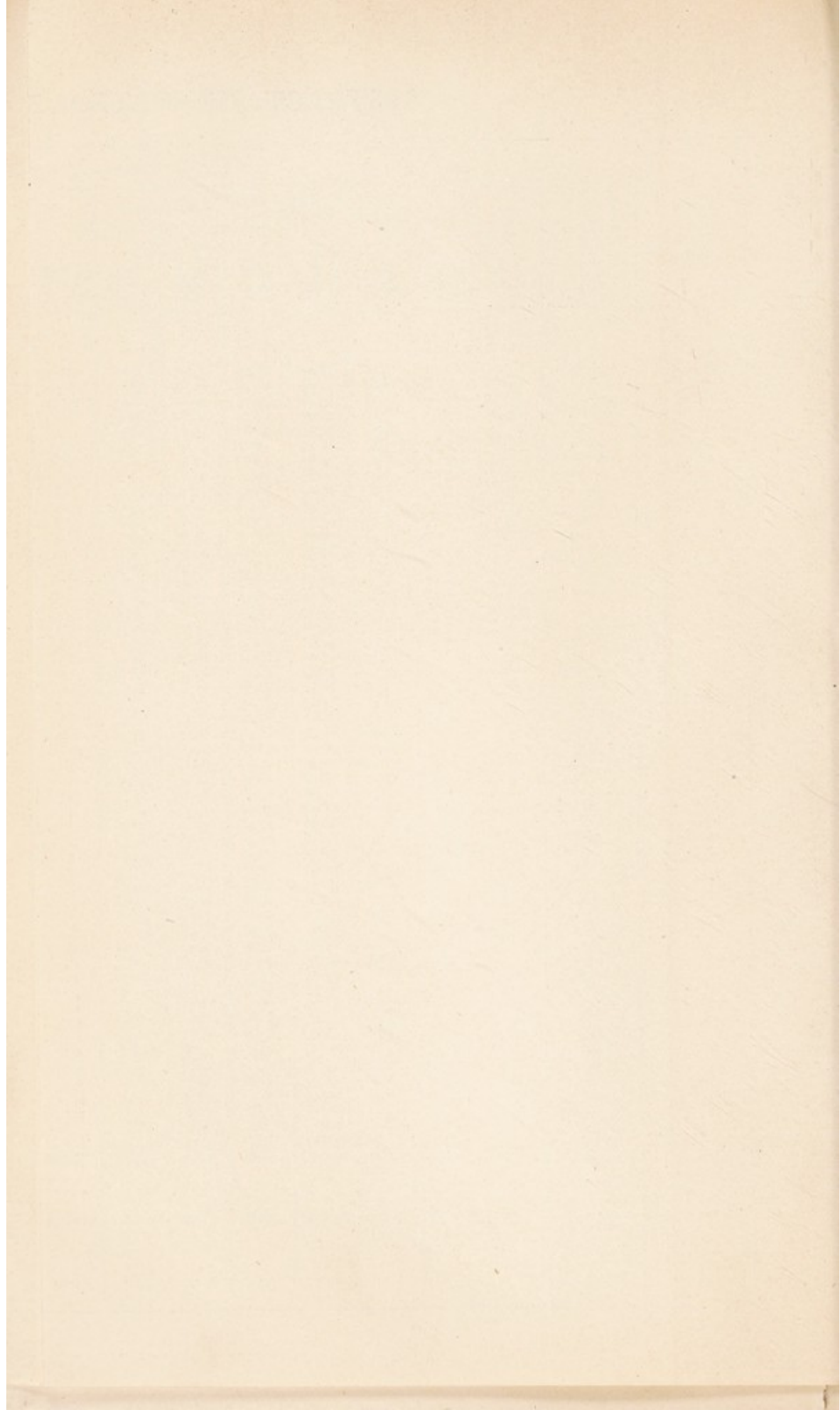
INCLUDING
THE REPORT OF THE PUBLIC
ANALYST :

J. MOORE MURRAY, M.Sc., F.C.S.



ABSTRACT OF METEOROLOGICAL OBSERVATIONS made at Portsmouth during the year 1902.

DATE	Week ending	Barometer reduced to Sea Level and 32° F.	TEMPERATURE												Wet Bulb	Humidity Mean 9 a.m.	Total Bright (Sunshine Recorder)	Amount of Cloud Mean 9 a.m.	WIND							RAIN FALL							
			IN SHADE						IN SUN		ON GRASS		Mean of Earth below Ground						Number of Days							Total (Inches)	No. of Days over inch or more rainfall	Greatest fall in 24 hours	Date of Greatest Fall				
			Mean 9 a.m.	Mean Max.	Mean Min.	Mean of Max. and Min.	Mean Range	Highest Bk.	Lowest Min.	Bk. bulb in vacuum	Bright b. in vacuum	Mean	Lowest Min.	Mean of Earth below Ground					N.	N.E.	E.	S.E.	S.	S.W.	W.					N.W.			
														1 Ft.																	4 Ft.	Mean 9 a.m.	
H. M.																																	
1902																																	
Jan.	4	29°260	49°4	53°28	45°35	48°81	6°93	53°5	42	71°64	57°1	40°85	33°5	44°7	44	48°97	89°5	3	25	7°5	..	..	..	..	..	5	2	..	1°07	6	0°38	Dec. 29
"	11	29°175	49°07	49°52	42°4	45°58	7°17	51°5	38	67°28	52°4	39°87	29	43°71	45	44°9	85	9	5	8°4	..	..	..	..	..	2	2	3	0°10	1	0°10	Jan. 9
"	18	30°530	50°02	43°5	35°2	39°3	8°3	49	26	61°21	47°8	29°6	16	40°9	46°07	37°2	86	9	10	6°5	1	3	..	..	..	1	1	1	..	..	..	Jan. 24
Feb.	1	30°085	48°20	47°8	35°0	44°9	5°8	50°5	27	70°2	53°6	34°8	18	41°9	45°0	40°5	86°5	10	40	7°5	1	..	..	..	..	..	1	2	0°12	3	0°28	Feb. 6
"	8	30°042	47°05	47°8	33°2	38°9	9°6	49°5	29	79°5	54°9	28°5	22	38°2	44°9	34°5	77°5	29	20	7°5	2	2	..	..	..	..	..	..	..	..	..	..
"	15	29°804	54°90	38°1	35°5	35°4	5°8	44°5	31	45°8	42°7	50°2	24	39°3	43°5	33°5	86	8	..	..	..	..	..	..	..	1	..	..	..	..	..	..
"	22	29°866	51°30	39°1	27°2	33°4	11°4	42	25	82°7	54°0	18°6	15	35°6	42°5	30°0	84	30	30	9°4	2	4	..	..	..	..	..	..	..	..	..	..
"	29	30°064	55°20	40°5	34°4	36°4	8°1	46	20°5	64°4	47°4	25°8	15	34°4	41°1	33°9	87°5	16	15	6°5	1	2	..	..	..	..	..	..	..	..	..	..
Mar.	6	30°371	44°7	48°5	42°8	45°6	5°7	54°5	41°5	74°7	60°07	59°2	32°5	42°7	49°4	44°07	94°5	10	40	9°1	..	..	..	..	..	1	2	..	..	..	..	..
"	13	30°003	43°9	53°0	40°1	45°5	10°9	54°5	35	93°5	64°92	27°4	20	43°7	43°8	41°8	90°5	28	0	6°4	1	1	3	..	..	1	..	1	0°24	1	0°24	Mar. 2
"	20	30°065	49°7	51°2	42°5	49°8	8°7	53	36	91°4	65°92	35°4	26	44°7	44°6	44°6	84°5	23	50	6°8	..	..	..	..	..	..	..	..	..	..	..	..
"	27	29°806	48°6	51°1	41°5	47°8	8°6	58	49	84°5	68°92	37°3	30	46°0	45°8	44°6	77	29	55	6°7	..	..	..	..	..	..	..	..	..	..	..	..
"	34	29°780	46°6	52°8	38°9	45°8	13°9	59	31	102°5	68°7	31°9	22	41°8	40°92	43°4	77	35	4°8	..	..	..	..	..	..	..	..	..	..	..	..	..
April	5	29°772	47°9	53°0	40°3	46°1	11°7	58	35°5	99°0	67°0	34°2	27	40°8	40°9	45°0	85°5	33	74	1	..	..	..	..	..	1	1	1	0°14	2	0°10	..
"	12	30°050	43°4	49°6	36°0	42°8	11°6	52	33	103°0	68	30°0	33	45°0	47°0	39°5	71	42	5	5°2	1	3	3	..	..	..	..	..	..	..	..	..
"	19	29°808	50°07	55°9	49°4	48°6	10°5	60	34	108°1	74°4	31	26	47°5	47°2	45°6	73°5	50	25	4°1	..	1	..	..	..	..	..	..	..	..	..	..
"	26	29°845	53°5	58°1	46°8	52°4	11°3	61	40°5	117°7	70°3	40°2	30	51°7	49°1	45°9	75°5	43	50	4°5	..	1	..	..	..	..	..	..	..	..	..	..
May	3	29°910	50°5	59°30	43°02	49°08	13°23	59°5	36	116°3	77°1	36°5	30	49°7	50°0	45°9	79	42	50	6°0	1	3	..	..	..	..	..	..	..	..	..	..
"	10	30°142	46°1	52°9	37°7	45°3	15°2	55°5	26	116°5	73°5	30°4	27°5	48°6	50	41°5	68	38	20	6°1	2	2	..	..	..	..	..	..	..	..	..	..
"	17	29°841	49°5	53°1	41°7	47°5	11°7	56	34	111°5	73°7	35°7	25	40°9	49°7	44°8	71°5	27	10	6°1	..	..	..	..	..	..	..	..	..	..	..	..
"	24	29°719	52°8	58°8	44°6	50°7	14°4	69	40°5	114°3	77°7	39°2	34	51°5	50°0	44°5	64	42	35	6°1	2	..	..	..	..	..	..	..	..	..	..	..
"	31	30°092	46°6	51°6	49°0	50°3	14°6	68	48	119°7	82°1	29°4	35°5	60°8	52°0	52°5	75	49	25	5°0	2	..	..	..	..	..	..	..	..	..	..	..
June	7	29°812	57°2	61°8	52°7	57°25	9°1	70	49°5	119°8	81°7	48°2	44	58°5	54°0	54°2	75	41	30	6°8	..	..	..	1	2	..	..	..	..	..	..	..
"	14	29°710	52°0	59°0	49°9	53°4	7°9	60°5	47	109	73°4	45	43	56°2	54°7	48°3	69	16	30	8°2	1	..	..	..	..	..	..	..	..	..	..	..
"	21	29°837	53°1	61°0	48°8	54°92	13°15	66°5	44	120°8	81°9	44	37	59°3	54°5	52°7	85	28	28	7°7	1	..	..	..	..	..	..	..	..	..	..	..
"	28	29°765	66°9	72°14	57°1	61°61	15°04	79	52°5	128	91°8	49	49	62°0	56°3	60°0	68	64	15	7°0	..	..	..	..	..	..	..	..	..	..	..	..
July	5	30°114	61°1	70°21	54°03	62°55	13°25	79	48°5	127°2	89°2	50	41°5	61°3	58°4	57°9	72	46	5	7°2	1	..	..	..	..	..	..	..	..	..	..	..
"	12	30°083	66°5	70°0	54°57	62°28	10°43	73°5	49°5	128°2	91°0	41°1	42	65°0	59°7	59°8	66	61	3	3	2	1	..	..	..	..	..	..	..	..	..	..
"	19	30°066	66°2	73°86	54°3	64°08	19°50	82	47°5	122°0	91°4	33°7	41	65°3	62	58°64	64	53	40	7°0	2	..	..	..	..	..	..	..	..	..	..	..
"	26	29°983	59°4	64°07	53°73	58°43	10°29	70	50	104°8	83°5	47°3	41	66°8	66°07	55°1	65	20	5	8°7	1	..	..	..	..	..	..	..	..	..	..	..
Aug.	3	30°133	60°7	65°74	54°00	59°82	11°64	67	48	117°4	86	49°71	41	61°21	59°5	57°36	71	24	10	7°0	2	..	..	..	..	..	..	..	..	..	..	..
"	10	29°914	61°7	65°8	59°40	61°11	9°27	67°5	50	122°5	89°2	53°7	46	62°6	59°7	58°36	55	31	50	7°5	..	..	..	..	..	..	..	..	..	..	..	..
"	17	30°077	61°43	66°14	53°39	59°71	12°84	72	48°5	115	84°5	48°3	49	60°4	59°04	57°2	75°5	27	45	7°0	3	..	..	..	..	..	..	..	..	..	..	..
"	24	29°961	65°1	65°84	56°93	61°5	6°61	69	51°5	107°2	86	54°5	43	62°5	60°1	59°36	63	33	35	8°0	..	..	..	..	..	..	..	..	..	..	..	..
"	31	30°068	64°68	69°86	56°91	63°0	13°72	76°5	59°5	112°8	81°0	49	42°5	61°0	59°5	59°43	72	39	35	5°0	1	..	..	..	..	..	..	..	..	..	..	..
Sept.	6	29°901	61°8	67°07	57°21	62°39	9°36	69	53	119°2	81°2	52°8	47	61°2	60°8	59°76	88	43	55	6°5	2	..	..	..	..	..	..	..	..	..	..	..
"	13	30°001	59°74	62°94	56°74	57°99	3°50	71	42°6	115°9	84°3	46°7	37°5	61°45	60°8	59°24	81	36	5	5°5	1	..	..	..	..	..	..	..	..	..	..	..
"	20	30°222	60°2	65°53	49°29	57°66	13°25	67	43°5	112	81°07	30°6	31	57°21	58°57	56°0	76	42	35	2°5	1	2	..	..	..	..	..	..	..	..	..	..
"	27	30°068	60°85	63°58	49°64	54°15	9°04	61	41	94°8	72°91	36	30°5	53°74	57°60	46°93	74	14	35	8°1	2	5	..	..	..	..	..	..	..	..	..	..
Oct.	4	29°722	52°70	58°95	47°26	52°94	11°57	61°5	38°5	99°07	68°96	37°3	22	52°23	55°66	48°5	74	22	15	5°3	1	2	3	..	..	..	..	..	..	..	..	..
"	11	29°583	54°20	58°21	49°43	53°82	8°78	61°5	45	99°07	72°91	42°07	37	53°86	55°56	50°94	79	28	55	5°0	1	..	..	..	..	..	..	..	..	..	..	..
"	18	30°222	54°24	57°08	45°21	51°60	12°27	61	39	109°80	71°39	47°77	38	51°30	54°10	49°77	82	25	40	6°4	..	..	..	..	..	..	..	..	..	..	..	..
"	25	30°153	56°73	59°10	42°10	49°07	14°10	57°7	38°5	86°5	66°33	37°57	12	50°94	54°14	48°66	86	14	45	7°0	1	1	..	..	..	..	..	..	..	..	..	..
Nov.	1	29°820	52°50	59°06	40°27	52°49	8°10	58	41°5	86°06	66°43	31°50	12	50°94	54°14	48°66	86	14	45	7°0	1	1	..	..	..	..	..	..	..



Health Committee, 1901-1902.

THE WORSHIPFUL THE MAYOR--

SIR WILLIAM T. DUPREE, J.P., T.C.

Chairman :

ALDERMAN A. LEON EMANUEL, J.P.

Vice-Chairman :

COUNCILLOR R. EMMETT

ALDERMAN SIR WILLIAM PINK, K.L.H., J.P.

ALDERMAN J. H. ALLEN

COUNCILLORS :

J. E. PINK	H. JONES
W. A. MORLEY	H. R. PINK, J.P.
C. GILLET	W. E. DUCK
J. BALDWIN	J. MULVANY
S. WOLFE	J. DUMMER
C. R. STOBIE	H. PALIN
M. GILL	

Officers of the Medical Officer of Health's Department.

Medical Officer of Health :

A. MEARNS FRASER, M.D., D.P.H.

Chief Inspector of Nuisances :

F. L. BELL, Cert. San. Inst.

Inspector C.D.A. Act and Inspector of Nuisances :

G. W. MONKCOM

Clerk :

C. W. HEARN

Inspectors of Nuisances :

H. J. LOVELOCK, Cert. San. Inst.
J. S. HOBBS, Cert. San. Inst.
C. J. VINCENT, Cert. San. Inst.
F. R. LOVETT, Cert. San. Inst.
J. O. G. WEEKS, Cert. San. Inst.
H. HOLMAN, Cert. San. Inst.

Inspector of Workshops and Inspector of Nuisances :

H. G. GRAY, Cert. San. Inst.

Inspector of Drains and Inspector of Nuisances :

W. H. TURNER, Cert. San. Inst.

Assistant Clerk :

G. BOWDEN

Disinfector :

A. AYLMER

Port Sanitary Inspector : T. MEADES

Infectious Diseases Hospital.

Medical Superintendent :

J. MCGREGOR, L.R.C.P., L.R.C.S.

Matron :

MRS. M. A. ANTRAM

Medical Officer's Report.

To the Chairman and Members of the Health Committee.

GENTLEMEN,

Although this is now the Seventh Annual Report I have prepared on the Health of the Borough of Portsmouth, it is the first I have had the honour of presenting to the Health Committee. In doing so with your permission, I would gratefully refer to the great kindness and consideration I have always received from the Chairman, Vice-Chairman and Members of the late Drainage and Sanitary Committee, the memory of which will always be a source of gratification to me. Now that the increase in the work of the Health Department has necessitated a separation of the Sanitary, or as it is now called the Health, from the Drainage Committee, I trust the same cordial relations that existed in the past may be maintained in the future, and although I may have to advocate measures which may not meet your approval I trust you will at least give me credit for good faith and for the desire to do my duty to the best of my ability. In some respects the position of Medical Officer of Health is the most unenviable under the Corporation, for the maintenance of health often means the expenditure of money, both publicly and privately, and as the results of such expenditure are usually indirect or intangible, the advocacy of such a line of action is frequently unpopular.

I have to express my thanks for leave granted to enable me to go to Edinburgh to obtain the degree of Doctor of Medicine, which was granted to me for a thesis on the treatment of Small-pox; also for leave to attend the Small-pox

Hospital on the Thames with a view to submitting to full trial the new treatment for small-pox introduced by Dr. Archdall Reid and myself. This treatment although not in every case completely successful, yet has proved of distinct advantage in the treatment of the disease, and even in the worst cases in which life was not saved, a considerable relief was afforded to the patient and the disease was robbed of a good deal of its loathsomeness.

The year has been a heavy one for the Health Department, the principal event being the introduction of Small-pox on various occasions, the outbreak of epidemic diarrhœa in the autumn, and later the epidemic of oyster-borne typhoid. All of these were rapidly, and I think I may say, effectually dealt with, and I have to express my appreciation of the work of Mr. Bell, the Chief Sanitary Inspector, and of the whole of the Staff who on all occasions have worked hard in the performance of their duties.

I would also express the thanks of my Staff for the kind consideration that their application for an increase in salary received, it is a great incentive to know that the worth of their work is recognised and approved.

In the statistical part of my Report I have been enabled to reprint from the recently issued census returns, some interesting extracts concerning the population of Portsmouth.

I have the honour to be,

Gentlemen,

Your obedient Servant,

A. MEARNS FRASER, M.D.,

*Medical Officer of Health,
Medical Officer to the Port, & Superintendent of
the Small-pox Hospital.*

STATISTICS.

Population.—The population estimated to the middle of 1902 was 191,909. As the corrected census returns for 1901 are now to hand, the estimated rates for this year will in all probability be very correct, but the further we advance from the year of the census returns they will be more liable to error. It will be noted that, in tables giving returns for the past 10 years, the figures and rates have all been revised and new calculations given. This is necessitated by the actual figures enumerated at the last census being considerably under the figures estimated (estimated on the rates of increase between 1881 and 1891).

The density of the population is 30·9 persons to the acre, an increase 3·4 per acre since 1891.

Since presenting my last Annual Report the corrected census returns for Portsmouth have been published and it may be interesting to record here extracts from some of the tables.

Population : Male and Female of the 14 Wards, together with the Houses inhabited and uninhabited.

WARDS			HOUSES 1901				POPULATION		
			In-habited	Uninhabited		Build-ing	1901		
				In Occu-pation	Not in occu-pation		Persons	Males	Females
No. 1	St. Thomas	...	2,226	112	85	4	15,439	7,371	8,068
2	Portsea	...	2,630	120	89	4	18,261	11,419	6,842
3	Mile End	...	2,425	29	45	1	11,817	5,800	6,017
4	North End	...	3,450	57	182	152	16,862	8,314	8,548
5	Buckland	...	3,278	74	71	69	15,491	7,270	8,221
6	Kingston	...	2,787	41	30	28	15,546	7,420	8,126
7	Highland	...	2,860	34	49	80	13,051	5,975	7,076
8	St. Simon	...	2,650	95	128	45	14,547	6,130	8,417
9	Havelock	...	2,490	47	47	—	11,739	4,888	6,851
10	St. Paul	...	2,426	125	57	4	11,480	5,139	6,341
11	Town Hall	...	1,920	200	51	1	9,139	4,397	4,742
12	Fratton	...	2,344	78	42	3	11,213	5,390	5,823
13	St. Mary	...	2,265	141	44	2	10,942	5,409	5,533
14	Charles Dickens	...	2,617	84	55	7	12,606	6,147	6,459

Number of Persons at all ages in the Borough at the Census, 1901.

ALL AGES—Persons: 188,133 Male: 91,069; Female: 97,064

	Under 1 year	1 year	2 years	3 years	4 years	Under 5 years	5 years	10 years	13 years	14 years	15 years
Persons	4,369	3,945	3,980	3,873	3,794	19,961	18,718	11,173	3,618	3,640	3,555
Male ..	2,202	1,971	1,988	1,953	1,900	10,014	9,362	5,518	1,713	1,777	1,813
Female	2,167	1,974	1,992	1,920	1,894	9,947	9,356	5,655	1,905	1,863	1,742

	16 years	17 years	18 years	19 years	20 years	21 years	25 years	30 years	35 years	40 years	45 years
Persons	3,697	3,923	3,905	3,885	4,040	15,381	17,177	14,874	12,671	11,021	9,117
Male ..	1,864	2,049	2,026	2,028	2,043	7,707	8,213	6,947	5,956	5,180	4,314
Female	1,833	1,874	1,879	1,857	1,997	7,674	8,964	7,927	6,715	5,841	4,803

	50 years	55 years	60 years	65 years	70 years	75 years	80 years	85 years	90 years	95 years	100 and upward
Persons	7,626	6,095	5,245	3,534	2,597	1,610	804	223	34	8	1
Male ..	3,505	2,863	2,479	1,574	1,100	629	295	86	12	2	..
Female	4,121	3,232	2,766	1,960	1,497	981	509	137	22	6	1

The following gives the birthplace of foreigners resident in Portsmouth at the census.

		Males	Fe- males			Males	Fe- males
Russia	...	34	22	Italy	...	91	29
Poland (Russia)	...	36	18	Servia	...	—	1
Sweden	...	16	1	Turkey	...	2	—
Norway	...	19	3	Japan	...	1	—
Denmark	...	8	1	Egypt	...	—	1
Holland	...	6	4	United States	...	40	42
Belguim	...	5	5	Argentine Republic	...	—	2
France	...	55	39	South America	}	1	—
Germany	...	52	32	Other States			
Austria	...	10	2				
Hungary	...	1	—				
Switzerland	...	21	19	Total	...	398	221

Total Tenements and Tenements of less than Five rooms, with number of Persons per Tenement.

1901

	Rooms in Tenem't	Tenm'ts of less than 5 rooms	PERSONS PER TENEMENT											
			1	2	3	4	5	6	7	8	9	10	11	12 or more
Total Tenements—41,489	1	1,320	866	327	9 ²	23	6	3	3	..	..	..	..	..
	2	3,249	857	1330	684	268	81	23	4	1	..	1	..	..
Tenements of less than Five Rooms—10,570	3	2,043	242	706	508	278	167	77	40	13	8	3	1	..
	4	3,958	218	828	883	777	543	325	210	98	50	19	6	1

1891

	Rooms in Tenem't	Tenm'ts of less than 5 Rooms	PERSONS PER TENEMENT											
			1	2	3	4	5	6	7	8	9	10	11	12 or more
Total Tenements—33,980	1	1,345	884	327	101	26	3	2	1	..	..	..	..	1
	2	2,558	677	973	532	251	81	27	11	3	3	..	..	..
Tenements of less than Five Rooms—9,435	3	2,053	189	576	496	365	212	112	67	23	12	1	..	..
	4	3,479	155	709	725	636	489	356	218	102	53	25	8	3

From the above tables it is evident that the overcrowding in Portsmouth during the last ten years has tended rather to decrease than increase in the smaller tenements; there are only 1,320 one room tenements compared with 1,345 in 1891; there is an increase of 691 two-room tenements, a decrease of 10 in three-room tenements, and an increase of 489 in four-room tenements.

The total number of persons enumerated in Military and Naval barracks, quarters, hospitals, and prisons, and on His Majesty's ships in 1901 was 9,630; in 1891 the number was 8,916.

Condition as to Marriage and Ages of Persons, Male and Female, 1901.

	All ages	Under 15 yrs.	15 yrs.	16 yrs.	17 yrs.	18 yrs.	19 yrs.	20 yrs.	21 yrs.	25 yrs.	35 yrs.	45 yrs.	55 yrs.	65 yrs.	75 yrs.	85 and upwd.
Unmarried	109,672	57110	3555	3693	3910	3851	3690	3671	11281	11272	4031	1913	997	507	173	18
	M. 56,114	28384	1813	1864	2048	2025	2007	1978	6444	6226	1909	802	390	176	47	1
	F. 53,558	28726	1742	1829	1862	1826	1683	1693	4837	5046	2122	1111	607	331	126	17
Married	67,207	..	..	4	13	54	195	367	4053	20237	18361	12697	7489	3017	691	29
	M. 32,056	..	..	..	1	1	21	65	1252	8803	8913	6532	4226	1779	438	25
	F. 35,151	..	..	4	12	53	174	302	2801	11434	9448	6165	3263	1238	253	4
Widowed	11,254	..	..	..	..	..	..	2	47	542	1300	2133	2854	2607	1550	219
	M. 2,899	..	..	..	..	..	..	..	11	131	314	485	726	719	439	74
	F. 8,355	..	..	..	..	..	..	2	36	411	986	1648	2128	1888	1111	145

DEATHS. During the year 3,269 Deaths were registered, giving a corrected death rate of 17·19 per 1000, which is slightly lower than that of the previous year, which was 17·94 per 1000.

Deaths were registered in the four quarters of the year as follows :

First Quarter	834 deaths,	equal to rate of	17·38 per 1000
Second	„ 731	„ „	15·23 „
Third	„ 840	„ „	17·50 „
Fourth	„ 864	„ „	18·01 „

The corrected death rate of 17·19 per 1000 places Portsmouth ninth in the list of the 33 great towns of England and Wales. The lowest death rate is that of Croydon, 14·32 and the highest that of Liverpool 24·04 per 1000.

TABLE II.

* Table showing the Annual Birth-rate, Rate of Mortality, and Death-rates, among Children for the year 1902, and ten years preceding.

Year	Birth-rate per 1000 of the Population	Annual Rate of Mortality living from all causes	Annual Rate of Mortality per 1000 living from 7 principal Zymotic Diseases	Deaths of Children under 1 year: Percentage of total Deaths	Percentage of Deaths of Children under 1 year to Registered Births	Deaths of Children under 5 years: Percentage of Total Deaths
1902	27·53	17·03	2·35	24·4	15·1	35·2
1901	27·88	17·82	2·87	25·4	16·2	35·6
1900	26·89	18·09	2·46	22·9	17·4	33·4
1899	27·33	30·47	3·53	26·4	19·7	37·8
1898	26·58	16·98	2·38	22·3	13·7	34·0
1897	27·74	16·85	2·62	27·5	16·7	37·9
1896	28·84	17·46	2·36	25·9	15·6	38·1
1895	28·52	18·33	2·36	27·3	17·6	37·5
1894	28·05	15·44	2·11	23·5	12·9	37·3
1893	28·51	18·52	3·14	24·9	16·4	38·3
1892	28·08	18·52	1·91	20·4	15·5	35·3
Average of 10 years, 1892-1901	27·84	17·86	2·57	24·6	16·2	36·5

* Revised in accordance with the Census returns of 1901.

TABLE III.

Showing the Population, Birth-rates, Recorded Death-rates, Corrected Death-rates, Zymotic Rates, and Deaths under 1 year to 1000 Births in the 33 Large Towns for the year 1902 (53 Weeks)

Name of Towns	Provisional Estimated Population middle of 1902	Per 1000 living			ZYMOTIC DEATH-RATE							Deaths of Children under 1 year of age to 1000 births	
		Birth-rate	Recorded Death-rate	Corrected Death-rate	Small-pox	Measles	Scarlet Fever	Diphtheria	Whooping Cough	Fever	Diarrhoea		Total of Cols. 5-11
Cols. ..	1	2	3	4	5	6	7	8	9	10	11	12	13
1 CROYDON ..	137,917	26.1	13.96	14.32	0.08	0.21	0.04	0.21	0.22	0.06	0.49	1.31	132
2 DERBY ..	116,982	28.0	13.93	15.02	..	0.33	0.07	0.10	0.24	0.12	0.42	1.28	125
3 BRIGHTON ..	124,539	24.3	15.81	15.59	..	0.24	0.02	0.28	0.22	0.11	0.39	1.26	125
4 LEICESTER ..	216,389	29.1	14.89	15.90	0.02	0.34	0.06	0.15	0.32	0.06	0.59	1.54	153
5 NORWICH ..	113,178	27.9	16.68	15.95	..	0.30	0.20	0.09	0.57	0.04	0.63	1.83	167
6 PLYMOUTH ..	110,057	27.0	17.00	16.57	0.01	0.42	0.10	0.13	0.22	0.04	0.86	1.78	155
7 WOLVERHAMPTON	95,712	31.6	16.36	16.94	..	0.22	0.16	0.20	0.24	0.13	0.78	1.73	134
8 HALIFAX ..	105,932	27.3	15.70	17.04	..	0.36	0.14	0.08	0.14	0.14	0.21	1.07	144
9 PORTSMOUTH ..	191,909	27.1	16.76	17.19	..	0.34	0.08	0.34	0.48	0.28	0.80	2.32	152
10 SWANSEA ..	95,059	31.1	16.10	17.28	0.34	0.07	0.18	0.25	0.01	0.06	0.49	1.40	135
11 BRADFORD ..	281,771	23.0	15.82	17.49	..	0.56	0.16	0.30	0.12	0.11	0.18	1.43	139
12 NOTTINGHAM ..	243,191	27.8	16.67	17.57	..	0.02	0.10	0.12	0.15	0.21	0.72	1.32	159
13 HULL ..	245,449	32.1	17.18	17.60	..	0.83	0.07	0.35	0.44	0.17	0.41	2.27	137
14 BRISTOL ..	334,632	27.5	17.36	17.83	0.00	1.22	0.19	0.54	0.32	0.17	0.38	2.82	131
15 WEST HAM ..	275,408	34.1	17.08	18.26	0.54	0.50	0.16	0.46	0.41	0.28	0.85	3.20	149
16 CARDIFF ..	168,900	31.5	16.80	18.28	..	1.07	0.22	0.52	0.56	0.05	0.27	2.69	146
17 SHEFFIELD ..	418,177	33.4	17.07	18.40	..	0.45	0.13	0.27	0.17	0.11	0.56	1.69	150
18 LONDON ..	4,579,110	28.5	17.73	18.64	0.28	0.51	0.12	0.25	0.40	0.13	0.54	2.23	141
19 GATESHEAD ..	113,013	36.7	17.70	18.66	0.03	0.71	0.30	0.10	0.44	0.05	0.37	2.00	136
20 BIRKENHEAD ..	112,396	32.7	17.72	18.91	0.01	0.32	0.18	0.24	0.53	0.39	0.60	2.27	148
21 HUDDERSFIELD	95,000	24.4	17.77	19.99	0.01	0.59	0.11	0.13	0.48	0.06	0.19	1.57	138
22 BOLTON ..	171,082	27.2	16.92	19.15	0.04	0.17	0.67	0.25	0.32	0.20	0.39	2.04	134
23 BLACKBURN ..	130,318	25.6	16.93	19.15	0.02	0.60	0.23	0.17	0.20	0.17	0.40	1.79	159
24 LEEDS ..	437,037	29.8	17.55	19.16	0.01	0.43	0.12	0.21	0.15	0.18	0.60	1.99	159
25 BIRMINGHAM ..	528,181	31.8	18.62	20.04	0.01	0.34	0.54	0.24	0.50	0.19	0.71	2.53	157
26 SUNDERLAND	148,007	35.9	19.46	20.07	0.01	0.55	0.17	0.10	0.32	0.23	0.49	1.87	152
27 PRESTON ..	113,766	28.9	19.07	20.88	..	0.49	0.18	0.24	0.25	0.19	1.44	2.79	189
28 SALFORD ..	224,007	33.8	19.29	21.33	..	0.60	0.22	0.33	0.52	0.27	0.64	2.67	157
29 NEWCASTLE-ON-TYNE	219,150	32.6	19.88	21.45	0.00	0.63	0.26	0.10	0.45	0.05	0.26	1.75	139
30 OLDHAM ..	138,091	26.1	19.07	21.46	0.05	0.74	0.26	0.33	0.21	0.10	0.31	2.00	148
31 BURNLEY ..	98,383	29.1	19.46	21.96	0.04	1.49	0.70	0.45	0.15	0.19	0.59	3.61	177
32 MANCHESTER..	549,170	32.8	19.96	22.30	..	0.44	0.26	0.21	0.43	0.12	0.53	1.99	152
33 LIVERPOOL ..	692,495	34.2	22.47	24.04	0.03	0.48	0.45	0.30	0.57	0.31	0.94	3.08	163

*Compiled from the Annual Summary of Births and Deaths issued by the Registrar General.

TABLE IV.

Deaths Registered at several groups of ages from different classes of Diseases during the Year ending January 3rd, 1903.

CAUSE OF DEATH	AGES											DISTRICTS					Total	
	0 to 1	1 to 5	5 to 15	15 to 25	25 to 35	35 to 45	45 to 55	55 to 60	60 to 65	65 to 75	75 to 85	85 and over	Portsmouth	Portsea	Kingston	Landport		Southsea
CLASSES:																		
I.—ZYMOTIC DISEASES	213	159	48	21	18	12	13	7	11	8	11	3	6	18	290	193	17	524
II.—PARASITIC DISEASES	..	..	..	..	..	..	..	..	..	..	..	..	1	..	..	1	..	2
III.—DIETIC DISEASES	..	..	..	..	1	6	6	2	..	2	..	..	..	5	10	2	..	17
IV.—CONSTITUTIONAL DISEASES	45	37	30	68	84	109	88	31	51	55	26	1	16	40	302	217	42	625
V.—DEVELOPMENTAL DISEASES	116	2	..	..	..	..	..	1	7	48	130	47	5	10	202	115	19	351
VI.—LOCAL DISEASES	283	136	44	50	76	120	175	90	120	242	135	27	34	86	708	578	92	1498
VII.—DEATHS FROM VIOLENCE	20	12	13	11	16	11	16	4	1	8	4	1	7	11	56	34	9	117
VIII.—DEATHS FROM ILL-DEFINED AND NOT SPECIFIED CAUSES	121	7	1	1	1	2	1	..	1	..	..	..	5	17	52	57	4	135
TOTALS	800	353	136	151	196	260	299	135	191	363	306	79	74	195	1620	1197	183	3269
CLASS 1.																		
ZYMOTIC DISEASES—																		
Order 1.—Miasmatic Diseases																		
Measles	22	43	4	1	..	..	..	..	..	..	..	..	..	1	41	28	..	70
Scarlet Fever	..	7	5	..	..	..	..	..	..	..	..	..	..	..	10	4	..	14
Whooping Cough	..	31	1	..	..	..	..	..	..	..	..	..	2	3	44	40	3	92
Diphtheria	..	39	20	..	..	..	..	..	..	..	..	..	..	1	42	17	1	62
Enteric or Typhoid Fever	..	5	15	11	10	7	3	1	1	1	..	..	1	1	29	18	5	54
Other Miasmatic Diseases— (Influenza)	..	3	..	4	3	2	4	2	9	5	8	3	1	5	20	13	4	43
Order 2.—Diarrhoeal Diseases																		
Diarrhoea, Dysentery	116	31	2	2	1	..	2	1	1	1	2	..	1	6	84	66	2	159
Order 5.—Venereal Diseases																		
Syphilis	8	..	..	..	3	..	2	..	..	..	..	..	..	..	12	1	..	13
Gonorrhoea, Stricture of Urethra	..	..	..	..	..	..	..	1	..	..	1	..	..	..	1	1	..	2

TABLE IV.—Continued.

CAUSE OF DEATH	AGES											DISTRICTS					Totals	
	0 to 1	1 to 5	5 to 15	15 to 25	25 to 35	35 to 45	45 to 55	55 to 60	60 to 65	65 to 75	75 to 85	85 and over	Portsmouth	Portsea	Kingston	Landport		Southsea
Class I.—Continued																		
<i>Order 6.—Septic Diseases</i>																		
Erysipelas	1	1	..	1	..	..	..	..	..	..	1	1	1	3
Pyæmia, Septicæmia	1	3	..	2	2	1	..	1	..	..	..	..	6	4	1	12
CLASS II.																		
PARASITIC DISEASES—																		
Thrush and other Vegetable Parasitic Diseases	1	..	..	1	..	2
CLASS III.																		
DIETETIC DISEASES—																		
Chronic Alcoholism	1	4	4	1	..	2	..	..	..	1	9	2	..	12
Delirium Tremens	2	2	1	..	..	..	..	..	4	1	..	..	5
CLASS IV.																		
CONSTITUTIONAL DISEASES—																		
Rheumatic Fever; Rheumatism of Heart	1	4	..	2	..	..	..	..	..	..	..	..	5	2	..	7
Rheumatism	1	3	1	1	1	..	..	..	..	3	4	..	7
Gout	1	..	..	2	..	..	1	1	..	2	..	4
Rickets	..	3	..	..	..	..	..	..	..	..	..	..	..	..	2	4	..	6
Cancer, Malignant Diseases	2	4	25	34	17	42	41	23	1	4	8	85	70	22	189
Tabes Mesenterica	..	6	3	1	..	1	..	..	..	..	..	..	..	..	21	14	1	36
Tubercular Meningitis, Hydrocephalus	..	13	12	1	..	..	..	..	..	..	..	..	..	4	15	11	1	31
Phthisis	..	9	12	56	75	77	45	11	7	7	1	..	9	32	153	99	15	308
Other forms of Tuberculosis, Scrofula	..	5	2	4	1	..	..	..	..	..	..	..	1	2	7	4	1	15
Purpura, Hæmorrhagic Diathesis	..	1	..	..	1	..	..	..	..	..	..	..	..	..	2	..	..	2
Anæmia, Chlorosis, Leucocythæmia	1	1	1	..	..	1	..	..	..	..	2	..	..	4
Glycosuria, Diabetes, Mellitus	1	2	3	1	1	2	1	..	1	..	5	3	2	11
Other Constitutional Diseases	1	..	1	..	..	2	..	..	..	1	2	2	..	5

[illegible]

[illegible]

Summary of Table IV.

Class	DISEASES	Number of Deaths
I.	ZYMOTIC DISEASES—	
	1. Miasmatic Diseases ...	335
	2. Diarrhoeal Diseases ...	159
	3. Malarial Diseases ...	...
	4. Zoogenous Diseases ...	...
	5. Venereal Diseases ...	15
	6. Septic Diseases ...	15
II.	PARASITIC DISEASES ...	2
III.	DIETIC DISEASES ...	17
IV.	CONSTITUTIONAL DISEASES ...	625
V.	DEVELOPMENTAL DISEASES ...	351
VI.	LOCAL DISEASES—	
	1. Diseases of the Nervous System ...	355
	2. " " Organs of Special Sense ...	3
	3. " " Circulatory System ...	335
	4. " " Respiratory System ...	475
	5. " " Digestive System ...	208
	6. " " Lymphatic System ...	2
	7. " " Gland-like Organs of Uncertain Use ...	1
	8. " " Urinary System ...	100
	9. " " Reproductive System—	
	(a) Organs of Generation ...	2
	(b) Parturition ...	10
	10. " " Bones and Joints ...	2
	11. " " Integumentary System ...	5
VII.	VIOLENCE—	
	1. Accidents or Negligence ...	95
	2. Homicide ...	2
	3. Suicide ...	20
VIII.	ILL-DEFINED OR NOT SPECIFIED CAUSES ...	135

TABLE V.

Deaths Registered at several groups of ages from different classes of Diseases during Quarter ending March 29th, 1902

CAUSE OF DEATH	AGES										DISTRICTS					Totals		
	0 to 1	1 to 5	5 to 15	15 to 25	25 to 35	35 to 45	45 to 55	55 to 60	60 to 65	65 to 75	75 to 85	85 and over	Portsmouth	Portsea	Kingston		Landport	Southsea
Class I.—ZYMOTIC DISEASES— Order 1.— <i>Miasmatic Diseases</i>																		
Measles	..	..	..	1	..	..	..	..	..	..	..	..	..	..	..	1	1	..
Scarlet Fever	1	1	..	..	..	..	..	..	..	..	..	..	..	..	1	1	..	2
Whooping Cough	1	3	..	..	..	..	..	..	..	..	..	..	..	2	14	6	3	1
Diphtheria	..	14	9	..	..	..	..	..	..	1	..	..	1	..	4	1	2	23
Enteric or Typhoid Fever	..	..	2	2	2	..	1	1	6	4	2	2	1	1	8	8	3	8
Other Miasmatic Diseases (Influenza)	..	2	..	2	1	..	1	1	..	..	..	..	..	..	..	..	..	21
Order 2.— <i>Diarrhoeal Diseases</i>																		
Diarrhoea, Dysentery	1	..	..	..	..	..	..	..	..	..	..	..	1	..	..	..	..	1
Order 5.— <i>Veneral Diseases</i>																		
Syphilis	1	..	..	..	1	..	2	..	..	..	..	..	..	..	4	..	..	4
Order 6.— <i>Septic Diseases</i>																		
Erysipelas	..	..	..	..	1	..	..	..	..	..	..	..	..	..	..	1	..	1
Pyæmia, Septicæmia	..	..	..	1	..	..	..	1	..	..	..	..	1	..	3	1	..	5
II.—PARASITIC DISEASES																		
III.—DIETIC DISEASES	1	..	..	..	..	..	..	1	..	..	..	..	..	..	..	1	..	1
IV.—CONSTITUTIONAL DISEASES	..	..	..	..	..	..	27	8	14	11	5	..	3	12	77	57	12	2
V.—DEVELOPMENTAL DISEASES	11	8	8	22	18	29	..	..	3	12	34	15	2	2	49	32	4	161
VI.—LOCAL DISEASES	24	1	..	..	..	..	..	..	..	92	42	11	14	27	169	196	28	89
VII.—DEATHS FROM VIOLENCE	67	20	10	14	20	32	47	34	37	2	2	..	2	2	10	12	3	434
VIII.—NOT SPECIFIED OR ILL-DEFINED	5	3	1	2	4	5	4	..	1	..	..	..	..	8	16	23	1	29
..	43	2	1	..	..	..	1	..	1	..	..	..	..	..	..	..	..	48
TOTALS	157	63	31	44	47	67	84	45	62	122	84	28	25	54	357	343	55	834

TABLE VI.

Deaths Registered at several groups of ages from different Classes of Diseases during Quarter ending June 28th, 1902.

CAUSE OF DEATH	AGES										DISTRICTS					Totals		
	0 to 1	1 to 5	5 to 15	15 to 25	25 to 35	35 to 45	45 to 55	55 to 60	60 to 65	65 to 75	75 to 85	85 and over	Portsmouth	Portsea	King's Lynn		Landport	South's
Class I.—ZYMOTIC DISEASES—																		
Order 1—Miasmatic Diseases.																		
Measles	5	3	..	..	..	..	..	..	..	..	..	..	..	..	2	6	..	8
Scarlet Fever	..	4	2	..	..	..	..	..	..	..	..	..	..	..	4	2	..	6
Whooping Cough	14	4	1	..	..	..	..	..	..	..	..	..	..	2	8	8	1	19
Diphtheria	..	7	3	..	..	..	..	..	..	..	..	..	..	..	8	2	..	10
Enteric or Typhoid Fever	..	..	2	3	2	2	1	1	..	..	..	..	..	1	3	6	1	11
Other Miasmatic Diseases (Influenza)	..	..	..	2	2	..	2	..	1	1	4	1	..	2	7	4	..	13
Order 2—Diarrheal Diseases																		
Diarrhea, Dysentery	1	..	..	..	..	..	..	..	..	1	..	..	..	..	1	1	..	2
Order 5—Venereal Diseases																		
Syphilis	4	..	..	..	1	..	..	..	..	..	..	..	..	..	4	1	..	5
Gonorrhoea	..	..	..	..	..	..	1	..	..	..	..	..	..	..	..	1	..	1
Order 6—Septic Diseases																		
Pyæmia, Septicæmia	..	..	1	..	..	..	1	..	..	1	..	..	..	..	2	1	..	3
II.—PARASITIC DISEASES																		
III.—DIETIC DISEASES	..	..	..	..	1	2	1	..	..	..	..	..	..	..	..	..	..	..
IV.—CONSTITUTIONAL DISEASES	11	7	8	17	23	28	21	11	6	16	4	..	2	12	76	52	10	152
V.—DEVELOPMENTAL DISEASES	29	..	..	..	..	..	..	1	3	10	33	10	..	4	53	22	7	86
VI.—LOCAL DISEASES	63	44	11	13	18	37	39	23	26	54	34	6	7	24	166	141	27	368
VII.—DEATHS FROM VIOLENCE	7	1	1	3	5	1	2	1	..	..	1	..	1	2	11	6	2	22
VIII.—NOT SPECIFIED OR ILL-DEFINED	..	..	..	..	..	1	..	..	..	..	..	..	1	..	7	11	2	21
TOTALS	154	70	29	38	52	71	68	37	36	83	76	17	11	48	354	268	50	731

TABLE VII.

Deaths Registered at several groups of ages from different Classes of Diseases during Quarter ending Sept. 27th, 1902.

CAUSE OF DEATH	AGES												DISTRICTS					Totals
	0 to 1	1 to 5	5 to 15	15 to 25	25 to 35	35 to 45	45 to 55	55 to 60	60 to 65	65 to 75	75 to 85	85 and over	Portsmouth	Portsea	Kingsdon	Landport	Southsea	
Class I.—ZYMOTIC DISEASES—																		
Order 1—Miasmatic Diseases																		
Measles	12	28	..	..	..	..	..	..	..	..	..	..	..	1	20	19	..	40
Scarlet Fever	1	..	2	..	..	..	..	..	..	..	..	..	..	..	2	1	..	3
Whooping Cough	38	18	..	..	..	..	..	..	..	..	..	..	..	..	32	23	1	56
Diphtheria	3	7	2	..	..	..	..	..	..	..	..	..	..	..	8	4	..	12
Enteric or Typhoid Fever	..	2	7	5	2	3	1	1	1	..	..	..	..	..	14	7	..	21
Other Miasmatic Diseases (Influenza)	..	..	..	..	..	..	1	..	..	..	..	..	..	..	1	..	..	1
Order 2—Diarrhoeal Diseases																		
Diarrhoea, Dysentery	92	24	1	1	1	..	1	..	..	..	1	..	..	4	63	53	1	121
Order 5—Venereal Diseases																		
Syphilis	1	..	..	..	..	..	..	..	..	..	..	..	..	..	1	..	..	1
Gonorrhoea, Stricture of Urethra	..	..	..	..	..	..	..	..	..	..	1	..	..	..	1	..	..	1
Order 6—Septic Diseases																		
Pycemia, Septicemia	..	..	..	2	..	..	..	..	..	..	..	..	..	..	2	..	..	2
II.—PARASITIC DISEASES																		
III.—DIETIC DISEASES	..	..	..	..	..	..	..	1	..	..	..	..	..	..	..	..	..	..
IV.—CONSTITUTIONAL DISEASES	..	..	..	..	..	2	1	2	..	..	..	..	..	2	1	1	..	4
V.—DEVELOPMENTAL DISEASES	13	12	10	14	20	21	19	2	8	16	11	..	..	2	76	50	6	146
VI.—LOCAL DISEASES	34	..	..	..	..	..	..	..	1	16	23	8	1	1	47	31	3	82
VII.—DEATHS FROM VIOLENCE	72	19	11	9	16	26	38	11	26	32	25	6	7	13	162	94	15	291
VIII.—NOT SPECIFIED OR ILL-DEFINED	2	3	3	4	3	2	3	1	..	3	..	..	1	2	11	9	1	24
..	30	4	..	1	..	..	..	..	..	..	..	..	4	9	11	11	..	35
TOTALS	208	117	36	36	42	54	64	15	36	67	61	14	15	43	452	303	27	840

TABLE VIII.

Deaths Registered at several groups of Ages from different Classes of Diseases during Quarter ending January 3rd, 1903.

CAUSE OF DEATH	AGES											DISTRICTS					Totals	
	0 to 1	1 to 5	5 to 15	15 to 25	25 to 35	35 to 45	45 to 55	55 to 60	60 to 65	65 to 75	75 to 85	85 and over	Portsmouth	Portsea	Kingston	Landport		Southsea
Class I.—ZYMOTIC DISEASES—																		
Order 1.—Miasmatic Diseases—																		
Measles	5	12	4	..	..	..	..	..	..	..	..	..	..	..	19	2	..	21
Scarlet Fever	..	2	1	..	..	..	..	..	..	..	..	..	..	..	3	..	..	3
Whooping Cough	7	6	..	..	..	..	..	..	..	..	..	..	2	1	4	6	..	13
Diphtheria	..	11	6	..	..	..	..	..	..	..	..	..	..	..	12	5	..	17
Enteric or Typhoid Fever	..	3	4	1	4	2	..	..	..	..	..	..	..	..	8	4	2	14
Other Miasmatic Diseases (Influenza)	..	1	..	..	..	2	..	1	2	..	2	..	..	2	4	1	1	8
Order 2.—Diarrheal Diseases—																		
Diarrhoea, Dysentery	22	7	1	1	..	..	1	1	1	..	1	..	..	2	20	12	1	35
Order 5.—Venereal Diseases—																		
Syphilis	2	..	..	..	1	..	..	..	..	..	..	..	..	..	3	..	..	3
Order 6.—Septic Diseases—																		
Erysipelas	..	..	..	..	..	1	..	1	..	..	..	..	..	..	1	..	1	2
Pyæmia, Septicæmia	..	..	..	..	..	1	1	..	..	..	..	..	..	..	..	1	1	2
II.—PARASITIC DISEASES	1	..	..	..	..	..	..	..	..	..	..	..	1	..	..	..	..	1
III.—DIETIC DISEASES	..	..	..	..	..	2	3	..	..	2	..	..	..	2	5	..	..	9
IV.—CONSTITUTIONAL DISEASES	10	1	4	15	23	31	21	10	23	12	6	1	9	12	72	59	14	166
V.—DEVELOPMENTAL DISEASES	29	10	..	..	..	..	..	..	..	10	40	14	2	4	53	30	5	94
VI.—LOCAL DISEASES	81	44	12	14	22	26	50	21	32	64	35	4	6	22	211	144	22	405
VII.—DEATHS FROM VIOLENCE..	6	5	8	2	4	3	7	2	..	3	1	1	3	5	24	7	3	42
VIII.—NOT SPECIFIED OR ILL-DEFINED	..	1	..	..	1	1	..	..	..	..	..	..	..	..	18	12	1	31
TOTALS	101	103	40	33	55	60	83	36	58	91	85	20	23	50	157	283	51	864

TABLE IX.

Table showing the Numbers and Death Rates per 1000 of Population from the Seven Principal Zymotic Diseases, from Lung Diseases (excluding Phthisis), from Phthisis, and from all causes, during each Quarter, and for the whole Year, 1902.

Quarter ending	*The Seven Principal Zymotic Diseases		Lung Diseases (excluding Phthisis)†		Phthisis		From all Causes	
	No.	Rate per 1000	No.	Rate per 1000	No.	Rate per 1000	No.	Rate per 1000
March 29th ...	39	0·81	170	3·54	85	1·77	834	17·38
June 28th ...	56	1·17	106	2·21	80	1·66	731	15·23
September 27th ...	253	5·27	55	1·14	67	1·40	840	17·50
January 3rd ...	103	2·14	128	2·67	76	1·58	864	18·01
THE YEAR 1902 ...	451	2·35	459	2·39	308	1·60	3269	17·03

* Includes Small-Pox, Measles, Scarlet Fever, Whooping Cough, Diphtheria, Enteric or Typhoid Fever, and Diarrhœa.

† Includes Emphysema, Asthma, Bronchitis, Pneumonia, Pleurisy, and other Diseases of the Respiratory System.

TABLE X.

DIVISION I.

Showing the number of Deaths from all ages from certain groups of diseases, and proportions of deaths per 1,000 of Population and to 1,000 Births.

DISEASES	Total Deaths	Deaths per 1000 of Population at all ages	Proportion of Deaths to 1000 Births
(1) Principal Zymotic Diseases ...	451	2.35	85
(2) Pulmonary Diseases (excluding Consumption) ...	475	2.47	90
(3) Principal Tubercular Diseases ...	390	2.03	74

DIVISION II.

Deaths of infants under one year of age from Wasting and Convulsive Diseases ; also proportion of deaths under one year per 1,000 births, and per 1,000 Deaths from all causes under one year.

Infants under one year	Total Deaths	Deaths per 1000 Births	Deaths under one year per 1000 of Total Deaths
(4) Wasting Diseases ...	227	43	284
(5) Convulsive Diseases ...	80	15	100

NOTES.

- (1) Includes Small-pox, Measles, Scarlet Fever, Diphtheria, Whooping Cough, Typhoid or Enteric Fever, Continued Fever and Diarrhœa.
- (3) Includes Phthisis (or Consumption), Scrofula, Tuberculosis, Tabes Mesenterica, Tubercular Meningitis, and Hydrocephalus.
- (4) Includes Marasmus, Atrophy, Want of Breast Milk, and Premature Birth.
- (5) Includes Infantile Meningitis, Convulsions, and Teething.

TABLE XI.

Showing the number of Deaths in the Years 1861 to 1902 from the Seven principal Zymotic Diseases.

YEAR	..	1861	1862	1863	1864	1865	1866	1867	1868	1869	1870	1871	1872	1873	1874	1875	1876	1877	1878	1879	1880	1881	1882	1883	1884	1885	1886	1887	1888	1889	1890	1891	1892	1893	1894	1895	1896	1897	1898	1899	1900	1901	1902				
POPULATION	..	95220	96960	98731	100531	102363	104230	106130	108064	110034	112040	114083	116162	118280	120436	122632	124867	127144	129461	131821	134235	136332	139872	142441	147412	149448	153552	146724	149966	153279	156667	159893	162492	165153	167878	170672	173565	176497	179500	182576	185725	188885	191909				
DISEASES																																															
Small-Pox	..	1	..	12	228	3	1	1	1	39	514	45	2	..	1	
Measles	..	3	42	80	6	14	16	82	46	57	39	42	52	16	56	54	109	12	36	10	42	7	156	10	164	7	197	8	50	8	4	223	38	120	139	39	126	35	73	50	3	82	70
Scarlet Fever	..	5	226	134	17	20	34	15	107	295	119	30	5	12	36	47	457	36	16	11	9	25	40	16	9	5	18	26	12	11	19	9	18	32	14	7	19	11	31	22	11	15	14
Diphtheria	..	9	20	24	17	7	26	4	18	18	13	10	21	15	19	18	11	5	1	4	20	205	106	20	41	42	65	47	17	33	47	23	26	29	34	18	20	22	54	120	104	70	62
Whooping Cough	..	11	36	16	48	50	46	23	57	26	46	66	17	19	104	8	42	59	92	9	48	66	36	54	9	44	102	41	26	92	39	38	87	36	41	64	60	65	42	62	87	21	92
Fever	..	111	128	57	72	74	85	74	119	105	91	72	112	97	101	103	71	87	96	62	70	60	207	93	58	93	124	53	27	32	50	33	42	54	29	37	28	44	44	75	93	43	54
Diarrhoea	..	152	71	68	118	122	117	140	177	100	121	107	113	106	149	141	131	153	170	73	192	73	111	80	116	123	191	151	98	122	105	73	99	247	93	238	157	286	183	316	159	311	159
Totals	..	292	523	391	498	317	330	338	526	602	430	366	834	310	470	371	822	322	411	169	381	436	556	274	397	314	698	329	230	300	265	399	310	518	534	403	410	463	427	645	457	542	451

Small-pox.—Small-pox was introduced into the town on six separate occasions during the year. Altogether there were 8 cases in the Borough. Of these the first W.S. proved fatal, the others recovered. In addition to these cases I was called in consultation to see a very large number of cases which presented symptoms and rashes in some respects resembling small-pox.

The following is the history of the cases.

1.—W.S., sailor, aged 26, at 15 Whitworth Road, Buckland, a very severe confluent case. The patient came from Canning Town, London, on January 26th, arriving here on the dredger *Chatham*, on January 29th; he was taken ill at above address on Feb. 3rd. I was called in to see him on Feb. 6th, on which day he was moved to the Small-pox Hospital. Disease evidently contracted in London. This case was fatal. The patient was said to have been vaccinated in infancy, but no marks were visible.

2.—H.G., labourer, aged 44, living at Furze Cottage, Milton, near Small-pox hospital. I was called in to see this patient on the evening of March 6th, and he was removed to the hospital on March 7th. This was a well-marked discrete case. The patient was at work in field near Small-pox Hospital and apparently contracted the disease by aerial convection. Result: Recovery.

3.—Mrs. A.G., aged 32, wife of previous patient. On March 20th I was called to see above case. A mild discrete case, vaccinated in infancy only, two marks. This patient also made a good recovery and during her residence at the Small-pox Hospital was delivered of a healthy child, both the mother and child doing well without any bad symptoms.

4.—R.W., aged 24, music hall artist, 27 Station Street, Landport. Patient came from 9 Woodland Terrace, Upper Norwood, in which house there had been a case of small-pox, to Portsmouth on March 23rd. He then had the rash on him. I was called in to see him on March 25th, he was removed to the Hospital the same day. Vaccinated, two marks, in infancy. A confluent case. Result: Recovery.

5.—G.T., aged 32, a sailor on board barque *Dunkane*, from London to Adelaide. This vessel put in at St. Helen's Roads, Isle of Wight, on March 27th, and was sent on from there to the Motherbank Quarantine Station. The patient was seen by me on Monday, March 30th. I moved him by steam launch to the Small-pox Hospital. The type of case was semi-confluent, he had been vaccinated, two marks, in infancy. Result: Recovery. The disease was contracted in London.

6.—H.T., aged 19, labourer out of work, 46 East Street, Southsea. I was unable to trace how this case had been contracted, the patient had not been out of Portsmouth but had been in a large number of places looking for work. He had been vaccinated in three places in infancy, the case was a confluent one and he made complete recovery.

7.—M.K.F., aged 19, 2 Frensham Road. This patient was a dressmaker. The only source of infection that could be traced was the fact that the girls' father was ill with small-pox in the Darenth Small-pox Hospital. The case was a mild discrete one, and made a complete recovery. The patient had been vaccinated in two places in infancy.

8.—J.R., aged 36, a moulder. Common Lodging House, 15 Oyster Street. Came to Portsmouth on May 17th, left London stopping at Southampton, Winchester and Reading. Source of infection uncertain. Patient vaccinated in two places in infancy. Confluent case, complete recovery.

All the above cases were attended by me at the Small-pox Hospital.

It will be seen that although the disease was brought into the Borough on six separate occasions, in no single case (except in the case of H.G. and A.G. in which the infection was apparently direct from the Small-pox Hospital) did the infection spread or a second case occur. Had we been subjected to an epidemic of even small dimensions, the results on the Southsea season, coming as these cases did, in the spring of the year, would have been most disastrous. These cases entailed a considerable amount of extra work on the department, and we experienced a very anxious time until a sufficient period had elapsed to enable us to rest assured that the steps taken for vaccination, disinfection, and isolation, had been successful, and that all fear of an epidemic had been averted.

In every case the house or ship in which the patient had been was thoroughly disinfected, all bedding, clothing, &c., was taken to Milton Hospital and disinfected by steam, and finally everybody with whom it was ascertained the patient had been in contact was sought out and advised to undergo vaccination.

With reference to the above cases I would draw attention to the following.

In the first place it was well for the Borough that the cottages at the Locks had been secured, for which we are indebted to Councillors Gillett and Gill; without the public spirited action of these gentlemen we should probably have experienced considerable difficulty in dealing with the cases. The one cottage with the outbuildings is convenient for administrative purposes, and now that an iron ward has been

erected we have accommodation for about a dozen patients. This is large enough to deal with stray imported cases, but in the event of an epidemic of any size either the Milton Hospital would have to be utilized or additional iron structures erected at the Locks.

A need was also felt of a few rooms in which to accommodate a family for one night so that the house in which a case of small-pox occurred could be shut up and completely disinfected.

Section 15 of the Infectious Diseases (Prevention) Act enacts that "The Local Authority shall from time to time provide, free of charge, temporary shelter or house accommodation with any necessary attendants for the members of any family in which any infectious disease has appeared who have been compelled to leave their dwellings for the purpose of enabling such dwellings to be disinfected by the Local Authority."

At present we have to depend on finding accommodation at Milton Hospital, but this is not a desirable place to which to remove a family, and moreover there is not always the room there to spare. In many towns there is erected a special house with baths and a disinfecting apparatus, so that when needed a family and all their belongings may be thoroughly disinfected. Such an establishment would be very useful in this Borough.

A difficulty was also experienced in getting nurses and a servant at a moments notice for the hospital when a case was notified, this may partially be got over in the future by allowing to live in the Hospital as caretakers a man and his wife who have had some experience in nursing.

It would also be advantageous to have a small disinfecting apparatus at the Small-pox Hospital to avoid taking small-pox infected articles to Milton Hospital for disinfection, as is the practice at present.

TABLE XII.

VACCINATION RETURNS—1st January to 30th June, 1902

Registration Sub-Districts comprised in the Vaccination Officer's District	Number of Births returned in the Birth List Sheets as registered from 1st January to 30th June, 1902	Number of these Births duly entered by 31st January, 1902, in Columns 1, 2, 4 and 5, of the Vaccination Register Birth List Sheets, viz.:				Number of these Births which on 31st January, 1902, remained unentered in the Vaccination Register on account (as shown by Report Book) of				Number of these Births remaining on 31st January, 1902, neither duly entered in the Vaccination Register (columns 1, 4, 5, 6 and 7 of this Return) nor temporarily accounted for in the Report Book (columns 8, 9 and 10 of this Return)
		Col. 1 Successfully Vaccinated	Col. 2 Insusceptible of Vaccination	Col. 2 Had Small-pox	Col. 4 Number in respect of whom Certi- ficates of Con- scientious Objection have been received	Col. 5 Dead unvaccinated	Postpone- ment by Medical Certificate	Removal to Districts the Vaccination Officer of which has been duly appraised	Removal to places un- known, or which cannot be reached; and cases not having been found	
1	2	3	4	5	6	7	8	9	10	11
1. North End and Buckland ...	705	598	4	—	6	77	13	5	1	1
2. Kingston and East Southsea ...	573	492	5	—	6	45	16	7	1	1
3. Portsea and Landport ...	719	599	—	—	2	95	15	5	3	—
4. Portsmouth and Mid-Southsea	520	451	5	—	1	47	10	4	2	—
Totals ...	2517	2140	14	—	15	264	54	21	7	2

VACCINATION OF CHILDREN whose Births were registered in this District from Jan. 1st to Dec. 31st, 1901, inclusive.										
1. North End and Buckland ...	1466	1281	3	—	11	157	4	6	3	1
2. Kingston and East Southsea ...	1214	1050	8	—	10	124	3	11	7	1
3. Portsea and Landport ...	1568	1343	4	—	8	194	6	10	3	—
4. Portsmouth and Mid-Southsea	1039	890	8	—	12	112	1	11	5	—
Totals ...	5287	4564	23	—	41	587	14	38	18	2

VACCINATION RETURNS FOR PAST TEN YEARS.

Year	Number of Births returned in birth sheets so registered from 1st January to 31st December	Successfully Vaccinated	Insusceptible to vaccination	Had Small-pox	Dead unvaccinated	Postponement by Medical Certificate	Removed to Districts the Vacc. Officer of which has been appraised	Removed to places unknown	No of these births remaining	No. in respect of which Certificates of conscientious objections have been received
1892	4600	3987	19	...	435	28	24	99	8	...
1893	4706	4034	37	...	483	30	24	94	4	...
1894	4729	4147	20	...	412	46	18	82	4	...
1895	4896	4183	29	...	547	31	28	69	9	...
1896	4920	4329	25	...	476	31	35	20	4	...
1897	4924	4303	22	...	473	31	68	18	8	1
1898	4973	4243	37	...	518	32	46	26	10	61
1899	4981	4171	60	...	645	18	36	21	7	23
1900	5036	4385	16	...	521	26	27	20	4	37
1901	5287	4564	23	...	587	14	38	18	2	41
1902 (June)	2517	2140	14	...	264	54	21	7	2	15

Scarlet Fever.—This disease was rather prevalent during the year. 603 cases were notified, they were most frequent during the months of October and November, and due largely to the infection being spread at George Street Board School, Buckland. Special attention was paid to this school, the school teachers were advised to at once send home any child that showed any signs of sickness or sore throat, and to notify the names to me. Such children as were sent home were seen by me and not allowed to return until I was satisfied that they were not sickening for scarlet fever. It was subsequently discovered that a child who had been ill with a slight sore throat and had returned to school had in fact been suffering from a slight attack of scarlet fever, and there is little doubt that this child was responsible to a considerable degree for the prevalence of the disease amongst the children attending the George Street School. The school was afterwards disinfected and subsequent to that it was closed in order to relay the drains which were found to be badly out of order.

There were 14 deaths registered from scarlet fever, which was of a mild type. 339 cases were admitted to the Hospital of which 6 or 1·77 per cent. died; of the remaining 264 treated at home 8, or 3 per cent. proved fatal. At times the Hospital was found insufficient to admit all the cases who wished admission.

Every case was investigated and the house in which it occurred examined for sanitary defects, these were found in 166 or 27·5 per cent. of the cases.

TABLE XIII.

Showing the number of cases of SCARLET FEVER notified, the number of deaths, and the percentage of deaths to cases notified for the years 1884-1902.

Year	Cases notified	No. of Deaths	Percentage of Deaths to notified cases
1884	266	9	3.38
1885	314	5	1.59
1886	343	18	5.24
1887	647	26	4.02
1888	465	12	2.58
1889	728	11	1.51
1890	573	19	3.31
1891	326	9	2.76
1892	1023	18	1.76
1893	1176	32	2.73
1894	458	14	3.06
1895	311	7	2.25
1896	524	19	3.62
1897	699	11	1.57
1898	710	27	3.80
1899	578	22	3.80
1900	348	11	3.16
1901	452	15	3.31
1902	603	14	2.32
Total (19 years)	10544	299	2.83

Table showing the number of cases of SCARLET FEVER admitted to the Milton Hospital, the number of deaths, and the percentage of deaths to number of cases of Scarlet Fever.

Year	Cases admitted	No. of Deaths	Percentage of deaths to cases treated
1884	13	...	...
1885	16	...	...
1886	29	...	...
1887	56	1	1.78
1888	120	1	0.88
1889	278	1	0.36
1890	384	11	2.86
1891	180	3	1.66
1892	532	6	1.12
1893	503	6	1.19
1894	238	8	3.36
1895	177	2	1.13
1896	352	11	3.15
1897	413	9	2.17
1898	436	23	5.27
1899	333	6	1.80
1900	198	6	3.03
1901	270	6	2.20
1902	339	6	1.77
Total (19 years)	4867	106	2.27

Diphtheria.—There were 95 cases of diphtheria notified during the year, a slight increase as compared with last year ; on the other hand the number of deaths from this disease was only 62 against 70 last year. The death-rate per cent. of the cases notified was only 12·52, this is lower than in any previous year since 1884, which was the first in which a record was kept. 197 cases were removed to the Hospital, of these 23, or 11·67 proved fatal, compared with 39 or 13·08 per cent. of deaths amongst those treated at home.

As in the case of scarlet fever the Hospital was unable at times to accommodate all the patients who desired admission.

All the houses in which cases of diphtheria occurred were visited and as a result, sanitary defects were found in 144 or 29·1 per cent.

TABLE XIV.

Table showing the number of cases of DIPHTHERIA notified, the number of Deaths, and the percentage of Deaths to cases notified, for the years 1884 to 1902.

Year	Cases notified	No. of Deaths	Percentage of Deaths to cases notified
1884	174	41	23·44
1885	173	42	24·25
1886	232	55	26·72
1887	260	47	19·08
1888	128	17	13·28
1889	126	33	26·19
1890	212	47	22·69
1891	140	23	16·42
1892	121	26	21·48
1893	140	29	21·48
1894	139	34	24·46
1895	124	18	14·51
1896	124	20	16·12
1897	148	22	15·07
1898	283	54	19·08
1899	566	120	21·20
1900	568	104	18·30
1901	454	70	15·41
1902	495	62	12·52
Totals (19 years)	4607	874	19·00

Table showing the number of cases of DIPHTHERIA admitted to the Milton Hospital, the number of Deaths, and the percentage of Deaths to cases of Diphtheria admitted, for the years 1884 to 1902.

Year	Cases admitted	No. of Deaths	Percentage of Deaths to cases admitted
1884	4	1	25·00
1885	6	—	—
1886	11	1	9·09
1887	27	8	23·70
1888	23	—	—
1889	18	—	—
1890	64	18	28·12
1891	51	4	7·84
1892	27	6	22·22
1893	12	4	33·33
1894	38	8	21·05
1895	46	5	10·87
1896	41	4	9·80
1897	37	3	8·11
1898	118	19	16·10
1899	225	27	11·90
1900	211	28	13·27
1901	170	24	14·11
1902	197	23	11·67
Totals (19 years)	1325	183	13·80

Typhoid Fever.—448 cases of typhoid fever were notified in the Borough last year, of these 54 proved fatal. 105 cases were treated at Milton Hospital of which 13 or 12·38 per cent. died, compared with 41 or 11·38 per cent. of deaths amongst the 343 treated at home. As in the cases of the other infectious diseases the Hospital was not at times able to accommodate all the patients who wished for admission.

In connection with this disease I have on many occasions stated my belief that shell-fish were to a certain extent the cause of the cases of typhoid in the Borough, and in November and December of this year a number of cases of typhoid occurred, in which I was able definitely to show that oysters were solely responsible; with regard to these I presented the following report.

To the Chairman and Members of the Health Committee.

December 31st, 1902.

GENTLEMEN,

Supplementing the representation I made to you on December 17th, I now report more fully on the recent outbreak of typhoid fever caused by oysters.

My attention was first attracted by the number of notifications of typhoid fever that I received between December 4th and 14th. From its unusual prevalence, and especially from the number of cases that occurred in Southsea, which is usually free from this disease, it struck me that some special factor of infection was at work. Careful enquiries were instituted, and as a result I found that the sole condition that was common to the whole of the cases was the ingestion of oysters.

The shell-fish—including oysters, cockles, and mussels—sold in this town have long been regarded by me with suspicion as being the cause of occasional cases of typhoid fever, and I at once commenced investigations with a view to ascertaining whether they were the cause of the outbreak on this particular occasion.

(Subsequently cases of typhoid at Southampton and Winchester, supposed also to have been caused by oysters, were reported; of these

I cannot speak from personal knowledge, and have therefore taken on account of them, nor have been influenced by them, in forming my conclusions.)

The mere fact that all the persons attacked had eaten oysters was not enough to warrant the conclusion that these alone were the cause of the disease ; in order to be satisfied it was essential for the following propositions to be established :—

- 1.—That the oysters had been eaten at such a date previous to the onset of the disease as would be consistent with what we know as to the time typhoid fever takes to develop in man.
- 2.—That there was no other condition common to all or a large proportion of the cases which could be regarded as playing a causal part in the disease.
- 3.—That the oysters had not only been exposed to sewage contamination, but that this sewage actually contained the specific infection of typhoid fever.

As the implication of oysters must prove a very serious matter for those engaged in the oyster fisheries, I decided to make no public statement until I had satisfied myself with regard to each of the above propositions.

With regard then to the date on which oysters were eaten by the persons suffering from the disease. I must explain that in all infectious diseases, after the infectious matter has been received into the body, a certain period elapses before the disease becomes evident, during which, in fact, the disease is developing, and this is termed the "incubation period." This is not the same in every case, but as a rule in typhoid fever it is from ten to fourteen days ; but it may be as short as eight or as long as twenty-eight days. In the list attached to this report the dates in each case are given—when the oysters were eaten and when the disease became manifest. Without going into detail, I may say at once that in every one of the twenty-five cases the date of the eating of the oysters was consistent with the assumption that they were the cause of the disease. The incubation period is not the same in all the cases, and whether the disease takes a longer or shorter time to develop probably depends to some extent on the condition of the person at the time he becomes infected and also on the amount of the poison he has absorbed.

It was next necessary to see if there was any condition other than oysters common to all the patients to which the disease could reasonably be attributed. The usual factors in the spread of typhoid fever are—water, milk, other articles of diet, defective drainage, and personal contact. In the cases in question one of these, namely water, was common to the whole. All were supplied by the Company's water, but inasmuch

as there is no evidence whatever that the water is polluted, and having regard to the smallness of the outbreak, the idea that the disease was waterborne may be ignored.

Milk similarly may be excluded, for I find on making enquiries that to the twenty-five cases there were thirteen separate milk supplies, and that no one supply went to more than five of the cases.

As regards defective drainage a certain amount of discrimination must be used in estimating the part this could have played. In ten of the cases careful examination of the premises revealed defects in the drainage system. A number of these, however, were very slight, such as a defect in the ventilating shaft or an insufficient flush to the w.c. pan, &c. Seeing then that in some of the cases there were no drainage defects at all, and that in some of the others the defects were very slight, there is no reasonable room for doubt that this outbreak was due to a cause independent of drainage.

Personal contact can only be regarded as having caused the disease in Case 12, and even here the patient had also eaten oysters within the incubation period.

We now come to articles of diet other than milk and water. The number of these to which the spread of typhoid has been attributed is few. None of them have the typhoid bacillus unless it is introduced by means of sewage pollution, and moreover, as the typhoid bacillus is destroyed by prolonged heating at 60° C. or by a few minutes at 100° C., it is evident that the articles of diet are restricted at once to uncooked or only partially cooked food. Now in all the cases in question the one common article of diet was oysters, and I at once instituted enquiries to ascertain if these fulfilled the conditions of the third proposition, namely: had they been infected with the specific organism of typhoid fever? It was found that in every case the oysters had come from the Emsworth Oyster Fisheries. As I had on previous occasions, in connection with the conditions influencing the health of the inhabitants of this borough, visited amongst other places the Emsworth Oyster Fisheries, I was well aware that the sewage discharges in dangerous proximity to these beds. I therefore communicated with Dr. Lockhart Stephens, the Medical Officer of Health of Emsworth, in order to ascertain if there were cases of typhoid in Emsworth at such dates as would correspond with the infection of the oysters with the typhoid bacillus. Dr. Stephens informed me that there had been several cases of typhoid in Emsworth during the year, that it had been most prevalent during the last three months, and that there had been in fact, since October 22nd, thirteen cases, in eight of which the excreta from the patients was discharged into the sewers which in turn discharged

within 50 yards of the oyster beds. Here, therefore, is a chain of evidence without one missing link, in face of which it is impossible to come to any other conclusion but that the sole cause for these cases of typhoid was the ingestion of oysters from the specifically infected fisheries at Emsworth. It is true that this evidence is merely presumptive, but it must be borne in mind that in fixing on the cause of any epidemic presumptive evidence is all that can be obtained, but it would surely be difficult to imagine presumptive evidence stronger than has been forthcoming in the above cases.

The point will naturally occur that there must be numbers of people who have eaten oysters from Emsworth who have not contracted typhoid. It must be remembered, however, that in the first place, everyone is not susceptible to the disease; and secondly, that in all probability only one particular bed or one lot of oysters was infected. It is unreasonable to suppose that every oyster would be infected, and is quite possible that only those people were affected who were subject to one or other of the following conditions:—

- (a) They may have eaten a specially large number of the oysters and so have had a large quantity of the typhoid poison.
- (b) They may have eaten only a few but these few may have been contaminated with a large amount of the typhoid poison.
- (c) They may have been in a delicate state of health or have been constitutionally very susceptible to the disease.

That only one particular batch was affected is, I think, evident from the fact that in nearly all the cases (18 out of 25) the oysters were eaten between the 10th and 20th of November. The few in which oysters were eaten after that date may possibly be accounted for by some of the first batch of infected oysters being mixed in the shops with later supplies.

I also have been asked why a bacteriological examination was not made to demonstrate the presence of the typhoid bacillus actually in the oyster. The reasons why I have not done so are these. In the first place it is unnecessary to prove that oysters, cockles and mussels may contain the typhoid bacillus; this has already been fully demonstrated by Professor Klein in the researches undertaken by direction of the Local Government Board, the results of which have been published in the various annual reports of the Medical Officer to the Board. In the second place the oysters that caused the disease were eaten some 10, 12 or 14 days previous to the disease becoming pronounced, and consequently if, as I suggest, only one batch of oysters were infected, although it is just possible that one might accidentally select a second batch of oysters that were also infected, the chances are very much against doing so, and such negative evidence although it would be valueless, might prove misleading to those of the public who might not understand the true bearings of the case. Failure to find the typhoid bacillus would, I repeat, be worthless evidence as regards

the oysters that I allege were responsible for the disease and which were taken from the beds some time previously.* The above is always a difficulty in tracing an outbreak of typhoid fever, the M.O.H. does not become aware of the epidemic until 14 days or more after the typhoid poison has been distributed, and when the vehicle of transmission has in all probability been destroyed or is unobtainable.

The evidence, then, that has been forthcoming—the fact that all the 25 persons attacked ate oysters about the time they must have contracted the disease; that these oysters came from the Emsworth Oyster Fisheries, that the Fisheries were open to contamination from the specific organism of typhoid fever, and finally that there is no other condition common to all the cases which would account for the outbreak, leaves no room for doubt that to oysters alone must be attributed the present epidemic.

The next step for your consideration is how similar outbreaks can be prevented in the future.

It is a sorrowful confession that in the present state of the law the Sanitary Authority is almost helpless. The only step we could take was to warn the public not to eat the oysters. This was done without any loss of time as soon as it became evident that the oysters were infected. But this locking the door after the horse is stolen is obviously a very poor expedient, and if nothing further is done this outbreak will be forgotten and things go on as in the past until another occurs. There is legally no power for you as a Sanitary Authority to prevent the sale of oysters because they may come from a polluted source.

Although you may seize and destroy a tuberculous carcass, or unsound food, yet you have not the least control over oysters which you may happen to know have been actually exposed to typhoid infected sewage, and which will be practically certain, sooner or later, to be the active agents in the spread of disease and death.

Authoritative warnings as to the dangers from the pollution of oyster beds by sewage have in the past been issued only to be ignored. In 1896 the Local Government Board issued a special report on the Oyster Fisheries in the Kingdom, in which the following comments on the Emsworth oyster beds occur: "It would hardly seem necessary in view of the relations between the sewer outlets and the storage pits depicted on the accompanying map, to dwell upon the gross contaminations to which the oysters here stored must be liable. In no single instance is Emsworth

* Since writing the above Report, I believe a bacteriological examination of the oysters and the water in the beds has been made by Professor Klein, with a result that although there was abundant evidence of sewage pollution the typhoid bacillus itself was not discovered.

sewage discharged in tidal waters in other than a crude condition." Thus Dr. Bulstrode wrote in 1896; practically no attention, however, has been paid to this warning; had it been acted upon there is little doubt the present outbreak, and possibly other cases of typhoid fever in the past, would have been avoided. Nor is Emsworth an isolated case; in the same year Dr. Bulstrode reported on the Oyster Layings of Brightlingsea Creek as follows: "The sewage of Brightlingsea is discharged by three separate outlets on to the foreshore. At the time of my visit each of these outfalls was discharging offensive matter; the middle one, that passes through Mr. Stone's yard, being particularly offensive. Near to the points of discharge on the foreshore of the creek are numerous oyster layings, and at low tide the sewage may be seen emerging from the outfalls, and after passing over the mud, running along the back of the oyster layings hereabouts. Under these circumstances it is difficult to understand how the oysters near can fail to be polluted thereby." This warning also was ignored. Here too an outbreak of 26 cases of typhoid fever occurred in 1897, with reference to which a Local Government Board Inspector reported "that in each case there was no condition, irrespective of oysters, to which infection could be attributed."

From the foregoing examples it is amply evident that warnings are simply waste of time, stronger measures must be adopted, and there is little doubt that the only effectual remedy to be obtained is from fresh legislation. I strongly advise, therefore, that your efforts be in this direction, and in order to carry additional weight I would suggest that an effort be made to co-operate with other Sanitary Authorities in making a strong representation to Government for the provision of the legislation necessary for the protection of the public. It might be advisable to invite to attend a conference on the subject, not only delegates from other Sanitary Authorities, but also as many of our Parliamentary Representatives as possible, together with representatives from the Fisheries Board, in order that a thoroughly strong representation be made on the matter. I do not pretend here to indicate the lines the legislation should take, but I would mention that besides oysters, infected cockles and mussels also undoubtedly cause typhoid, and should receive attention. There is also the question of imported shell-fish to deal with, for it is obviously little use protecting our own fisheries if shell-fish are allowed to be imported from foreign sources, where no precautions whatever are observed.

In concluding this report I may add that as the public in this town has now been sufficiently warned, I do not anticipate any further outbreak at present, but this is the time, whilst the circumstances are fresh in the memory of the public, to urge the enactment of the necessary protective

legislation, as, if nothing is done now, in all probability the matter will be allowed to drop until we are face to face with another and possibly severer epidemic.

I attach a list of the cases concerned in the present outbreak.

I have the honor to be, Gentlemen,

Your obedient Servant,

A. MEARNS FRASER, M.D.,
Medical Officer of Health.

CASES.

- 1.—Mr. W. A., Grove Road, Southsea. Oysters several times up to November 16th; taken ill on November 27th. Notified on December 6th.
- 2.—Mr. C. H. W., South Parade, Southsea. Oysters on November 22nd, and three or four times previously; taken ill on December 1st. Notified on December 7th.
- 3.—Mrs. B., Commercial Road, Landport. Oysters on November 11th; taken ill on December 1st. Notified on December 8th.
- 4.—Mr. P. B., Commercial Road, Landport. Oysters on November 12th; taken ill on November 25th. Notified on December 8th.
- 5.—Mr. S. B., Commercial Road, Landport. Oysters on November 12th; taken ill on November 28th. Notified on December 8th.
- 6.—Miss C. B., Commercial Road, Landport. Oysters on November 12th; taken ill December 5th. Notified on December 8th.
(The above four were members of the same family.)
- 7.—Mr. W. S., North End Grove, North End. Oysters on November 11th; taken ill on November 21st. Notified on December 7th.
- 8.—Mr. W. C., Union Street, Portsea. Oysters on November 8th; taken ill on November 29th. Notified on December 9th.
- 9.—Mrs. F. G., Shaftesbury Road, Southsea. Oysters on November 13th; taken ill on November 22nd. Notified on December 9th.
- 10.—Mrs. P. W., Gains Road, Southsea. Oysters on November 22nd and 24th; taken ill on December 3rd. Notified on December 10th.
- 11.—Miss F. A., Lake Road, Landport. Oysters on November 12th; taken ill on November 20th. Notified on December 10th.
- 12.—Miss E. A., Lake Road, Landport. Oysters on November 12th; taken ill on December 5th. Notified on December 10th.
(The above two are members of the same family, and as the second case E. A. was taken ill fifteen days after the first, it is possible the second case was caused by personal infection, and therefore only indirectly due to Oysters.)
- 13.—Mrs. K., Shaftesbury Road, Southsea. Oysters several times from November 1st to the 10th; taken ill on November 27th. Notified on December 11th.

- 14.—Mr. J. H., Nelson Road, Southsea. Oysters on November 10th and 18th ; taken ill November 29th. Notified on December 12th.
- 15.—Miss L. B., Commercial Road, Landport. Oysters on November 21st and 29th ; taken ill Dec. 2nd. Notified on December 12th.
- 16.—Mr. W. L., Osborne Road, Southsea. Oysters taken on numerous occasions during November ; taken ill November 27th. Notified on December 14th.
- 17.—Mr. E. B. A., Nightingale Road, Southsea. Oysters on November 26th, 30th, and December 7th ; taken ill December 9th. Notified on December 14th.
- 18.—Mrs. E. H., Somers Road, Southsea. Oysters on November 21st ; taken ill December 7th. Notified on December 16th.
- 19.—A. H., Somers Road, Southsea. Oysters on November 21st ; taken ill December 12th. Notified on December 16th.
- 20.—Mrs. C. T., St. Ronan's Avenue, Southsea. Oysters on November 14th ; taken ill on December 2nd. Notified on December 18th.
- 21.—K. B., Derby Road, North End. Oysters on November 16th ; taken ill on December 8th. Notified on December 20th.
- 22.—Miss H. W., Osborne Road, Southsea. Oysters November 14th ; taken ill December 6th. Notified on December 18th.
- 23.—Mr. S. W., Osborne Road, Southsea. Oysters three times a week during November ; taken ill on Nov. 30th. Notified on Dec. 16th.
- 24.—Mr. C. P., Hampshire Terrace, Southsea. Oysters on December 6th and 13th ; taken ill on December 20th. Notified on December 21st.
- 25.—Mrs. F. A., King Street, Portsea. Oysters nearly every day from Nov. 17th to 27th. Taken ill Dec. 7th ; notified on Dec. 19th.

Acting on the suggestion made in this Report, the Local Government Board was asked to receive a deputation from the Portsmouth Corporation but a reply was received that the Board did not think it necessary. From this I hope we may conclude that the matter is receiving the Board's attention and that the result may be a Bill in Parliament drafted so as to protect the public against such dangers in future. It is to be hoped however, that if any such Bill is promoted it will proceed on different lines to the Bill promoted in 1899, which if it had become law would have been absolutely useless for the purpose for which it was intended.

Every case was investigated and the house in which the disease occurred examined for sanitary defects, these were found in 163 or 36·3 per cent. of the cases.

TABLE XV.

Table showing the number of cases of TYPHOID FEVER notified, the number of Deaths, and the percentage of Deaths to cases notified, for the years 1884 to 1902.

Year	Cases notified	No. of Deaths	Percentage of Deaths to cases notified
1884	539	58	10.76
1885	762	93	11.48
1886	1249	124	9.90
1887	554	53	9.52
1888	313	27	8.60
1889	317	32	10.01
1890	457	50	10.94
1891	265	33	12.40
1892	330	38	11.51
1893	361	54	14.96
1894	201	25	12.44
1895	258	33	12.74
1896	235	27	11.49
1897	320	42	13.08
1898	305	43	14.10
1899	531	75	14.12
1900	1083	92	8.49
1901	324	43	13.27
1902	448	54	12.05
Totals (19 years)	8842	996	11.26

Table showing the number of cases of TYPHOID FEVER admitted to the Milton Hospital, the number of Deaths, and the percentage of Deaths to cases of Typhoid Fever admitted, for the years 1884 to 1902.

Year	Cases admitted	No. of Deaths	Percentage of Deaths to cases notified
1884	2	...	...
1885	6	...	...
1886	66	4	6.06
1887	37	1	2.70
1888	35	...	...
1889	48	6	12.50
1890	114	5	4.38
1891	51	4	7.84
1892	81	6	7.41
1893	94	3	3.19
1894	53	3	5.85
1895	83	4	4.82
1896	83	6	7.23
1897	102	11	10.78
1898	92	14	15.31
1899	96	12	12.50
1900	157	18	11.46
1901	101	11	10.89
1902	105	13	12.38
Totals (19 years)	1406	121	8.60

Diarrhœa.—The Borough as a whole was very free from diarrhœa, there was, however, one important exception. A severe and fatal outbreak occurred during September in the neighbourhood of Goldsmith Avenue. The total number of deaths throughout the year was 159. Of these 19 occurred in the district referred to, and on October 1st I reported as follows on the outbreak generally and the special steps taken.

REPORT ON EPIDEMIC DIARRHŒA IN THE NEIGHBOURHOOD OF GOLDSMITH AVENUE.

TO THE CHAIRMAN AND MEMBERS OF THE HEALTH
COMMITTEE.

October 1st, 1902.

Gentlemen,

I have to report to you more fully on the prevalence of Epidemic Diarrhœa in the neighbourhood of Goldsmith Avenue.

I would first point out that what makes this outbreak remarkable is that this year the climatic conditions have been quite the opposite to those usually considered favourable to this disease, and, as a matter of fact, there have been generally throughout the Borough fewer fatal cases than usual, fewer in fact than in any year since 1893. Still, in this one particular district the disease has not only been exceptionally prevalent, but it has been of a most severe and fatal character, and has attacked not only babies, who are the usual sufferers, but fifteen deaths have also occurred above the age of one year.

The district I refer to is that on both sides of Goldsmith Avenue, including Frensham, Grayshott, Haslemere, Frogmore, Ruskin, Apsley, and Carisbrooke Roads. This area contains 212 inhabited houses, containing a population of 817. Among these there have been 102 cases of Epidemic Diarrhœa, of which the following 19 were fatal :

10 Frogmore Road	T. A. D. Millett	11 mths.	Sept. 8	Phthisis & Cholera nostras
15 Do.	K. Elizabeth Smith	15 yrs.	„ 22	
18 Do.	Dorothy Ahrens	1 $\frac{1}{2}$ yrs.	„ 10	
18 Do.	Mrs. K. Ahrens	35 yrs.	„ 30	
34 Do.	E. Brown	1 $\frac{1}{2}$ yrs.	„ 9	
40 Do.	Sidney Harris	10 mths.	„ 1	
1b Ruskin Road	Leonard Wellstead	4 yrs.	„ 7	
2 Do.	Hannah N. Ford	77 yrs.	„ 25	
Do.	Maria Snow	54 yrs.	„ 8	
24 Carisbrooke Road	Ivy Seymour	1 $\frac{9}{12}$ yrs.	„ 2	
9 Frensham Road	Grace Herbert	7 yrs.	„ 16	
9 Do.	Victor Herbert	5 yrs.	„ 22	
9 Do.	Leonard Herbert	3 yrs.	„ 22	
9 Do.	Ivy Herbert	10 mths.	„ 22	
11 Do.	John Whineray	3 yrs.	„ 7	
11 Do.	Olive Whineray	5 yrs.	„ 11	
19 Do.	Fred Lytton	3 mths.	„ 23	
17 Greyshot Road	Reg. Hotspur	1 $\frac{3}{12}$ yrs.	„ 10	
17 Do.	Hilda Hotspur	1 $\frac{3}{12}$ yrs.	„ 6	
Total ...		19 Deaths		

Deaths under 1 year	... 4	Deaths 15 years	... 1
„ 1—2 years	... 5	„ 35 „	... 1
„ 2—3 „	... —	„ 54 „	... 1
„ 3—4 „	... 2	„ 77 „	... 1
„ 4 „	... 1		
„ 5—6 „	... 2		—
„ 7 „	... 1		19

To appreciate the full significance of the foregoing it is necessary to consider the usual causes and conditions associated with this disease. Since the year 1888, when the classical Report of Dr. Ballard on the subject was presented to the Local Government Board, the disease has occupied the attention of Medical Officers of Health to a considerable extent, and the following are found to be the conditions favourable to its prevalence. It is an almost invariable rule that Epidemic Diarrhœa is not present to any considerable degree unless there is a deficiency of rainfall accompanied by a high temperature, or, at least, until the temperature registered by the 4 ft. earth thermometer has reached 56 degrees Fahrenheit; neither of these, however, are the actual causes of the disease, it is really due to bacteria, to whose growth and spread the above conditions are simply the most suitable. This microbe is specially present in polluted soil and in accumulations of dirt and refuse of all description. And we find accordingly that epidemic diarrhœa is essentially a disease that affects the inmates of the dirtiest and lowest class of houses, and is specially fatal to babies under one year. Still further amongst babies I have found that 90 per cent. of the cases are amongst “bottle fed” children, who are, of course, far more liable to food

pollution than are those brought up on the breast. Turning now to the district in question, it is at once apparent, from my previous remarks, that this is not at all the sort of neighbourhood which we should expect to suffer from Epidemic Diarrhoea; also there has been no deficiency of rain; the heat has not been excessive; the families that have suffered are by no means of the lowest classes, being composed of the respectable working and middle classes, their houses are new, clean, and as a rule, well kept. The area in question, so far from being shut in and densely populated, is, in fact, one of the most open in the Borough. The drains of the houses are sound, and have all been subjected successfully to the water test when the houses were erected within the last year or eighteen months. The only one of the conditions that I have mentioned as associated with Epidemic Diarrhoea that can be noticed in the district is the presence of accumulations of refuse and the usual litter of rubbish associated with the making of bricks in this town. And I would here state emphatically that to this accumulation of refuse accompanied by the brickmaking I solely attribute the epidemic that we have just experienced. The heat of the refuse and the brickmaking have afforded a breeding ground to millions of flies that have been passing backwards and forwards from the refuse to the houses, and I attribute the whole of the epidemic to the infection of the food in the houses by these insects. On visiting the houses in question I find that in all, almost without exception, the occupants have suffered from a perfect plague of flies. They told me every article of food is covered at once with flies, that they have to keep all the food on the table at meal-times covered up, and that even then two or three flies will settle on a mouthful before it can be conveyed from the plate to the mouth. It is little wonder, then, considering that the flies have probably, before entering the houses, been feeding on refuse, that the food should rapidly become infected with the microbes of Epidemic Diarrhoea, which are always to be found in polluted soils during warm weather. Once the microbes have been conveyed by means of these flies to articles of food, and especially to milk, they increase at an enormous rate till in a few hours a milk that to all appearance was perfectly good, would really contain millions of these micro-organisms, with a result that, being taken, it would at once set up irritation of the intestine, resulting frequently in fatal diarrhoea. I repeat that to this, and this alone, I attribute the diarrhoea in the Goldsmith Avenue district.

On visiting the houses I found that the walls, pictures, and furniture were covered with fly-marks. To convey some idea as to the state of the walls, I may mention that in some houses it is not possible to put the tip of the finger on the walls without touching two or three marks. The father of some of the children that died told me that in spite of all they could do they could not prevent flies crawling in and out of the mouths and eyes of their children as they lay dying.

As regards the preventative measures that have been adopted, as soon as I learnt from the death returns that Epidemic Diarrhoea was prevalent in this neighbourhood I visited the spot and had a house-to-house visitation made in order to remedy any sanitary defects that might exist, and here I may mention that beyond one or two slight defects there was nothing that called for special attention. I found that from a few there were complaints of smells from some of the manholes and road gullies. These at once received attention from the Borough Engineer's Department, and, as you are aware, a recommendation has been sent on to the Drainage Committee that the road ventilators should be closed up and ventilating shafts erected in their place. This question of road ventilators is one that I have often referred to, and I would repeat the advice that I have before given, that I believe it would be advantageous if all road ventilators were done away with, and any ventilation to the sewers that is necessary afforded by means of vertical shafts. I also saw the Deputy Borough Engineer with a view to having the streets frequently moistened with water, to which disinfectant had been added.

At each house copies of leaflets were left giving advice as to the best means to be adopted to prevent the infection of food. Disinfectants were also left at the houses, and notice given that more could be obtained on application at the Town Hall.

Other steps that were taken were to get the nearest refuse heap, which is situated at the north-east corner of Carisbrooke Road, covered with six inches of mould, and a letter was also written to the brickmakers at the back of Frogmore Road warning them not to erect any more clamps immediately at the rear of the houses in that road.

It cannot be expected, however, that by a few hasty measures it is possible to undo all the harm that has been effected by years of dumping down of rubbish in various parts of the Borough. It must be borne in mind that this is not the only neighbourhood that has suffered from refuse heaps, and that in all probability the occupants of the houses that are yet to be built over the sites of old refuse heaps will, in the future, suffer from diarrhoea and typhoid to some, if not the same, extent as the inhabitants of the Goldsmith Avenue district, unless every stringent means are taken to prevent it.

I do not expect many more cases of Epidemic Diarrhoea this year, and having adopted all possible measures for dealing with this present epidemic, it now remains to take the necessary steps for the prevention of the occurrence of similar outbreaks in the future. This has already been very fully discussed in my Annual Report for 1899, to which I would refer you. I would only mention here that the one thing I regard as the most important is the proper disposal of house refuse. Of all the means of

disposal that are available I regard the present system as the worst, and it seems to me that the only really satisfactory method is to deal with it in a modern and properly constructed destructor or destructors.

I have the honour to be, Gentlemen,

Your obedient servant,

A. MEARNS FRASER, M.D.,

Medical Officer of Health.

Health Department,

Town Hall,

Portsmouth.

October 1st, 1902.

Supplementing the above report I would now add the following observations :

As regards the death of one of the children, Victor William Herbert, an enquiry was held by the Coroner, and after hearing the evidence of several medical gentlemen who had attended patients in this district, the Jury returned a verdict that the " cause of death was entero-colitis, brought about by contamination of food by bacteria brought by flies from the refuse heaps in the neighbourhood." This verdict was in accordance with the evidence given by the medical and lay witnesses, and was arrived at after a visit to Goldsmith Avenue had been made by the Jury.

Before making the above report, I decided, although I had in my own mind no doubt as to the cause of the epidemic, to request the opinion of the medical men in attendance on cases in this neighbourhood. A circular letter was therefore sent to all the medical men whom I ascertained were attending cases asking them if they had formed any opinion as to the cause of the outbreak. Out of the fifteen medical men thirteen replied that they considered the outbreak due to the refuse in the neighbourhood, one that it was due to the refuse combined

with insufficient flushing of the drains and brickmaking, and one gentleman replied that he had not had sufficient experience in the district to form an opinion. Now I mention this because after the outbreak, and after my report had been presented, several statements were made in public to the effect that non-ventilation of the sewers, non-flushing of the sewers, and the condition of the urinals in Fratton Park Football Ground were the cause of the disease. I wish to disassociate myself entirely from those views, and in so doing I am supported by an overwhelming preponderance of medical opinion. There was in my opinion no reason why there should have been an epidemic of diarrhoea in Goldsmith Avenue except for the presence of rubbish combined with the brickmaking in the neighbourhood.

Although at the time of making my report I stated my belief that flies were the agents by which pollution of the food in the houses was effected I had no actual proof that this was possible. Since then, however, experiments by Majors Firth and Horrocks of the R.A.M.C. have been published which prove conclusively that ordinary house flies can and do convey bacteria from polluted material to objects on which they may walk, rest, or feed, and that the infective material is carried on their legs, wings, heads, and bodies.

TABLE XVI.

Showing the relationship of TEMPERATURE and FATAL CASES of
DIARRHŒA.

Week ending	Temperature of Air		Temperature of Earth Thermometer		Total Rainfall in inches	Deaths from Diarrhœa
	Mean of Maximum	Mean of Minimum	1 Foot	4 Feet		
1902						
July 19th ...	73·86	54·30	65·3	60·2	0·37	2
„ 26th ...	64·07	53·28	60·8	60·1	0·54	1
Aug. 2nd ...	65·64	54·00	61·2	59·5	0·89	1
„ 9th ...	65·80	56·43	62·6	59·7	0·74	2
„ 16th ...	66·14	53·30	60·4	59·6	0·65	1
„ 23rd ...	65·64	56·93	62·5	60·1	1·44	14
„ 30th ...	69·86	56·14	63·0	60·5	0·40	26
Sept. 6th ...	67·07	57·71	63·2	60·8	0·37	34
„ 13th ...	59·74	56·24	61·4	60·8	0·12	20
„ 20th ...	62·43	48·71	57·3	59·8	0·11	18
„ 27th ...	65·53	49·79	57·2	58·6	0·02	16
Oct. 4th ...	55·68	46·64	53·7	57·6	0·15	8
„ 11th ...	58·63	47·26	52·2	55·6	0·53	6
„ 18th ...	58·21	49·43	53·8	55·5	0·88	1
„ 25th ...	57·98	45·21	51·3	54·1	0·23	2
Nov. 1st ...	56·10	42·00	50·6	54·1	0·07	2

Measles.—Seventy deaths from Measles were registered in the year, compared with eighty-two in the previous year. Nearly the whole of the deaths occurred in Landport and Kingston. As I reported fully on this disease in my last report, I have nothing further to add this year.

In London, Measles is now added to the list of notifiable diseases. I should not advise you to take that step in this Borough, as I think it very doubtful if much good will result from notification alone, unaccompanied by early and complete isolation of the sick. In this town certainly it would be quite impossible to isolate cases even if notified, and as in quite half the number of cases that occur no doctor is called in, probably only a percentage of the cases would be notified and this would render the notification of the remainder of very little value. The expense of notification would be very great; I estimate it would in some years be between £200 and £300. I think the money might be more profitably employed.

TABLE XVII.

WEEKLY RETURN of Cases of Infectious Diseases reported in accordance with the Infectious Disease (Notification) Act, 1889, during the year 1902.

WEEK ENDING			Small-pox	Scarlet Fever	Diphtheria	Fevers		Puerperal	Erysipelas	Croup	Total	
						Enteric	Con- tinued					
1902												
January	4	....	..	17	12	7	..	..	..	..	36
"	11	....	..	9	25	4	..	..	..	..	38
"	18	....	..	8	13	8	..	1	..	..	30
"	25	....	..	21	16	1	..	..	1	..	39
February	1	....	..	5	14	3	..	..	..	..	22
"	8	....	1	13	16	2	..	..	1	..	33
"	15	....	..	8	6	1	1	..	..	..	16
"	22	....	..	12	11	3	..	1	2	..	29
March	1	....	..	18	11	2	1	..	..	1	33
"	8	....	1	14	14	2	..	..	2	1	34
"	15	....	..	10	9	1	..	..	..	..	20
"	22	....	1	11	9	3	..	1	1	..	26
"	29	....	1	6	11	1	..	..	2	..	21
April	5	....	1	9	5	2	..	1	1	1	20
"	12	....	1	4	10	2	..	..	2	..	19
"	19	....	..	7	9	3	3	1	1	..	24
"	26	....	..	10	8	1	..	..	1	..	20
May	3	....	..	14	14	4	1	..	..	..	33
"	10	....	1	16	3	9	1	..	3	..	33
"	17	....	..	26	5	4	..	..	1	..	36
"	24	....	..	14	5	10	1	..	1	1	32
"	31	....	..	10	7	19	2	..	2	..	40
June	7	....	1	7	2	27	..	..	..	..	37
"	14	....	..	6	7	11	..	..	..	..	24
"	21	....	..	7	6	12	1	..	..	..	26
"	28	....	..	16	11	23	2	..	1	..	53
July	5	....	..	18	7	23	4	..	1	..	53
"	12	....	..	10	7	13	..	..	..	..	50
"	19	....	..	13	12	10	..	1	1	..	37
"	26	....	..	12	2	6	..	..	2	..	22
August	2	....	..	6	5	20	3	..	1	..	35
"	9	....	..	6	7	20	1	..	1	..	35
"	16	....	..	3	7	8	4	..	..	..	22
"	23	....	..	12	5	11	2	..	..	..	30
"	30	....	..	4	2	18	1	1	2	..	28
September	6	....	..	5	5	11	..	..	..	..	21
"	13	....	..	8	8	12	1	..	1	..	30
"	20	....	..	7	6	16	..	..	..	..	29
"	27	....	..	8	7	17	1	1	1	..	35
October	4	....	..	8	6	9	1	..	1	..	25
"	11	....	..	15	11	2	..	..	..	..	28
"	18	....	..	9	10	7	..	..	2	..	28
"	25	....	..	24	11	8	..	..	2	..	45
November	1	....	..	15	14	4	..	..	..	..	34
"	8	....	..	17	11	4	..	..	..	..	32
"	15	....	..	20	12	7	..	..	1	..	40
"	22	....	..	19	12	6	..	..	1	..	38
"	29	....	..	15	12	3	..	1	2	..	33
December	6	....	..	9	12	7	..	..	..	1	29
"	13	....	..	8	16	24	..	..	1	..	49
"	20	....	..	17	16	11	1	..	..	..	45
"	27	....	..	9	10	4	..	..	1	..	24
January	3	....	..	8	3	2	..	..	1	..	14
Total			..	8	603	495	448	32	9	50	5	1645

TABLE XVIII.

Showing the number of Infectious Diseases reported to the Medical Officer of Health under the Infectious Diseases (Notification) Acts of 1889 and 1899.

Year	Small-pox	Scarlet Fever	Diphtheria	Fever		Puerperal Fever	Erysipelas*	Membranous Croup	Totals
				Enteric	Con- tinued				
1885	8	314	173	762	...	2	...	...	1259
1886	7	343	232	1249	...	14	...	...	1845
1887	23	647	260	554	...	11	...	...	1495
1888	3	465	128	313	...	11	...	...	920
1889	6	728	126	317	...	6	...	...	1183
1890	...	573	212	457	125	4	...	...	1371
1891	...	350	138	265	52	15	...	...	820
1892	...	1023	121	330	76	2	...	...	1552
1893	6	1153	135	366	69	25	...	...	1754
1894	22	458	139	201	49	9	...	...	878
1895	...	311	124	258	62	15	...	...	770
1896	6	524	124	235	51	18	...	...	958
1897	...	699	148	320	64	19	...	...	1250
1898	...	710	283	305	44	15	...	...	1357
1899	1	578	566	531	32	17	...	...	1725
1900	...	348	568	1083	52	20	...	...	2071
1901	1	452	454	324	25	13	36	1	1306
Totals	83	9676	3931	7870	701	216	36	1	22514
Means	4.8	569.1	231.2	462.9	41.2	12.7	...	...	1324.3
1902	8	603	495	448	32	9	50	5	1650

* Not a notifiable disease in this Borough until the passing of the Infectious Diseases (Notification) Extension Act, 1899.

TABLE XIX.

Number of Patients admitted to the Hospital for the Years 1883 to 1902.

DISEASES	1883	1884	1885	1886	1887	1888	1889	1890	1891	1892	1893	1894	1895	1896	1897	1898	1899	1900	1901	1902
Small-pox	...	5	1	8	7	20	4	6	1	...	...	22	...	6	...	...	1	...	1	8
Scarlet Fever	...	1	13	16	29	56	120	278	384	180	503	238	177	352	413	436	333	198	270	339
Enteric or Typhoid	2	6	66	37	35	48	114	51	94	53	83	76	102	92	96	157	101	105
Diphtheria	4	6	11	27	23	18	69	52	12	38	46	38	37	118	225	211	170	197
Measles	...	1	2	1	11	4	8	5	1	22	6	22	15	10	6	6	...	1	...	...
Other Diseases	1	3	8	8	7	18	5	9	25	17	11	10	2	...	...	...
Totals	...	7	22	37	125	147	194	363	576	322	645	382	346	499	569	662	657	567	542	649

Sanatorium for the Treatment of Consumption.

Early during the year the scheme devised some time ago for the erection, in conjunction with other Sanitary Authorities in the County, of a conjoint sanatorium for the treatment of consumption fell through. When the financial part of the scheme came to be discussed it was evident that there was no hope of a satisfactory basis being arrived at. There seemed to be the lack of a central controlling authority. The delegates who came from the various local authorities were nearly all in favour of the erection of a sanatorium but unfortunately they could give no guarantee on behalf of the authorities they represented for a rate or contribution towards its erection and maintenance, that being the case the scheme naturally died.

In spite of this failure it still seems to me that if consumption is to be treated by open-air sanatoria, the best method of procedure is for there to be one sanatorium for each county. This will be far cheaper than for several authorities to have each a sanatorium ; another advantage will be that the best site in the whole county can be selected and not one near a large town. In this respect a sanatorium differs from infectious disease hospitals, in the latter one cannot move patients suffering from infectious diseases any great distance, consequently each sanitary authority must have its own infectious hospital near at hand ; in the case of a sanatorium, on the contrary, the patient is always fit to travel several miles, therefore the choice of a site is not limited to within a certain radius of a large town.

The result of the above attempt has satisfied me, however, that the above scheme will never work satisfactorily until an Act on the same lines as the Isolation Hospitals Act, 1893, is passed, or until the present Act be so amended as to extend to

County Councils the power to erect Hospitals for the treatment of cases of phthisis; but it must go a step further, its application must not be limited as at present to rural and small urban districts, it must be made applicable to all towns in the county irrespective of size, and to county boroughs as well as to urban districts. I believe it would be unnecessary extravagance for each town to provide its own sanatorium.

Bacteriology and Public Health.—The part played by the science of bacteriology in preventive medicine is becoming more and more generally recognised, and the work done in this Borough shows year by year a steady increase.

This was one of the first provincial towns to establish a bacteriology laboratory in connection with the Health Department. It is over six years since I first made arrangements for the examination of rubbings from the throat in the cases of suspected diphtheria, and now the organisation for the bacteriological diagnosis of infectious diseases is, I think, in no town more complete and expeditious than in Portsmouth.

During the past year I made 537 investigations, many of these necessitated several examinations and absorbed a very large amount of time. The cases were divided as follows:—

Disease	Result		Total
	Positive	Negative	
Diphtheria ...	175	157	332
Tuberculosis ...	33	64	97
Typhoid ...	18	43	61
Other examinations ...	...	...	47
Total ...	226	264	537

The usefulness of bacteriology is most marked in cases of diphtheria ; in fact, in many cases it is impossible for a medical practitioner to give a positive diagnosis without its aid. In early cases of consumption, too, the detection of the tubercle bacillus in the sputum enables the disease to be very often recognised much sooner, and consequently what is all important, enables proper remedial measures to be taken at an early date in the history of the disease. The other important disease is typhoid, which, if the attack is mild, is possibly one of the most difficult diseases in which to arrive at a correct diagnosis.

Other examinations have included the bacteriological analysis of water, tuberculous meat, actinomycosis, &c. There is little doubt that, as the result of numerous investigations being carried on in various research laboratories, in the future the science of bacteriology will play a still more important part.

It may be interesting for purposes of comparison to note the work done in some of the other large towns of the Kingdom and from returns supplied to me I can give the following figures. In each of these towns there is either a separate bacteriologist appointed, or the work is done at a local medical school or university.

Town	Population	Bacteriologic'l Examinations last year	Town	Population	Bacteriologic'l Examinations last year
Birmingham	533,039	683	Manchester	553,486	2,666
Bradford ...	283,412	150	Newcastle ...	222,241	98
Bristol ...	338,895	4,191	Nottingham	245,985	302
Cardiff ...	172,598	748	Salford ...	226,480	627
Hull ...	249,639	240	Sheffield ...	425,528	2,000
Liverpool ...	716,810	2,000	Portsmouth...	191,909	537

Refuse Disposal.—In a memorandum issued last year to Medical Officers of Health from the Local Government Board the following occurs, “It is of special importance that the Medical Officer of Health should record what action has been taken to remedy unhealthy conditions which have been reported by him in previous Annual Reports, and **that attention should be called afresh, year by year, to such as remain unremedied.**” I need therefore to make no apology for once more urging the establishment of a rational method of refuse disposal. For nearly seven years I have been your Medical Officer of Health and from the first I have advised the erection of a refuse destructor or other means of refuse disposal than dust heaps. Moreover, the sites of the old dust heaps are being built over and it is getting more and more difficult to get a site away from inhabited houses. I hope I shall not have in future to report further on dirt-heaps. I know it is wearisome for you to hear such reports and I can assure you it is equally disagreeable to me to have to make them. I am asked periodically to report on certain tips. I have always reported adversely, and I say once and for all they are all bad, and their potency for evil varies with their size and their nearness to inhabited houses, the temperature of the atmosphere, and, I would add, the amount of artificial heat supplied by brick clamps. I am told if the brickmakers cannot get the refuse, bricks will be dearer, and consequently houses will be more expensive. Even if such a statement were true, what man in his senses would prefer a cheap unhealthy home (if indeed such a home can be cheap at any price). Fortunately, steps are now being taken to provide a refuse destructor at the eastern part of the Borough, and in all probability we shall before long have come into line with other towns in the disposal of house refuse.

Water Analysis.—I give below the results of the chemical analyses of the water of the Portsmouth public supply performed by me in the past year, together with those of several wells. In addition to these 13 bacteriological examinations were made, the mean result being 35 bacteria per cubic centimeter. The number varied from 6 bacteria per cubic centimetre in January to 51 in September. This is a very good result and bears out the chemical analysis in indicating that our public supply is exceptionally good.*

Date	Source	Total Solids	Volatile Solids	Chlorine	Chlorine equivalent as Common Salt	Nitrogen as Nitrates and Nitrites	Total Hardness	Permanent Hardness	Oxygen absorbed in 2 hours at 27° C.	Free or Saline Ammonia	Albuminoid or Organic Ammonia	Nitrites and Sulphates	Physical and microscopic characters
Jan. 6th	Company's Water, Town Hall	27.43	..	2.6	..	0.143	21.71	..	..	0.000	0.008	Nil	Clear, well aerated, faint yellowish tinge
" 20th	do.	27.71	..	2.0	..	0.285	22.28	..	..	0.000	0.008	"	Clear, sparkling, well aerated, faint bluish tinge
Feb. 17th	do.	28.71	..	1.78	..	0.257	22.14	..	..	0.000	0.005	"	Clear, sparkling, well aerated, faint bluish tinge
" 24th	do.	31.42	..	1.85	..	0.285	22.57	..	..	0.000	0.005	"	Clear, well aerated, very faint bluish tinge
April 17th	do.	24.57	..	2.14	..	0.242	22.42	..	0.000	0.000	0.003	"	Clear, well aerated, faint bluish tinge
" 22nd	do.	26.57	..	2.0	..	0.371	22.71	..	0.012	0.000	0.004	"	Clear, sparkling, faint bluish tinge
May 5th	do.	27.42	..	1.85	..	0.228	22.57	..	..	0.000	0.004	"	Clear, sparkling, well aerated, faint bluish tinge
" 26th	Well at Old Engine House, Asylum Road	49.14	7.43	8.20	..	0.200	8.51	..	0.068	0.086	0.048	Sulphates	Clear, yellowish tinge, slight fuming and charring on ignition
" 26th	Company's Water, Town Hall	27.43	..	1.85	..	0.200	21.85	..	0.002	0.000	0.003	Nil	Clear, sparkling, faint bluish tinge
June 3rd	Company's Water, 44 St. Andrew's Road	28.57	..	1.92	..	0.285	22.0	..	0.039	0.000	0.003	"	Clear, sparkling, faint bluish tinge
" 16th	Company's Water, Town H.	28.57	..	2.0	..	0.242	21.71	..	0.048	0.000	0.001	"	Clear, faint yellowish tinge
July 7th	do.	27.57	15.57	2.0	3.3	0.327	21.5	3.7	0.018	0.000	0.0019	"	Clear, sparkling, no charring or fuming
" 14th	do.	28.2	16.2	2.0	3.3	0.271	22.5	3.7	0.000	0.000	0.001	"	Clear, sparkling, colourless, no charring or fuming
" 21st	do.	28.85	14.57	2.1	3.46	0.263	22.1	..	0.004	0.000	0.0016	"	Clear, colourless, free from suspended matter, no charring or fuming
Sept. 8th	do.	30.6	14.6	2.0	3.3	0.280	27.0	..	0.025	0.000	0.004	"	do. do.

Sept. 12th	do.	..	31'0	19'8	1'98	3'16	0'132	26'8	5'0	0'014	0'000	0'002	Nil	Clear, faint bluish tinge, no charring or fuming
" 17th	do.	..	28'5	..	1'9	3'1	0'285	27'5	..	0'014	0'000	0'002	"	Clear, colourless, free from suspended matter
Oct. 10th	do.	..	29'0	..	1'9	3'1	0'196	28'0	..	..	0'000	0'0016	"	do.
" 16th	do.	..	26'71	..	1'9	3'1	0'285	27'1	..	..	0'000	0'002	"	do.
" 21st	do.	..	28'28	16'28	1'85	3'03	0'185	28'0	4'5	0'000	0'000	0'0015	"	Clear, faint bluish tinge, no charring or fuming
" 31st	Well at Lisbon Cottage, Garden Lane, Southsea	55'14	27'43	4'65	7'62	5'943	31'43	25'6	0'248	0'0312	0'0151	Nitrates & Sulphates	Nil	Slight yellowish tinge, slight charring and fuming
" 31st	Well at Ada Cottage, Garden Lane, Southsea	31'14	19'43	2'4	3'93	0'874	21'4	16'8	0'163	0'0014	0'0019	Nil	Nil	Clear, free from suspended matter, slight transient discolouration on ignition
Nov. 20th	Company's Water, Town H.	28'43	..	2'0	3'3	0'185	29'2	..	0'0006	0'0000	0'0000	Nil	Nil	Clear, colourless, well aerated
Dec. 2nd	Well at Old Engine House Asylum Road	48'43	11'55	8'14	13'42	0'250	11'8	..	0'0863	0'2320	0'0160	Sulphates	Nil	Faint brown tinge, considerable suspended matter, cloudy, no charring or fuming on ignition
" 4th	Well, Furze Cottage, Milton	135'71	61'43	18'43	30'37	4'761	16'0	..	0'0774	0'0141	0'0284	Nitrates & Marked Sulphates	Nil	Faint greyish tinge, slightly cloudy, considerable charring and fuming on ignition
" 5th	Well, Lime Kiln Cottage, Milton	12'0	7'71	4'75	7'53	0'213	4'2	..	0'2560	0'0207	0'0118	Nil	Nil	Yellowish grey colour, slightly cloudy, slight discolouration on ignition
Dec. 3rd	Well at Old Oyster House, Milton	178'0	99'80	30'86	51'05	0'116	36'0	..	0'1068	0'0060	0'0582	Sulphates	Nil	Slight brown colouring, considerable sandy deposit, very cloudy, brownish and fuming on ignition
" 6th	Well at 102 The Cottages, Asylum Road	176'42	70'14	44'28	72'97	2'6435	58'8	..	0'0992	0'0185	0'0160	Marked Nitrates & Sulphates	Nil	Faint yellow colour, slightly cloudy, slight suspended matter, considerable charring on ignition
" 8th	Well at Russell's Cottage, Milton	116'57	54'57	32'86	54'15	0'330	35'0	..	0'8385	0'0030	0'2647	Marked Nitrates & Sulphates	Nil	Marked brown colour, opalescent, cloudy, marked charring and fuming
" 9th	Well at the Old Thatched House, Milton	62'14	23'85	18'28	30'13	2'471	19'6	..	0'0972	0'0000	0'0196	Trace of Nitrates & Sulphates	Nil	Clear, faint yellow tinge, well aerated, free from suspended matter, very slight discolouration on ignition
" 10th	Well at Port Royal Farm, Milton	92'86	41'71	15'28	25'19	2'620	13'8	..	0'0231	0'0019	0'0160	Nil	Nil	Clear, very faint yellow tinge, well aerated, free from suspended matter, slight discolouration on ignition
" 11th	Company's Water, Town Hall	28'5	16'28	2'00	3'3	0'285	28'8	..	0'0010	0'0000	0'0034	Nil	Nil	Clear, colourless, free from suspended matter

* It must not be lost sight of, however, that after heavy rains a considerable amount of suspended matter gains access to the water, and at such periods the supply is apt to become very cloudy. To remedy this it is advisable that efficient filter beds should be erected. When this is done I believe we shall have a water supply that for purity, quantity, and palatability, is equalled by few large towns in the kingdom.

Factory and Workshops.—The new Factory and Workshop Act, which came into force on January 1st, 1902 throws a considerable amount of extra work on the Town Council. Under sec. 132 of the Act, the Medical Officer of Health is required to report specifically on the administration of the Act in workshops and workplaces so far as the matters under the charge of the Council are concerned, and to send a copy of his report on the subject to the Secretary of State. He is specially required to report on the provisions as to sanitation of bakehouses and houses in which homework is carried on.

Full particulars of the visits paid and the action taken in respect to workshops will be found in the Report of the Inspector of Nuisances.

Means of escape in case of Fire.

The duties under this section are performed by the Borough Engineer. The sections dealing with this matter, are Nos. 14, 15 & 16. They require that every new factory and workshop in which more than 40 persons are employed must be furnished with a certificate from the Local Authority that reasonable means of escape are provided. In the case of old factories and workshops the Local Authority are required to ascertain whether they are provided with proper means of escape and if not, to enforce their provision. Section 16 requires the doors of factories and workshops to open from the inside.

General Sanitary.

Various regulations are made for enforcing the keeping of workshops and factories in a cleanly state, free from nuisance, from overcrowding, &c.

In carrying out these provisions, 3,539 visits have been made by Mr. Gray, the Factory and Workshop Inspector, and 156 nuisances, a list of which will be found in the Inspector of Nuisances Report, have been abated. In addition a large number of the premises have been visited by myself.

Homework.—

Sections 107-115 deal with the regulations as to homeworkers. Under these lists of the names and addresses of all persons employed outside a factory or workshop have to be supplied by the occupier of the factory or workshop before the first day of February and the first day of August in each year. The return of these lists from employers of labour has up to the present been unsatisfactory. There is great difficulty in getting them sent in at the required time. Inasmuch, however as any case of infectious disease is at once visited, and full enquiries instituted, I do not think there is much fear of clothing being made on any premises in which there is a case of infectious disease. All premises in which homework is done have to be periodically inspected, to ascertain if any conditions exist injurious to the persons who work there, in which case the employer may be restrained from giving out work to be done there after notice to that effect.

Bakehouses.—

Sections 97-102 deal with the sanitary condition of bakehouses, and special regulations are made for underground bakehouses. After January 1st, 1904, no underground bakehouse will be allowed to be occupied unless a certificate has been granted by the Local Authority that the premises are sanitatable.

The bakehouses have been constantly inspected and cleansing and limewashing has been enforced in 36 instances. As regards underground bakehouses, there are only seven in this Borough, these have been visited by me and a list of requirements drawn up to guide the Local Authority in granting or withholding the certificates of sanitability necessitated by the Act.

In the event of the Local Authority failing generally to carry out the provisions of this Act and the Public Health Acts with regard to factories, workshops, and work-places, the Secretary of State may authorise a Factory Inspector to enforce such provisions, and will be entitled to recover from the Local Authority any expenses incurred by him in so doing, which are not recovered from any other person.

Houses Unfit for Habitation.—Sixteen houses have been certified by me to be unfit for human habitation. They were as follows :—

Situation of Premises		Date
23 Sussex Street	...	January 21st, 1902
25 do	...	do
27 do	...	do
28 Voller Street	...	do
30 do	...	do
32 do	...	do
47 Highbury Street	...	June 11th, 1902
43 Southampton Row	...	do
41 Highbury Street	...	do
45 Voller Street	...	July 19th, 1902
81 Kent Street	...	September 3rd, 1902
83 do	...	do
Back portion of—		
21 Warblington Street	..	September 15th, 1902
1 Highbury Street	...	do
2 Houses, All Saints' View	...	November 15th, 1902

Prosecutions.—Fifty-four prosecutions have been instituted under the “Public Health Act,” “Dogs Importation Order, 1901,” and the “Food and Drugs Acts,” during 1902, and evidence given by me where necessary.

The following is the result of the prosecutions :—

Initials	Charge	Result of Prosecution
“PUBLIC HEALTH ACT.”		
F.P. ...	Non-compliance with Nuisance Notice	Withdrawn—work having been done
C.B. ...	do.	Withdrawn on payment of 8/6 costs, work having been done
W.W.S. ...	Nuisance Bye-Law No. 13	Fined £1, including costs
F.W. ...	do.	Fined £1, including costs
J.F. ...	do.	Fined £1 10s. and 8/6 costs
A.H. ...	do.	Fined £1, including costs
A.M. ...	Slaughterhouse Bye-Law No. 15	Fined 40/- and 8/6 costs

Initials		Charge	Result of Prosecution
Do.	...	Nuisance Bye-Law No. 13	Fined 40/- and 8/6 costs
W.H.S.	...	Common Lodging House Bye-Law No. 13	Fined 40/- and 9/6 costs
S.E.R.	...	Letting house after same declared unfit for habita- tion	Fined £1 and 10/- costs
R.G.	...	Nuisance Bye-Law No. 13	Fined 20/-, including cost

"SALE OF FOOD AND DRUGS ACT."

J.M.	...	Sugar	Fined 10/- and 16/- costs
I.C.	...	Milk 10 per cent. Cream abstracted	Fined £1 and 13/6 costs
H.B.	...	Coffee 72 per cent. Chicory	Fined £1 including costs
J.H.	...	Coffee 73·34 per cent. Chicory	Fined £1 including costs
J.S.	...	Milk 25·6 per cent. Cream abstracted	Fined £2, including costs
W.M.	...	Milk 16·6 per cent. Cream abstracted	Fined £1, including costs
W.B.	...	Coffee 35·34 per cent. Chicory	Fined 16/6 including costs
J.P.	...	Coffee 48·67 per cent. Chicory	Fined £1, including costs
E.P.	...	Coffee 48·67 per cent. Chicory	Fined £1, including costs
H.T.	...	Margarine Act, 1887	Fined £20 and £2 12s. costs
A.W.T.	...	Milk 16·6 per cent. Cream abstracted	Dismissed—Defendant having proved he sold same as received under Warranty
A.G.V.	...	Milk 10 per cent. Cream abstracted	Fined £2, including costs

Initials	Charge	Result of Prosecution
W.C.D. ...	Milk 25 per cent. Cream abstracted	Fined £1 and 8/6 costs
J.W.B. ...	Sec. 6, Margarine Act, 1887	Fined £5, including costs
M.A.H. ...	Do.	Withdrawn—Notice of Warranty having been given.
Do. ...	Selling Margarine for Butter	Do.
S.D. Coy. ...	Milk 3·3 per cent. Cream abstracted	Dismissed
Do. ...	Milk 6·6 per cent. Cream abstracted	Withdrawn
C. & G. P. ...	Milk 3·3 per cent. Cream abstracted	Withdrawn
G.B. ...	Milk 5 per cent. Cream abstracted	Fined £1 4s. 6d. including costs
J.P. & W.P. ...	Milk 6·6 per cent. Cream abstracted	Fined £1 9s. 8d. including costs
J.H.W. & S.A.W.	Milk Deficient 6·6 per cent. milk fat	Fined £1 11s., including costs
A.C.W. ...	Milk Deficient 10 per cent. milk fat	Fined £1 1s. 3d. including costs
Do. ...	Milk Deficient 13 per cent. milk fat	Fined £1 and 8/6 costs
Do. ...	Milk Deficient 21·6 per cent. milk fat	Fined £5 and 17/6 costs
Do. ...	Milk Deficient 5 per cent. milk fat	Fined £1 and 9/6 costs
A.M.S. ...	Milk Deficient 20 per cent. milk fat	Fined £1 4s. & 16s. costs
W.F.L. ...	Selling Margarine for Butter	Fined £5 and 17s. costs
Do. ...	Sec. 6 Margarine Act, 1887	Withdrawn—conviction in last case
F.G.H. ...	Selling Margarine for Butter	Fined £5 and 9/6 costs

Initials		Charge	Result of Prosecution
F.G.H.	...	Sec. 6 Margarine Act, 1887	Withdrawn—conviction in last case
M.H.	...	Milk Deficient 26·6 per cent. milk fat	Fined £2 and 10/6 costs
E.D.	...	Milk Deficient 6·1 per cent. milk fat	Fined £1, including costs
C.H.W.	...	Milk Deficient 16·6 per cent. milk fat	Fined £1 and 8/6 costs
W.M.	...	Milk Deficient 7·4 per cent. milk solids	Fined £1, including costs
J.E.	...	Milk Deficient 43·3 per cent. milk fat	Fined 50/- and 10/6 costs
G.W.	...	Milk Deficient 20 per cent. milk fat	Fined £1 and 8/6 costs
Do.	...	Sec. 9 " Sale of Food and Drugs Act, 1899 "	Fined 10/-, including costs
C.W.H.	...	" Margarine Act, 1887 "	Fined £4 and 9/6 costs
Do.	...	Do.	Judgment suspended
F.G.H.	...	Selling Margarine for Butter	Dismissed
Do.	...	Sec. 6 Margarine Act, 1887	Withdrawn
Do.	...	Do.	Do.
G.S.	...	Milk Deficient 26·4 per cent. milk solids	Fined 30/- and 9/6 costs

TABLE XXVI.

Cases under Treatment at the Milton Hospital during the
Year 1902.

DISEASES	AGES								TOTAL
	0 to 1	1 to 5	5 to 15	15 to 25	25 to 35	35 to 45	45 to 55	55 and over	
Small-pox ...	...	...	...	2	4	2	...	...	8
Scarlet Fever ...	1	94	251	24	7	2	1	...	380
Typhoid Fever ...	...	10	62	27	11	7	2	...	119
Diphtheria ...	1	59	125	11	9	3	...	1	209
Totals ...	2	163	438	64	31	14	3	1	716

APPENDIX.

TABLE I.—For Whole District.

Year	† Population estimated to middle of each year	Births		Deaths under one year of age		Deaths at all ages—Total		Deaths in Public Institutions
		No.	Rate*	No.	Rate per 1000 Births registered	No.	Rate*	
1892 ..	162,492	4,563	28'08	719	157	3,026	18'62	446
1893 ..	165,153	4,708	28'51	763	162	3,058	18'52	438
1894 ..	167,878	4,709	28'05	611	129	2,593	15'44	429
1895 ..	170,672	4,868	28'52	856	175	3,129	18'33	477
1896 ..	173,565	5,006	28'84	785	156	3,030	17'46	518
1897 ..	176,497	4,879	27'74	819	167	2,974	16'85	520
1898 ..	179,500	4,971	26'58	681	137	3,048	16'98	502
1899 ..	182,576	5,000	27'33	986	197	3,738	20'47	560
1900 ..	185,725	4,994	26'89	771	154	3,359	18'09	687
1901 ..	188,885	5,267	27'88	858	162	3,367	17'82	644
Averages for years 1892-1901	175,291	4,898	27'84	785	162	3,132	17'86	522
1902 ..	191,909	5,284	27'53	800	151	3,269	17'03	571

* Rates calculated per 1,000 of estimated population.

† Revised according to Census returns of 1901.

APPENDIX—TABLE II.

Names of Localities	WHOLE BOROUGH				PORTSMOUTH				PORTSEA				KINGSTON				LANDPORT				SOUTHSEA			
	Population esti- mated to middle of each year	Births registered	Deaths at all ages	Deaths under one year	Population esti- mated to middle of each year	Births registered	Deaths at all ages	Deaths under one year	Population esti- mated to middle of each year	Births registered	Deaths at all ages	Deaths under one year	Population esti- mated to middle of each year	Births registered	Deaths at all ages	Deaths under one year	Population esti- mated to middle of each year	Births registered	Deaths at all ages	Deaths under one year	Population esti- mated to middle of each year	Births registered	Deaths at all ages	Deaths under one year
1892 ..	162,492	4,563	3,026	719	6,964	118	89	26	15,359	310	191	41	58,118	1,910	883	286	68,754	2,066	1,220	306	13,297	169	197	20
1893 ..	165,153	4,708	3,058	763	6,920	..	91	19	15,298	..	196	41	60,222	..	999	330	68,938	..	1,174	314	13,573	..	160	29
1894 ..	167,878	4,709	2,593	611	6,900	..	72	14	15,200	..	139	35	62,915	..	873	274	68,990	..	935	244	13,823	..	145	13
1895 ..	170,672	4,868	3,129	856	6,845	..	71	23	15,170	..	180	63	64,500	..	1,049	358	70,084	..	1,146	356	14,073	..	206	32
1896 ..	173,565	5,066	3,030	785	6,834	157	83	18	15,000	458	200	57	66,000	2,243	936	308	71,408	2,078	1,090	333	14,323	170	203	20
1897 ..	176,497	4,897	2,974	819	6,809	108	70	13	14,750	318	161	32	67,750	2,250	985	360	72,611	2,048	1,052	360	14,577	173	186	11
1898 ..	179,500	4,971	3,048	681	6,800	170	84	24	14,500	333	204	53	69,350	2,219	1,531	303	73,877	2,063	1,075	282	15,073	186	154	19
1899 ..	182,576	5,000	3,737	986	6,500	..	95	31	14,200	..	218	62	72,050	..	1,349	462	74,003	..	1,326	380	15,823	173	186	11
1900 ..	185,725	4,995	3,359	771	6,200	..	79	28	14,000	..	248	70	73,072	..	1,607	328	75,603	..	1,224	317	16,850	..	201	28
1901 ..	188,885	5,267	3,367	858	6,500	..	90	30	14,200	..	234	66	73,670	..	1,621	438	76,803	..	1,230	293	17,812	..	192	31
Averages of years 1892-1901	175,291	4,898	3,132	785	6,727	55	82	22	14,768	344	197	52	66,755	2,103	1,183	344	72,107	2,100	1,147	319	14,922	168	183	21
1902 ..	191,909	5,284	3,269	800	6,500	..	74	18	14,500	..	195	46	75,694	..	1,620	405	77,103	..	1,197	317	17,812	..	183	14

APPENDIX.

TABLE III.—Cases of Infectious Disease notified during the Year 1902.

Notifiable Disease	Cases notified in Whole District							Total Cases notified in each Locality					No. of Cases removed to Hospital from each Locality					
	At all ages	Under 1	1 to 5	5 to 15	15 to 25	25 to 65	65 and upwards.	Portsmouth	Portsea	Kingston	Landport	Southsea	Portsmouth	Portsea	Kingston	Landport	Southsea	Total
Small-pox	8	..	..	..	2	6	..	2	..	3	3	..	2	..	3	3	..	8
Cholera	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Diphtheria	495	4	141	278	34	37	1	12	31	243	190	19	6	15	79	88	9	197
Membranous croup	5	..	3	2	..	..	..	..	..	4	1	..	..	..	..	..	..	..
Erysipelas	50	1	2	3	12	26	6	2	6	23	15	4	..	..	..	..	..	..
Scarlet fever	603	3	169	374	41	16	..	17	42	358	161	25	5	45	144	130	15	339
Typhus fever	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Enteric Fever	448	1	56	178	106	107	..	21	35	159	203	30	2	5	63	33	2	105
Relapsing fever	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Continued fever	32	..	5	18	3	6	..	1	1	10	19	1	..	..	..	..	..	..
Puerperal fever	9	..	..	..	4	5	..	1	1	5	2	..	..	..	..	..	..	..
Plague	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Totals	1650	9	376	853	202	203	7	56	116	805	594	79	15	65	289	254	26	649

APPENDIX.

TABLE IV.—Causes of, and Ages at, Death during year 1902.

CAUSES OF DEATH	Deaths in whole District at subjoined ages						Deaths in Localities (at all ages)					Deaths in Public Institutions
	All Ages	Under 1	1 and under 5	5 and under 15	15 and under 25	25 and under 65	65 and upwds.	Portsmouth	Kington	Landport	Southsea	
Small-pox	..	..	..	..	..	..	..	..	..	..	..	..
Measles	70	22	43	4	1	..	..	..	41	28	..	..
Scarlet Fever	14	2	7	5	..	..	..	..	10	4	..	6
Whooping Cough	92	60	31	1	..	..	..	2	44	40	3	..
Diphtheria and membranous croup	62	3	39	20	..	..	..	..	42	17	1	23
Croup	..	..	..	..	..	..	..	..	..	..	..	..
Typhus	..	..	..	..	..	..	..	..	..	..	..	..
Enteric	..	..	..	..	..	..	..	..	..	..	..	..
Other continued	54	..	5	15	11	22	1	1	29	18	5	13
Epidemic Influenza	..	..	..	..	..	..	..	..	..	..	..	..
Cholera	43	..	3	..	4	25	11	1	20	13	4	3
Plague	..	..	..	..	..	..	..	..	..	..	..	..
Diarrhoea	..	..	..	..	..	..	..	..	..	..	..	..
Enteritis	159	116	31	2	2	6	2	1	84	66	2	4
Erysipelas	24	18	3	..	1	2	..	..	13	8	1	1
Puerperal fever	..	..	..	..	..	..	..	..	..	..	..	..
Other septic diseases	3	..	..	..	..	3	..	..	1	1	1	..
Phthisis	12	2	..	1	3	5	1	1	6	4	1	..
Other tubercular diseases	308	8	9	12	56	215	8	9	153	99	15	69
Cancer, malignant disease	82	33	24	17	6	2	..	1	43	29	3	17
Bronchitis	189	..	..	..	2	122	65	4	85	70	22	29
Pneumonia	201	82	41	1	1	56	110	9	119	133	16	30
Pleurisy	84	12	16	3	4	37	12	2	39	35	3	12
Other diseases of Respiratory Organs	8	..	..	..	1	6	1	..	4	2	1	1
Alcoholism	70	28	21	1	..	11	9	2	32	26	4	6
Cirrhosis of Liver	48	..	..	..	..	39	9	1	25	10	7	2
Veneral diseases	15	8	..	..	..	6	1	..	13	2	..	11
Premature Birth	107	107	..	..	..	..	..	..	58	37	2	7
Diseases and accidents of parturition	10	1	..	..	..	9	..	4	5	3	..	3
Heart diseases	305	1	1	8	12	172	111	8	131	124	21	49
Accidents	95	20	12	10	11	29	13	6	48	27	5	33
Suicides	20	..	..	1	..	19	..	1	7	7	3	5
All other causes	1104	277	67	35	36	205	391	21	568	394	63	247
All causes	3269	800	353	136	151	1081	748	74	1620	1197	183	571

Milton Hospital.

To the Chairman and Members of the Health Committee.

GENTLEMEN,

The total number of patients treated during the year was 716. The combined mortality in respect of all cases was 5·86 per cent. the number of cases in which the original diagnosis was not confirmed amounted to 74, or 10·3 per cent.

SCARLET FEVER. The number of scarlet fever cases was 380. Of these 6 died, the per centage mortality is 1·58 per cent. Fifteen developed scarlet fever within a few days of their admission to the hospital. The type of disease was more severe than usual, there being many kidney and other complications.

POST SCARLATINAL DIPHtheria. There have been twelve cases of post scarlatinal diphtheria. All recovered. This large number is due to an outbreak which occurred in the month of November. I am of opinion the outbreak was largely due to overcrowding, owing to the large number of scarlet fever patients admitted during the months of October and November.

DIPHtheria. The number of cases of diphtheria admitted was 209, of these 23 died, the mortality per cent. is 11·0. In every case a bacteriological examination was made by Dr. Fraser. In 52 of these the origin and diagnosis was not confirmed.

ENTERIC FEVER. The number of cases admitted was 119. Twelve of them were suffering from a disease other than that for which they were admitted, 13 died. The mortality was therefore 10·9 per cent.

MEASLES. One child admitted with scarlet fever, developed measles ten days after admission. Five patients contracted the disease, all recovered. A patient admitted with diphtheria, also developed measles four days after admission, as a result no patients could be admitted into that ward during his detention in the hospital, owing to the isolation ward being occupied by the scarlet fever patients who had contracted measles.

VARICELLA. One child admitted with scarlet fever developed chicken-pox ten days after admission; with the result that several children in the ward contracted the disease.

ILLNESS OF STAFF. One nurse contracted scarlet fever, and one enteric; both recovered.

During the year I have given two courses of lectures and instruction to the probationers and assistant nurses. I have to thank the committee for their appreciation, and their willingness to supply the necessary diagrams and text books.

I am, Gentlemen,

Your obedient Servant,

JAMES MCGREGOR, L.R.C.P., F.R.C.S.

Medical Superintendent.

Port Sanitary Authority.

To the Chairman and Members of the Port Sanitary Authority.

GENTLEMEN,

For the first time for some years a case of infectious disease was notified on board a vessel in the port, namely a case of small-pox on board the *Dunblane*, a sailing barque bound from Port of London to Adelaide. A case of sickness occurred on this ship in the channel, and the captain put in to St. Helen's Roads, I. of W., on March 28th, from there she was advised to go to the Mother-bank, the old quarantine station, which is within the area of the Portsmouth Port Sanitary District.

The patient, found to be suffering from small-pox, was moved by me in a steam launch from the Mother-bank to the Small-pox Hospital on Easter Monday, March 31st. Steps were taken by the Port Sanitary Authority with regard to the legality of any neighbouring authority sending an infected ship on to Portsmouth, but apparently we had no remedy in the matter.

It is my duty to point out that at present we are without a Hospital for isolating any cases of plague or yellow fever that may be brought to the port. The *Edgar* which was till recently kept at our disposal by the Admiralty, has been sold by the Admiralty owing to need for more room in the harbour.

The total number of ships entering the Port during the year was 11,598, from foreign ports 430, from home ports 1,821, steamers and craft within the Solent 9,347.

The nationality of foreign ships was as follows :

French	-	34	Swedish	-	10	Russian	-	10
German	-	23	Dutch	-	5	Spanish	-	2
Norwegian	-	34	Danish	-	9			

I have the honour to be, Gentlemen,

Your obedient servant,

A. MEARNS FRASER, M.D.,

Medical Officer to the Port of Portsmouth

Report of the Chief Inspector of Nuisances FOR THE YEAR 1902.

GENTLEMEN,

I have the honour to report that during the year 3,439 Notices were served for the abatement of nuisances.

The following works have been carried out under the supervision of the Department :

DRAINAGE DEFECTS.

Drains cleansed	...	393
Drains repaired, or relaid, with water-tight cement joints	...	2327
Drains ventilated or ventilating shafts raised	...	23
Sink waste pipes disconnected from drains	...	23
Rain water pipes disconnected from drains	...	44
Soil pipes repaired	...	51
Soil pipes removed to outside of houses	...	23
Pan closets removed and replaced with approved closets	...	12
New w.c. pans provided	...	701
Water closet fittings repaired	...	416
Water closets repaired	...	15
Water closets cleansed	...	85
Water laid on to water closets	...	23
Extra w.c. accommodation provided	...	16
Cesspits cleansed	...	22
Waste pipes repaired or provided	...	181
Waste pipes trapped	...	23
Glazed earthenware sinks provided	...	119
Yards drained	...	36

DEFECTS IN CONNECTION WITH DWELLING-HOUSES.

Roofs repaired	...	467
Outside walls repaired or protected	...	52
Sashes and frames repaired or renewed	...	417
Stairs or flooring repaired	...	302
Space under flooring ventilated	...	16
Houses or portions of houses cleansed	...	427
Walls and ceilings repaired	...	251

Rain water spouts repaired or provided	...	617
Galvanized iron dust bins provided	...	22
Yards repaved	...	825
Urinals repaired	...	3
Urinals cleansed	...	12
Water closets ventilated	...	4
Dead wells filled in	...	9
Overcrowding in dwelling houses abated	...	27

OFFENSIVE MATTER, &c.

Manure removed	...	81
Refuse removed	...	56
Bones and offal removed	...	4
Human excrement removed	...	14
Stagnant water removed	...	3

ANIMALS.

Animals removed	...	28
-----------------	-----	----

SLAUGHTERHOUSES, COWSTABLES,
STABLES, &c.

Slaughterhouses cleansed and limewashed	...	27
Cowstables cleansed and limewashed	...	6
Stables do.	...	47
Stables drained	...	29
Stables paved	...	43
Sties paved and drained	...	33
Sties cleansed and limeswashed	...	40
Manure pits provided	...	42
Manure pits repaired	...	8

WORKSHOPS.

Overcrowding discontinued	...	26
Workshops cleansed	...	37
Ice cream stores and utensils cleansed	...	16
Ice cream stores paving repaired	...	4
Bakehouses cleansed and limewashed	...	16
Ceilings repaired	...	4
Roofs repaired	...	10
Smoke nuisances abated	...	3

BYE-LAWS.

Notices under slaughterhouse bye-laws complied with	...	11
" nuisance " "	...	67
" dairies, cowsheds and milkshops ditto	...	1
" Common lodging house ditto	...	1

8682

The following Articles of Food have either been seized by your Inspectors or given up by the owners or consignees for destruction as unfit for the food of man, viz. :

Carcases of beef	...	...	9
„ mutton	...	...	3
„ pork	...	...	3
„ lamb	...	...	1
Pieces of beef and mutton	...	lbs.	295
Kegs of tripe	...	...	15
Bullocks' kidneys	...	...	201
„ „	...	boxes	22
Pigs' kidneys	...	...	62
„ „	...	boxes	2
Ox tails	...	...	56
Bullocks' livers	...	...	38
„ offal	...	sets	3
Pigs' plucks	...	box	1
Sheeps' plucks	...	...	39
Wild rabbits	...	...	150
German sausages	...	lbs.	56
Frozen chicken	...	cases	2
Tinned lobster	...	tins	18
„ mutton	...	tins	18
Mixed fish	...	kits	2
Smelts	...	boxes	4
Bream	...	cwt.	7
Bream	...	boxes	6
Soles	...	boxes	5
Mackerel	...	boxes	4
„	...	...	32
Plaice	...	cwts.	3½
„	...	boxes	2
Salt cod fish	...	cwts.	5
Codling	...	boxes	17
Bloaters	...	boxes	429
„	...	barrels	5
Kippers	...	boxes	10
Haddock	...	boxes	72
„	...	kits	7
Hake	...	...	9
Shrimps	...	baskets	18
„	...	boxes	5
„	...	barrels	3
Winkles	...	gals.	20
Cockles	...	bags	5
Whiting	...	boxes	19
„	...	cwt.	7
Dog Fish	...	boxes	2
Herrings	...	boxes	19
Salmon	...	...	2
Oranges	...	...	2150
„	...	cases	8
Pomegranates	...	...	400
Apples	...	17 tons, 17 cwts.	
„	...	bushels	1½

Plums	...	...	boxes	58
Lemons	...	...		120
"	...	...	bushel	1
Black currants	...	...	baskets	45
Cherries	...	...	bushel	1
Pears	...	...	cases	26
Bananas	...	...		50
Tomatoes	...	...	bushels	2
Mushrooms	...	...	"	$\frac{1}{2}$
Peas	...	...	"	2
Potatoes	...	...	ton	1
Carrots	...	...	cwts.	5
Cakes (plain and currant)	...	...		413

INSPECTION.

During the year 7007 dwelling houses were inspected and the usual notices served for the abatement of such nuisances as were found to exist.

10,216 re-inspections of property under notices were made to inspect work in progress, &c.

852 complaints were made to the Department and received attention.

4575 visits were made for the inspection of the slaughter-houses, and 11 notices under the Bye-laws regulating the same were issued.

1888 visits were paid to the various dairies, cowsheds, and milkshops.

730 common lodging house inspections were made of which 363 were made at night.

2137 visits were made to the various bakehouses.

3539 visits were made to the various workshops and out-workers premises under the Factory and Workshop Act, and 420 visits under the Shop Hours Act.

INFECTIOUS AND ZYMOTIC DISEASES.

During the year 2242 cases of Infectious and Zymotic Diseases were investigated. Particulars were also taken in 377 fatal cases of consumption. Arrangements were made for the removal of 649 patients to the Infectious Diseases Hospital, and 1678 rooms were disinfected by the disinfectors.

DRAINAGE.

4805 suspected drains were tested or re-tested of which number 1400 or 29.1 per cent. were found defective.

Complaints under Section 41 of the Public Health Act have been made respecting drains in many cases, and the drains have been opened up and repaired by the Borough Engineer's Staff.

Inspector Turner has tested the drains of 2116 houses and the inside fittings of 845 houses.

FOOD & DRUGS ACT.

During the year your Inspectors obtained 282 samples of food and drugs, and submitted the same to the Public Analyst for analysis. Of this number 45 were certified to be adulterated.

PROSECUTIONS AND FINES.

Public Health Act.

Under the Nuisance Clauses of this Act proceedings were taken against two persons. The informations were withdrawn on the work being carried out before the date of hearing.

Food and Drugs Act.

Proceedings were taken in 35 cases under this Act, and Fines and Costs to the amount of £59 18s. 11d. were inflicted in 29 cases. Three cases were withdrawn and three dismissed.

Margarine Act.

Proceedings were instituted against four persons. One case was withdrawn, the defendant having a warranty; judgment was suspended in another case, he having been fined for another offence under this Act at the same time and for the same sample. The Fines and Costs for the year amounted to £32 1s. 6d.

Nuisance Bye-Laws.

Six persons were proceeded against for non-compliance with Nuisance Bye-Law No. 13, with respect to the drainage of stables and the provision of manure pits, and Fines amounting to £8 7s. were imposed.

Slaughterhouse Bye-Laws.

One person was summoned under these Bye-Laws and fined £2 8s. 6d., including costs.

Common Lodging-house Bye-Laws.

One Common Lodging-house Keeper was proceeded against for breaches of these regulations and fined £2 9s. 6d., including costs.

I am, Gentlemen,

Your obedient Servant;

FRED. L. BELL,
Chief Inspector of Nuisances.

The Contagious Diseases (Animals) Act.

INSPECTOR'S REPORT.

FOR THE YEAR ENDING 31ST DECEMBER, 1902.

Inspection of Cattle.—The following is a list of animals which have been imported into the Borough during the year ending December 31st, 1902. The greatest number arrived at Fratton Railway Station from various markets.

Beasts	...	...	8,616
Sheep	...	...	31,916
Calves	...	...	3,470
Pigs	...	...	14,723
			58,725

Inspection of Cattle-trucks, etc.—2,818 cattle-trucks, 1,577 horse-boxes, and 268 tow-boats have been inspected during the year, and they were all found to be properly cleansed and limewashed in accordance with the Act.

Swine Fever.—In the whole of my experience as an Inspector under the Corporation, I am glad to say that I have never been able to forward such a favourable report as the following :

During the whole of the year there has not been a single outbreak of Swine Fever in the Borough, though many cases of illness in pigs have been reported to me, in each case I found that over, or improper feeding, had set up inflammation of the bowels, causing illness, and in some cases death.

But the main reason we have been so free from outbreaks of Swine Fever is due to the orders of the Board of Agriculture being enforced under the Areas Order in the various districts, restricting Swine being moved without first obtaining a license, and the pigs so licensed having to be killed within 4 days. This order had the effect of excluding store pigs entirely, which was very beneficial in preventing Swine Fever being imported into this Borough.

Nearly the whole of the pigs that came into this Borough during the year were licensed from various districts and markets, and had my supervision until they were slaughtered.

Glanders, etc.—For many years this disease has not been known in Portsmouth, but in November last the Police reported to me the receipt of a telegram from the Southampton Police stating that a horse was on its way to this Borough suffering from "Farcy." The horse was intercepted by the Police in the County, who had it examined by Mr. W. Irish, Veterinary Surgeon for the County Authorities, but he failed to find in it any disease.

Rabies.—Several cases of supposed madness were reported to the Police, and hence to me, but upon examination being made by Mr. F. E. Knott, Veterinary Surgeon for the Borough, no trace of Rabies was found, teething and distemper being the causes of the suffering in dogs.

Importation of Dogs Order.—Two infringements of this Act were reported by the Board of Agriculture to the Town Clerk, who directed me to make the necessary inquiries. The first case was that of a dog which came in a sailing vessel, named "Oscarberg," from Fredrickstad, Norway, to Flathouse Quay, laden with wood, and which sailed from this port the day after my visit.

The second case was that of a dog brought from Malta in H.M.S. Barham, to the Dockyard. When I visited I found the ship had been paid off, and the dog gone before the information reached the Town Clerk. In both cases the information came too late for proceedings to be taken or for the dogs to be isolated as required by the Act.

I should like again to thank the Chief Constable for the assistance I have received from the whole of his staff at all times when it was required in carrying out the various Acts.

I have the honor to be, Gentlemen,

Your obedient servant,

G. W. MONKCOM.

Public Analyst's Report.

THE LABORATORY,

PARK ROAD, PORTSMOUTH.

To the Chairman and Members of the Health Committee.

GENTLEMEN,

I have the honour to present you my Report for the year 1902.

During the year 300 samples of food and drugs were submitted to me for analysis, 282 of which were obtained by your Inspectors, under the Food and Drugs Acts, 1875-1899, and 18 were sent in by private individuals.

The following table shows the articles analysed, by whom obtained, the number adulterated and percentage of the adulteration :

Article	Taken by Inspector		Private Purchase		Percentage of adulterated articles to No. taken		Total Percentage
	No.	Adulte'd	No.	Adulte'd	Inspect'r	Sent in	
Milk ...	143	28	7	4	19.68	57.14	21.45
Butter ...	63	8	6	2	12.70	33.33	14.50
Bread ...	12	...	...	...	...	...	...
Coffee ...	12	5	...	...	41.67	...	41.67
Sugar ...	8	1	...	...	12.5	...	12.50
Cheese ...	5	...	...	...	...	...	...
Flour ...	4	...	1	...	...	...	...
Mustard ...	4	...	...	...	...	...	...
Pepper ...	2	...	...	...	...	...	...
Cocoa ...	2	...	...	...	...	...	...
Sweets ...	2	...	...	...	...	...	...
Margarine ...	1	...	...	...	...	...	...
Lard ...	2	...	...	...	...	...	...
Whiskey ...	9	2	...	...	22.22	...	22.22
Gin ...	3	...	...	...	...	...	...
Rum ...	2	...	...	...	...	...	...
Muffins ...	...	...	1	...	...	...	...
Crumpets ...	...	...	1	...	...	...	...
Camphorated Oil ...	4	1	...	...	25.00	...	25.00
Olive Oil ...	4	...	...	...	...	...	...
Tinned Rabbit... ..	...	...	1	...	...	...	...
Soda Water ...	...	...	1	1	...	100.0	100.0
	282	45	18	7	15.6	38.88	17.33

Table showing the number of Samples examined, and the number found adulterated, during the last ten years in Portsmouth.

Year	Milk	Butter	Bread and Flour	Groceries	Wines, Spirits and Beers	Drugs	Sundries	Total	No. of Samples Adulterated
1893	141	9	10	12	14	...	32	218	31
1894	126	28	1	18	20	10	35	238	27
1895	165	33	3	30	18	8	...	257	38
1896	84	18	...	28	22	6	10	168	33
1897	101	32	...	47	6	12	4	202	42
1898	104	20	4	48	14	12	...	202	45
1899	108	32	15	9	14	22	...	200	47
1900	123	33	13	39	36	21	...	265	45
1901	149	46	7	49	13	21	14	299	42
1902	150	69	16	36	14	8	7	300	52

The following table shews the cases in which proceedings were taken and the amount of Fines imposed, viz :—

Article	Amount of Adulteration	Result
Milk ...	10 per cent. deficient in milk fat ...	Fined £1 13 6 in. costs
Sugar ...	Dyed beet sugar crystals ...	„ £1 6 0 „
Coffee ...	73 per cent. chicory ...	„ £1 0 0 „
„ ...	72 „ „ „ ...	„ £1 0 0 „
Milk ...	26 per cent. deficient in milk fat ...	„ £2 0 0 „
„ ...	16 „ „ „ „ ...	„ £1 0 0 „
Coffee ...	48 per cent. chicory ...	„ £1 0 0 „
„ ...	44 „ „ „ „ ...	„ £1 0 0 „
„ ...	35 „ „ „ „ ...	„ £0 16 6 „
Milk ...	10 per cent. deficient in milk fat ...	„ £2 0 0 „
„ ...	16.6 „ „ „ „ ...	Dismissed
„ ...	25 „ „ „ „ ...	Fined £1 8 6 in. costs
„ ...	3.3 „ „ „ „ ...	Dismissed
„ ...	6.6 „ „ „ „ ...	Withdrawn
„ ...	3.3 „ „ „ „ ...	Withdrawn
„ ...	5 „ „ „ „ ...	Fined £2 3 6 in. costs
„ ...	6.6 „ „ „ „ ...	„ £1 9 8 „
„ ...	6.6 „ „ „ „ ...	„ £1 11 0 „
„ ...	10 „ „ „ „ ...	„ £1 1 3 „
„ ...	13 „ „ „ „ ...	„ £1 8 6 „
„ ...	21.6 „ „ „ „ ...	„ £5 17 6 „
„ ...	5 „ „ „ „ ...	„ £1 9 6 „
„ ...	20 „ „ „ „ ...	„ £2 0 0 „
Butter ...	100 per cent. Margarine ...	„ £5 17 0 „
„ ...	100 „ „ „ „ ...	„ £5 9 0 „
Milk ...	6 per cent. deficient in milk fat ...	„ £1 0 0 „
„ ...	26.6 „ „ „ „ ...	„ £2 10 6 „
„ ...	16 „ „ „ „ ...	„ £1 8 6 „
„ ...	7.4 „ „ „ „ ...	„ £1 0 0 „
„ ...	45 „ „ „ „ ...	„ £3 0 6 „
„ ...	20 „ „ „ „ ...	„ £1 8 6 „
„ ...	26.4 „ „ „ „ ...	„ £1 19 6 „
Butter ...	100 per cent. Margarine ...	Dismissed
Milk ...	26.6 per cent. deficient in milk fat ...	Fined £5 0 0 „
Butter ...	100 per cent. Margarine ...	„ £22 12 0 „
„ ...	100 „ „ „ „ ...	„ £5 0 0 „
„ ...	100 „ „ „ „ ...	Withdrawn
„ ...	100 „ „ „ „ ...	Fined £4 9 6 „

PROSECUTIONS.

Proceedings were instituted in 38 cases, against 20 cases in 1901, and Fines amounting to £92 0s. 5d., against £60 12s. in 1901, were inflicted.

I have the honour to be,
Your obedient servant,

J. MOORE MURRAY.

Borough Analyst

