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ANNUAL REPORT

ON THE

STATISTICS

AND

SANITARY CONDITION

RELATING TO

STRAND DISTRICT, LONDON,

FOR THE YEAR

1896.

BY

FRANCIS J. ALLAN, M.D., D.P.H. CAMB., F.R.S. Ed.

MEDICAL OFFICER OF HEALTH.



ANNUAL REPORT

OF THE

MEDICAL OFFICER OF HEALTH.

TO THE STRAND DISTRICT BOARD OF WORKS.

GENTLEMEN,

In previous Reports I have referred to the difficulties which existed in forming a correct estimate of the population of this District, and have pointed out that considerable difference existed between the figures of the Registrar-General as calculated under the "Equalisation of Rates Act," and as deduced from the decrease ascertained at the census periods of 1881 and 1891. In the latter method he estimates that as the population of the district has decreased so much in ten years, the probability is that the decrease will proceed at the same rate in the next ten years; in the former he receives annually a return of the number of inhabited houses in the district, and multiplying that by the average number of persons per house as shown at the last Census, finds the population for any intercensal year. Last year the difference between the two estimates was 1,765, that under the

"Equalisation Act" being the higher; but it was on the smaller figure that death and other rates as published by the Registrar General were calculated, hence these appeared greater than they actually were. My own estimate of the population worked out about 150 more than the Registrar-General's higher figure, so that there was some discrepancy between the statistics. The Census taken in 1896, shows that my figures and his higher estimate were more nearly accurate than those upon which he calculated the mortality rates. The alteration also in the number of persons per inhabited house would probably be sufficient to remedy the slight difference in the Registrar-General's Equalisation figure.*

The population of Registration London is given as 4,411,271; at the Census of 1891 it stood at 4,211,743, and shows an increase therefore of 199,528, but is 14,463 less than the estimate which was in use by the Registrar-General, based upon the enumerations of 1881 and 1891.

I am indebted to the Medical Officer for the Administrative County for the loan of copies of the Registrar's Summaries, showing the numbers resident in the District on the 29th March, 1896; to Mr. J. H. Roach, the Master of the Strand Union Workhouse, Edmonton; and to Mr. William Lee, Master of the Westminster Union Workhouse, Poland Street; for particulars of the inmates belonging to the several parishes in this District, resident in these institutions on the night of the Census.



^{*} The manner in which the population, under the "Equalisation Act," is estimated is a matter more for the consideration of the Guardians, than of this Board, but it may be noted that during a census the number of houses in blocks of Artizans' Dwellings, and "Mansions" in flats, are not reckoned singly, but in groups, the front door being the regulating factor; whereas in the return made in intercensal years a different standard is taken.

TABLE I. Sub-Registration District of St. Anne, Westminster, comprising the Parish of St. Anne, Soho.

Census	Separate		HOUSES.	Building.	PER	Total.	
Years. Families.	Inhabited,	Empty. Occupied day on	i by	Males.	Females.		
1891	2,987	938	179	17	6,245	6,072	12,317
1896	3,242	877	36 203	6	6,121	5,927	12,048

Sub-Registration District of Strand, comprising the Parishes of St. Clement Danes; St. Mary-le-Strand; St. Paul, Covent Garden; the Precinct of the Savoy; the Liberty of the Rolls; and part of the Temple.

	1891	3,081 2,858	1,240 1,127	55 . 319	27	6,028	6,541 5,811	12,900 11,839
_			Sanitary D	district of the STRAND	BOARD OF	F Works.*		
1	1861	10,562	3,818	234	22	20,705	22,233	42,938
	1871	9,616	3,271	302	22	18,306	19,357	37,663
	1881	8,260	2,838	418	13	16,040	16,642	32,682
	1891	6,068	2,178	508	44	12,613	12,604	25,217
1	1896	6,017)	1,974)	91 510)	26	12,059)	11,723)	23,782)
		Temple 83	30	- 12	_	90}	15	105

^{*} These figures include part of the Temple, which is comprised in the Registration Sub-District of Strand, but not in the Strand Sanitary District.

Table I. shows details relating to the houses and persons found in the two Registration Sub-Districts of Strand and St. Anne. Since the 1891 Census, births and deaths occurring in that part of the Temple in the Strand District, are not included as belonging to the Strand Sanitary District, and consequently the population there, must be deducted from these figures. Thus corrected it appears that there has been a decrease of 1,340 in the residents of the Strand District since the 1891 Census, equal to 5.2 per cent., but, taking into account an increase of 300 persons in the workhouses, the total decrease is at the rate of 4 per cent.

TABLE II.

Corrected Population of each Parish in the District 1896.

		Population.	Decrease of residents.	Net decrease
St. Anne, Westminster		12,206	940	
St. Clement Danes	 	8,499	269 419	227
St. Mary-le-Strand	 	1,325	280	293 299
St. Paul, Covent Garden	 	2,253	172	299
Liberty of the Rolls	 	294	134	146
Precinct of the Savoy Sub-Districts:—	 	137	66	66
St. Anne	 	12,206	269	227
Strand	 	12,508	1,071	803
Strand Sanitary District	 	24,714	1,340	1,030

The decrease in residents has been 8.2 per cent. in the Strand part of the District (6 per cent. counting paupers) and 2.18 per cent. in St. Anne's (1.8 with paupers).

The number of families per "inhabited house" was 3 for the whole District, 2.5 in Strand, 3.6 in St. Anne's.

The number of persons per "inhabited house" was 12 for the whole District, 10.5 in Strand, 13.7 in St. Anne's; but it must be kept in mind in comparing these figures that St. Anne's parish contains many artisans' dwellings and flats, which are not enumerated as separate houses. At each of the four previous census periods the number of persons per house was 11.5.

The number of persons per family was 3.9, which is a little

below the average of previous censuses; in the Strand part of the District it was 4.14, and in St. Anne's, where the decrease is greatest, 3.72.

Houses.—A new sub-division has been introduced at this Census under the heading "occupied in daytime but not at night," these were formerly included under the heading "empty houses." It will be noticed in Table I. that whereas in 1891, there were 508 empty houses in the District there were in March, 1896, 91 empty and 510 occupied by day only (19.6 per cent. of all the "houses" being in the latter class). The percentage of these purely business houses being in St. Clement's 17.4, St. Mary 10.0, St. Paul 26.8, Rolls 38.5, Savoy 22.8 and St. Anne's 16.6. Since 1891, the total number of census "houses" in the district has decreased from 2,730 to 2,601.

Age and Sex,—It is to be regretted that at this Census no enquiry was made relative to age, as without a knowledge of the number of persons of each sex living at various age periods, a true death-rate cannot be computed. In this District an alteration has been gradually taking place in the proportion of males to females in the population; thus taking males as 100, the females were 107 in 1861, 105 in 1871, 104 in 1881, 100 in 1891 and 97.58 in 1896* In the Strand Sub-district, the proportion is 97.6 females to 100 males, and in St. Anne 97.54. It is possible this change may be due to the alteration in the occupancy of many premises, these houses at one time each occupied by a family who would keep one or more female servants, are being utilised for business purposes, lodging-houses, or sublet in tenements. As the death-rate among males is greater than among females in the aggregate, this change would tend to raise the rate for the District, but this again would be much influenced by the ages of the persons of each sex. Mr. Shirley Murphy in his report to the County Council for 1893 has worked out the effect of the varying distribution of males and females of different ages in each of

^{*} In England and Wales the proportion was 100 to 105 for two decades previous to 1891, but at that Census females rose to 106.

the Sanitary Districts of London from the 1891 Census returns and gives the figure 1·11857 as the factor by which the death rate of the Strand District should be multiplied in order that it may be properly compared with the rest of the country. (The recorded death rate for all London requires similarly to be multiplied by 1·0656.)

The relative rates of mortality of the sexes will be seen in the accompanying Table; the number of deaths of males in

TABLE III.	Deaths of Males per 1,000 male inhabitants.	Comparative Mortality figure.	Deaths of Females per 1,000 female inhabitants.	Comparative Mortality figure
In London during 10 years, 1881-90	22.03	100	18.77	85
" Strand District, 1896	24.84	112	18.62	84
" St. Anne Sub-District	21.21	96	16.61	75
,, Strand Sub-District	28.35	128	20.5	98

London is taken as 100 in order to allow comparison to be the more readily made. Lest it should be thought that the excess of deaths in the Strand Sub-District is due to deaths of infants, I have also calculated out the comparative figures after deduction of such deaths and corresponding population, and find on the contrary that while in St. Anne's the comparative figure is but little affected, in the Strand Sub-District it is raised to 146 for males and 113 for females.

BIRTHS.

The total number of births registered in the District was 569. This has to be corrected by the addition of 12 births in Poland Street Workhouse, and 4 in Edmonton Workhouse, while 7 births in Bear-yard Workhouse have to be placed to the credit of St. Martin-in-the Fields parish, leaving a total of 578 births. The birth-rate is thus 23.36 per 1,000 inhabitants, as against 24.83 in 1895. The birth-rate in London for 1896 was 30.2 per 1,000.

	Male.	Female.	Total.	Rate per 1,000 of Population in 1896.	Average Rate per 1,000 in the 5 years 1891–95.
1. St. Anne's Sub- District 2. Strand Sub-District	143 144	149 142	292 286	23·89 22·85	25·55 22·00
	287	291	578	23.36	23.812

DEATHS.

The total number of deaths, after correction,* which were registered as properly belonging to this District, during the year was 537, as compared with 551 recorded during the preceding year. Upon the basis of the estimated population already referred to, this is equivalent to an annual death-rate of 21.71 per thousand persons throughout the District, as compared with 23.81 per thousand, the average rate for the preceding five years. The death-rates in the four quarters were as follows:—

	1	st Quarter.	2nd Quarter.	3rd Quarter.	4th Quarter.
London		19.2	17.4	18.4	17.7
Strand		22.8	21.7	18.4	21.7

^{*} The correction above referred to consists in omitting all deaths which took place in hospitals and kindred institutions within this district of persons not properly belonging to it; and, on the other hand, of including every death of such of its inhabitants as has occurred in hospitals, infirmaries, lunatic asylums, &c. throughout the Metropolis generally, and also those of paupers belonging to the several parishes of which the district is constituted, which have happened in the workhouses of the Strand and Westminster Unions respectively.

TABLE V.

London and Strand Death Rates for the year ending 31st December, 1896 (366 days), compared with the average rates for the five years, 1891-1895.

		Annual rate per 1,000 Persons Living.											DEATHS UNDER 1	
DISTRICTS.		TOTAL DEATHS PRINCIPAL ZYMOTIC DISEASES.			DEATHS FROM						YEAR to 1,000 BIRTHS.			
	Average of 5 years.	1896.	Average of 5 years.	1896.	Small Pox.	Measles.	Scarlet Fever.	Diphtheria.	Whooping Cough.	Fever,	Diarrhea.	Average of 5 years.	1896.	
London	20.24	18.2	2.70	3.14	0 00	0.82	0.21	0.60	0.65	0.14	0.72	156	161	
Strand Sub-Districts:	24.14	21.7	2.47	2.67	-	1.09	0.20	0.12	0.32	0.04	0.88	194	186	
St. Anne	20.04	18.80	2.21	2.69	-	1.141	0.16	0.08	0.40	0.08	0.81	176	202	
Strand	28.00	24.45	2.76	2.63	_	1.04	0.24	0.16	0 24	_	0.96	216	171	

Note.—Where the deaths under any heading are too few to express as a rate per 1,000 within two places of decimals, 0.00 is inserted; where no deaths have occurred, it is expressed thus —.

Appended to this report (pp. 60-62) are Tables A and B required by the Local Government Board, together with Tables showing the causes of death in the Strand District, and in each of its Sub-Districts at various groups of ages and distinguishing males and females.

From these Tables it may be seen that 550 deaths occurred in the District; 229 of these were of persons who did not belong thereto, and 216 persons belonging to the District died outside its bounds. 150 inhabitants of the District died in Poor Law Institutions, 15 in Lunatic Asylums, 6 in Fever Hospitals, and 89 in General and Special Hospitals; thus 47.8 per cent. of the deaths of residents occurred in Public Institutions (32.4 in St. Anne, 60.4 in Strand Sub-District); 27.6 per cent. of the deaths in all London were under similar circumstances.

TABLE VI.
Showing Locality at time of Death.

Registration		tricts.	hous	ork- es and irm- ies.	Spe	neral nd ecial oitals.		ver oitals.		natic lums.		Total	s.
Sub-District.	Males.	Females.	Males.	Females.	Males.	Females.	Males.	Females.	Males.	Females.	Males	Females.	Males and Females.
St. Anne Soho	85	71	18	14	26	9	-	2	2	4	131	100	231
STRAND	66	55	72	46	33	22	1	3	8	1	179	127	306
STRAND DISTRICT	151	126	90	60	58	31	1	5	10	5	310	227	587

Deaths under 1 year of Age.—108 infants died in 1896 as compared with 105 in 1895, 96 in 1894. Compared with the number of births in the year, there were 186 deaths per 1,000 births. The London rate was 161 per 1,000 births.

As the number of deaths at this age is looked upon to a certain extent as an index of the healthiness of a district, it is important to observe that the central districts of London have always had to record a high mortality figure. Thus while the average of the last 30 years for all London has been 157, that for the same period for the Strand District has been 230, for St. Anne's 229, and for the Strand Sub-District 235. During that period however, while the rate for London as a whole has remained almost stationary, the rate for this District has materially improved; thus during the four ten-yearly periods since the Board was constituted, the rates have been respectively 257, 253, 229 and 209; this improvement has however been mainly due to the marked improvement which has taken place in the St. Anne Sub-District where the rate has fallen from 265 per 1,000 births to 189. Further examination into the figures for the St. Anne Sub-District for the last 30 years, shows that the decrease is confined to the

latter half of that period and is co-incident with the removal of much insanitary property, and by the opening up of the District produced by the formation of the broad thoroughfares of Charing Cross Road and Shaftesbury Avenue. I look forward to a similar improvement in the health of the Strand Sub-District when the area which I represented in 1894 under the "Housing of the Working Classes, Act," is re-constructed.

During the last year, of the 108 infantile deaths, 76 died before the age of six months was reached and of these 25 died soon after birth from debility and other causes. The other causes of death were as follows:—

TABLE VII.

			Under 6 months.	Between 6 and 12 months.	Total.
Measles			1	6	7
Whooping Cough			3		5
Diarrhœa			10	2 5	15
Tubercular Disease			2 2	5	7
Syphilis			2	_	2
Convulsions and other	Nerv	vous			
Diseases			7	1	8
Diseases of Respiratory 8	System		12	8	20
,, ,, Digestive Septic causes	**		4	1	5
Septic causes			_	1	1
Parasitic Diseases			_	1	1
Dietic ,,			_	1	1
Marasmus			6	_	6
Accidents and Injuries			4	1	5
			51	32	83

As will be seen from the subjoined Table VIII. the deaths among male infants were much higher than among females. The female infantile death rate in the District approximates closely to that of all London during the 10 years 1881–90, but while the infantile male rate for London was 164, that in this District last year was 237 per 1,000 births.

TABLE VIII.

Death Rate under 1 year of age, per 1,000 births.

	Males.	Females.	Both Sexes.
St. Anne Sub-District	237	167	202
Strand ", ",	236	105	171
The District	237	137	186

Deaths at various Age Periods.—The Registrar-General in a valuable supplement to the 55th Annual Report, has published a summary of the Mortality Returns for every Registration District in England and Wales during the 10 years 1881–90. Registration Districts usually follow the lines of Unions, rather than those of Sanitary Districts, hence the value is in many cases considerably reduced. This is especially the case here, as the Strand District comprises parts of two Unions, I append however, an extract from this Report showing the relative age mortality of England, London, and the Strand and Westminster Registration Districts, because the figures relating to the last two give an idea of what the figures would be for the Strand Sub-District and St Anne Sub-District respectively.

TABLE IX.

Death rates per 1,000 persons living at different age periods.

Age Groups.		England and Wales.	London.	Strand Union.	Westminster Union.	
All Ages.		19·08 66·82	20·31 68·16	28·27 109·6	18·45 72·32	
5—		5·29	5·86	10.65	4·30	
10—		3·02	2·89	6.52	1·52	
15—		4·35	3·78	6·82	2·23	
20—		5·61	4·86	7·71	3·05	
25-		7.53	7.64	13.73	6.94	
35—		11·42	13·05	24·06	13.63	
45—		17·06	20·21	35·56	19.36	
55—		31·33	35·38	48.54	36·02	
65—		64·65	68·89	73.96	69·50	
75 and upwar		153.67	155.87	157.84	154.03	

Causes of Death.—As in former years, deaths from diseases due to Tubercle (phthisis, scrofula, &c.), and from other diseases affecting the respiratory system have occupied a prominent place. An analysis of the deaths due to these two sets of causes shows that the tubercular diseases are in excess of the London average in the Strand Sub-District in the cases of both males and females, and in respect of respiratory diseases the male deaths in the same Sub-District are excessive. Thus London male tubercular rate was 3.6, St. Anne, Sub-District, 3.88, Strand District, 6.16.

London Female Tubercular Rate was 2.42; St. Anne, 2.14; Strand Sub-District, 3.39.

London Male Respiratory Rate was 4.67; St. Anne, 3.72; Strand Sub-District, 6.16.

The General Death-Rates of the Parishes comprising the District, after making due correction for deaths in hospitals, &c., appear to be:—

	1896	Average of previous 3 years
St. Anne, Soho	18.80	18.52
St. Clement Danes	24.60	28.67
St. Mary-le-Strand	31.46	30.03
St. Paul Covent Garden	16.82	15.82
The Precinct of the Savoy and } The Liberty of the Rolls	16.00	22.70

Subjoined are also the death-rates for the Area represented under the "Housing of the Working Classes Act":—

			1896.	Average of prevous 5 years.
The Area		 	35.2	37.7
Sub-Area A		 	35.3	38.5
Sub-Area B	***	 	30.2	33.7
Sub-Area C		 	34.5	38.0

NOTIFIABLE INFECTIOUS DISEASES.

The number of cases notified in the Strand District in 1896, was 187. The amount paid for certificates during the year was £16. 19s 6d., which is refunded to this Board by the Metropolitan Asylums Board.

TABLE X.

Cases notified per 1,000 total population in the 53 weeks of 1896.

Disease).		London.	Strand.	St. Anne Sub-District.	Strand Sub-District
Smallpox			0.06			
Ct 7 77			5.69	5.25	5.31	5.19
Diphtheria & M	embr	anous	170 770			
Croup			3.14	1.45	1.79	1.12
Typhus Fever			0.001	_		_
Enteric Fever			0.71	0.36	0.24	0.47
Continued .,			0.02	-	_	
Relapsing ,,			0.00	-	_	_
Puerperal ,,			0.06	0.04		0.08
Cholera			0.003	_		_
Erysipelas			1.45	0.44	0.57	0.32
Total			11.08	7.55	7.92	7.19

The notifications received were at the rate of 7.8 per 1,000 of the resident population, against 7.9, 7.3, 11.3 and 4.5 in the four preceding years respectively. 67.37 per cent. of the Strand cases were removed to hospitals, as shown in detail in Table XIV. (Form B.) p. 57.

74.6 per cent. of the scarlet fever, 58.3 ,, ,, diphtheria, 66.6 ,, ,, enteric fever, and 9.9 ,, ,, erysipelas cases, were treated in hospital.

TABLE XI.
Infectious Cases Notified in London.

Year.	Small Pox.	Scarlet Fever.	Diphtheria and Croup.	Enteric Fever.	Typhus Fever.	Other Con- tinued Fevers.	Puerperal Fever.	Erysipelas	Cholera.	Relapsing Fever.	TOTALS.
1890	60	15,330	5,420	2,877	35	237	206	4,598	25	7	29,795
1891	114	11,398	6,412	3,372	27	152	221	4,764	23	39	26,552
1892	423	27,096	8,356	2,465	20	147	347	6,934	54	7	45,849
1893	2.813	36,901	13,694	3,663	22	205	397	9,700	86	4	67,485
1894	1,192	18,440	11,190	3,360	21	162	253	6,080	21	2	40,925
1895	978	19,757	11,223	3,506	14	105	236	5,660	29	3	41,511
1896	304	25,676	13.941	3.200	6	103	279	6,438	13	3	49,963

Smallpox.—No cases were notified in the Strand District.

TABLE XII.

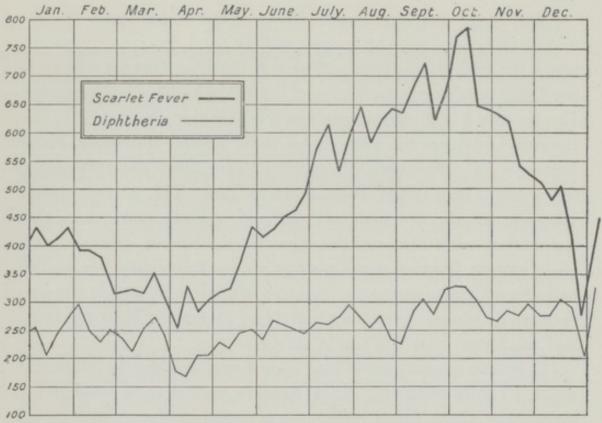
Scarlet Fever, Diphtheria and Membranous Croup cases and deaths in age periods. Strand District, 1896.

		0-1 yrs.	1-5 yrs.	5-10 yrs.	10-15 yrs.	15-20 yrs.	20-30 yrs.	30-40 yrs.	Total.
Scarlet Fever	Cases Deaths	_	35 4	51	23	18 1	3 _	_	130 5
Diphtheria	Cases Deaths	2	15 2	8	2	4	4	1	36 3

Scarlet Fever.—There was in 1896 an increase in Scarlet Fever both in London and this District, the increase being 1 per 1,000 for the Metropolis, 0.65 for this District. The rise and fall week by week in the number of cases in the Metropolis may be seen on the accompanying chart. Mr. Shirley Murphy has pointed out that the greatest mortality occurs during the winter months, although the number of cases are fewer than those in autumn. This statement holds good for the year 1896 as the subjoined Table shows:—

Quarter.	Cases notified.	Deaths.	Case Mortality.	Mean case Mortality taken as 100.	Death rate per 1,000 population.
1st	4,778	264	Per cent. 5.5	150	0.24
2nd	4,889	197	4.0	109	0.18
3rd	8,162	218	2.6	71	0.21
4th	7,847	263	3.3	90	0.22

In this District 62 males and 68 females suffered, and 5 of the females died, 4 of the deaths being in the first and one in the last quarter of the year. The death-rates per 1,000 inhabitants were in London 0.22, in the Strand District 0.20, in St. Anne's Sub-District 0.16, in the Strand Sub-District 0.24.



Cases of Scarlet Fever and Diphtheria (including Membranous Croup) notified in London during each of the 53 weeks of 1896.

Note.—The Scarlet Fever curve descending from that of 1895 reached its lowest level in March and April, after which it rose to a maximum in the 40th and 41st weeks of the year in October. The rapid fall beginning in the 42nd week is co-incident with a marked fall in the temperature of the air. (The mean temperature of the air in October was 3.2° below and in November 3° below the average of 55 years).

Of the smaller depressions the fall in the beginning of April is accentuated by the occurrence of the Easter holidays. A slight check in the rising curve is shown in the beginning of June, at the time of the Whitsuntide holidays. The depression in July is co-incident with if not due to a fall in the temperature. while the check in the rise throughout August coincides with the period of school holidays. There was also a much lower temperature at that time, but this continued during September when the curve was again rising. The short holidays at Easter, Whitsuntide and Christmas operate to some extent by throwing notifications into the succeeding weeks, thus reducing the number which properly belong to the week in which the holiday occurs; but these holidays also decrease the number of cases of Scarlet Fever by removing for the time the chance of exposure to infection to which children of school age are liable. It should also be noted that while the summer holidays do not extend over the same period for all schools in London (some beginning and finishing earlier than others,) at Easter, Christmas, &c. all the schools are closed at tive same time.

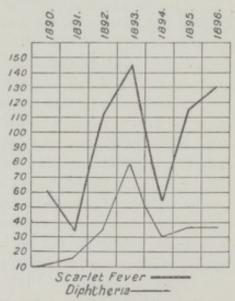
The *Diphtheria* curve follows somewhat closely similar lines to those of Scarlet Fever, showing the existence of a more or less close relationship between the two diseases; that other factors, however, operate in the case of Diphtheria is apparent on examination of the differences which exist in the two curves.

Diphtheria and Membranous Croup.—The notifications of this disease in London were at the rate of 3·14 per 1,000 inhabitants, as compared with 2·7 in 1895. The rate for this District was 1·45 per 1,000 inhabitants, having been 1·2 in 1895. The death-rate for London per 1,000 inhabitants was 0·60 for this District 0·12, for the Sub-District of St. Anne, Soho, 0·81, and for the Strand Sub-District 0·16. Diphtheria like Scarlet Fever affects more especially the younger ages of life as is shown in Table XII. above; up to 10 years of age the male sex suffered a little more than the female, but after that age the cases in the Strand District were solely among females, doubtless due to the fact that they would be in closer attendance upon children suffering from this disease than would males. Seventeen males and 19 females were affected; 2 of the former and 1 of the latter died.

Defective sanitary conditions were found existing in houses in which 13 cases occurred. In 4 families second cases developed; inclusive of these, direct infection was traced in 8 cases.

From the chart showing the number of cases of scarlet fever and diphtheria notified weekly in London, it will be observed that there is a very great similarity in the curves of the two diseases. The same is also noticeable in accompanying diagram showing

the cases notified during the last seven years in the Strand District. There is indeed, often, such an apparent similarity in the symptoms of the two diseases as to lead to the one being sometimes mistaken for the other. During recent years considerable attention has been given to the bacteriological examination of affected throats, and it is found that cases of apparently simple sore throat are due to the presence of the germs



Notifications in the Strand District during the Years 1890-96.

believed to produce diphtheria, while on the other hand, cases (even ending fatally) appearing to be diphtheria, may not be due

board had it under discussion up to almost the end of the year, whether the facilities which they provided in connection with their hospitals for bacteriological examination, should be extended to the metropolis generally, but it was finally decided not to do so, but to leave it to local authorities to initiate. Your Board has passed a resolution that arrangements should be made to enable medical men practising in the District, to have the benefit of a bacteriological test in doubtful cases, and will be put into practical shape in 1897.

Enteric Fever.—During 1896, the cases of this disease were fewer in number than in the years immediately preceding, both in London and in the Strand District. It will be remembered that in the end of 1894 and beginning of 1895, the cases of typhoid fever markedly increased, and I drew your attention to the fact that while some cases were undoubtedly due to the eating of oysters contaminated with sewage, the defective filtration by the water companies during the period of the floods in the Thames was probably the cause of the increase. Both these suggestions have been amply confirmed, and steps are being taken to protect oyster-beds from such contamination. The question of the water supply of London has also been occupying the attention of the County Council. The occurrence of such outbreaks as this one of typhoid, that of cholera at Altona in 1894, and others elsewhere is bringing about the conviction that reliance cannot be placed upon sand-filters to protect communities from water-borne disease. So long as we draw water from polluted sources like the Thames, we must expect at times outbreaks of various intestinal disorders, and should the water at these particular periods happen to contain the germs of cholera or enteric fever, epidemics of these diseases will certainly ensue. It is of extreme importance, therefore, that a pure source of water supply should be provided for London without delay.

PRINCIPAL DISEASES OF THE ZYMOTIC CLASS.

The Registrar-General classifies small-pox, scarlet fever, measles, diphtheria, whooping-cough, fevers (typhus, enteric and

continued) and diarrhoea under this heading. The Zymotic deathrates for London and the Strand District were 3.14 and 2.7 respectively per 1,000 of the population. (See Table V.)

Compared with the averages in the ten preceding years, the mortality from scarlet fever, and "fever" throughout London, was below the average, while that from measles, whooping-cough,

diphtheria and from diarrhœa showed an excess.

Measles was very prevalent in the District in the early part of the year. During the 1st Quarter, the outbreak was worst in St. Anne's Sub-District, but during the 2nd Quarter, it was very severely felt in the Strand Sub-District; and it became necessary to require the exclusion of the children in affected houses from the schools under section 88 of the Day School Code. Leaflets, giving instruction as regards measles, were distributed throughout the affected parts of the District with the view of impressing upon parents the serious nature of the disease, and the precautions which should be taken to prevent infection, and pointing out the risk of children suffering from the disease being exposed to cold or damp. The officers of the Public Dispensary in Stanhope Street, who attended most of the cases in that neighbourhood, kindly distributed the leaflets in the houses to which they were called; and similar information was also published in the St. Anne's Parish Magazine by the Rector.

The question of adding Measles to the list of diseases which have to be notified has been brought under the consideration of your Board, on several occasions, in communications from other Authorities, but the reasons advanced in favour of the proposal have not been sufficiently convincing to induce the Board to alter a previous decision (as recorded in Mins. vol. 19, p. 176) that measles should not be notifiable. An exhaustive report on the measures that may be adopted by Sanitary Authorities with a view to obtaining control over this disease, by Dr. Theodore Thomson, was published in 1896, in the supplement to the 24th Annual Report of the Local Government Board. These may be

summarised thus :-

(1.) Compulsory notification [a] for all cases; [b] for first cases in a house only.

- (2.) Voluntary notification by medical men, clergy, district visitors, school teachers, &c.
- (3.) [a] Closing of Day and Sunday Schools; [b] Exclusion of members of affected households from schools.
- (4.) Prevention of persons attending work where infection is likely to be spread, as by hawkers, milk-sellers, teachers, tailors.
- (5.) Better isolation at home.
- (6.) Provision of hospital accommodation.
- (7.) Disinfection of invaded households.
- (8.) Preventing the issue of books from public libraries to infected houses.
- (9.) Instruction of the public by leaflets and other means.

To these may be added that another means of ascertaining the existence of measles where notification does not exist, lies in the information to be obtained from the list of sickness cases treated by the Parish Medical Officers.

Whooping Cough caused 8 deaths in 1896 in the Strand District. During the 1st and 2nd Quarters of the year, there were a number of cases in the Strand Sub-District, and during the 4th Quarter it was introduced into St. Anne's by a family suffering from it coming from another locality to reside in that parish. Leaflets explaining the infectious nature of this malady were also distributed.

Diarrhæa.—22 deaths occurred from diarrhæa or enteritis, 15 of them being in children under one year of age. I have in previous reports, drawn attention to the relation between this disease and various meteorological conditions, especially the earth temperature. I need therefore only add that 19 of the deaths took place in June, July, August, and September.

DISINFECTION.

During the twelve months ending 31st December, 1896, 165 premises were purified and cleansed after infectious disease, and 3,698 articles were disinfected in your Board's apparatus; 116 articles were burnt in your destructor at the request of the owners.

In addition to disinfecting after cases of the various notifiable diseases, disinfection has also been effected on the certificates of medical men that it was requisite after cases of measles. Thorough cleansing of rooms, and in some cases disinfection by steam, has been resorted to after deaths from phthisis.

The Temporary Shelter was made use of during the time when

their dwellings were being disinfected by several families.

VACCINATION IN THE DISTRICT.

I am indebted to Mr. J. H. Penfold and Mr. C. B. Snell, Vaccination Officers respectively of Westminster Union and Strand Union, for the subjoined details relating to the performance of Vaccination in those parts of the above Unions included in the Strand District.

1895.	Births.	Successfully Vaccinated.	Insusceptible.	Died Unvaccinated.	Vaccination Postponed.	Removed and Address not known.	Remaining.
St. Anne Sub-District	279	174	1	28	12	31	33
Strand Sub-District	305	223	_	32	1	43	6
Totals	584	397	1	60	13	74	39

On the 25th June, 1896, I attended as your delegate a Conference of Delegates appointed by the Vestries and District Boards of the Metropolis at Islington Vestry Hall, to consider the question of the administration of the Vaccination Acts. A resolution was adopted that in the opinion of the Conference the Vaccination Acts should be administered by the Authorities that administer the Acts and provisions for the prevention of the spread of infectious diseases by notification, isolation, and disinfection.

The reasons adduced in favour of the resolution, are set forth in the following extract from a circular letter sent out to the other Local Authorities by the Vestry of Islington:—

"The Sanitary Authorities have the control of every means of the prevention of small-pox except that of vaccination, and this means of prevention should be placed under their juristiction. The transfer of this duty from the Boards of Guardians to the Sanitary Authorities would place the whole of the machinery for the prevention of the disease under one organisation, the relative parts of which could be mutually adapted to suppress smoothly and expeditiously any appearance of epidemic.

"If vaccination were in the hands of the Sanitary Authorities it would obviate much misunderstanding, especially at the most serious and important time of an outbreak of small-pox, when the means of suppression being in the hand of two Authorities in the same locality leads to much confusion, counter-proposal, and delay.

"The responsibility not only for stemming an immediate outbreak, but also preventing a future outbreak, should be placed upon the Sanitary Authority. Accusations on the one hand that it is due to the insufficient provision of hospital accommodation, and on the other that it is due to insufficient vaccination, could not then be made by one public body against another.

"The Sanitary Authorities have notified to them all cases of small-pox, and consequently are immediately acquainted with the extent and locality of outbreaks, and know when and where vaccination is most urgent.

"In case of an outbreak, it falls upon these Authorities to receive the notifications, to provide for isolation and disinfection, and, in short, to undertake the whole duty of combating the disease; and in case of inability to cope with it the odium falls upon them. The transfer of the control of vaccination need not make any difference in the cost, as the same officers would carry out the work, but it would make a vast improvement in the administration, inasmuch as it would be worked as part of one public department."

It had been intended to send a deputation from the Conference to urge the above views upon the Local Government Board, but that body desired first to have an opportunity of considering the report of the Royal Commission which was shortly after presented.

After sitting and taking evidence for seven years, the Royal Commission presented a lengthy report affirming the beneficial action of vaccination as a protection against small-pox, recommending that calf-lymph should be available, that vaccination be performed at the parents' houses, instead of at central stations, and that the age within which vaccination is made obligatory, should be six months as in Scotland. Dealing with the question of what means other than vaccination can be used for diminishing the prevalence of small-pox, and how far such means could be relied on in place of vaccination, the report says:—

"We have no difficulty in answering the question-What " means other than vaccination can be used for diminishing the " prevalence of small-pox? We think that a complete system of " notification of the disease, accompanied by an immediate hos-" pital isolation of the persons attacked, together with a careful "supervision, or, if possible, isolation for sixteen days of those " who had been in immediate contact with them, could not but " be of very high value in diminishing the prevalence of small-pox. "It would be necessary, however, to bear constantly in mind as "two conditions of success: first, that no considerable number of " small-pox patients should ever be kept together in a hospital "situate in a populous neighbourhood; and, secondly, that the "ambulance arrangement should be organised with scrupulous " care. If these conditions were not fulfilled the effect might be " to neutralise, or even do more than counteract, the benefits " otherwise flowing from a scheme of isolation."

The Commissioners while recognising what a system of isolation can accomplish as an auxiliary, see nothing to warrant the conclusion that it could be relied on in place of vaccination.

MORTUARIES IN THE DISTRICT.

During the year, the number of dead bodies received into the mortuaries in the Strand District were as follows:—

		Total number of Bodies.	After Infectious Disease.	Post-mortem examinations made.
Strand Mortuary St. Anne's "	 	50 27	1	22 8
Total	 	77	1	30

Inquests were held on the bodies of 45 residents and 25 non-residents. The percentage of inquest cases to total deaths among Strand inhabitants 8.3, in London 9.06. The proportion of such cases was largely increased by the deaths of 9 persons through a fire in Church Street, Soho.

Your Board passed a resolution (16th Sept. and 28th Oct.) to the effect—"That among the cases which require inquests by the "coroner, there may be from time to time some involving questions "of importance from a public health point of view—such as deaths "attributable to infectious disease, to poisoning by unsound food, "to insanitary conditions, &c. The Sanitary Authority has no "means of gaining a knowledge of such cases except through the "medium of the Press, and that the coroner be requested to "inform the Board when such cases arise."

SANITARY WORK.

The following list summarises the work carried out under the supervision of the Department during the year:-Number of visits paid by Sanitary Inspectors* 5,217 Preliminary notices served ... 435 Orders made by the Board ("Public Health London Act") 48 Letters written 757 Premises in which works have been carried out 437 DWELLING HOUSES :-Inspections* ... 947

^{*} Exclusive of special inspection of houses in area represented under the "Housing of the Working Classes Act," and of "Registered Houses."

Overcrowding abated (by written notice)	***	11
Cleansed and Whitewashed Throughout		35
(Lartiany		144
Ventilation improved, walls, ceilings and floors repa	aired	48
Roofs made water tight		43
Water closets:—		
Reconstructed and repaired		217
Additional provided		18
Water re-instated		60
Flushing apparatus repaired		12
Obstructions removed from		92
New pans and traps provided		19
Paus and traps cleansed		35
Drainage:—		
New drains constructed		124
Drains repaired		50
Sink and lavatory waste pipes disconnected	and	
trapped		145
Rain water pipes repaired		32
Obstructions removed from drains		11
Paving required or repaired :-		
In yards		30
In basements		26
Dust and dung removal:—		
Sanitary bins provided*		50
Offensive refuse removed from premises		31
Water supply:		
New service pipes laid on direct from main		36
Cisterns repaired and cleansed		40

^{*} Under the Board's system of dust collection, fixed bins are gradually being disused and abolished.

THE STRAND DISTRICT, LONDON.		147
Re-instatement of water after being cut water Company	off by	7
Certificates granted under "Public I (London) Act," Section 48	Health	2
Under-ground rooms:— Use prevented as separate dwellings		5
Workshops:—		
No. of Inspections		500
No. of Visits		1,358
Letters written		58
Extra W.C. accommodation provided		2
Overcrowding abated		3
Cleansed		247
Ventilation improved		3
Number of Outworkers		280
Premises notified to H.M. Inspector		41
Ditto from ditto		7
Complaints from Home Office re overcrowding	g and	
nuisances		2

The street markets have been regularly inspected every day (including Sundays).

The stables and mews, 58 in number, have been regularly inspected, more particularly in regard to the periodical removal of manure.

The number of works of sanitary improvement carried out include a number of extensive and complicated schemes of redrainage and re-construction which have been carried out in a satisfactory manner under the supervision of your Inspectors.

Systematic inspection of houses has gone on regularly throughout the year, as required by the "Public Health Act." The houses dealt with include those in Church Street, Dean Street, Frith Street, Greek Street, Tavistock Street, Maiden Lane, and King Street. Smoke Consumption.—During the year much good has been done in the District by abating nuisances caused by smoke. Those coming under Sub-section A, of Section 24 of the "Public Health Act," have been dealt with by your Surveyor; those under Sub-section B, have had statutory notices served upon them through the Health Department. Such orders have been made in regard to chimneys sending forth black smoke in such quantity as to be a nuisance, and in each case have been complied with.

Houses let in Lodgings.—Since these Bye-laws came into operation, in 1894, your Board has resolved to register 77 premises. Five of these premises have since been closed. The houses are inspected at least once a week, with satisfactory results. In most cases, there is a desire to comply with the Bye-laws; but in one case, the owner of three houses and agent of others, was cautioned on one occasion by the Health Committee, and on a second subsequent occasion, cautioned by the Magistrate at Marlborough Street Police Court. The agent for another house was fined 20s. and costs for neglecting to cleanse the tenements throughout. The London County Council have recently made enquiry as to the way in which these Bye-laws were being carried out by the Local Authorities, and, as a result, have expressed the opinion that wherever these Bye-laws have had a fair trial, their action has been productive of good.

"Customs and Inland Revenue Act, 1890."

Applications to the number of 340, have been received by me for certificates under this Act, stating that houses are so constructed as to afford suitable accommodation for the persons dwelling therein and that due provision is made for their sanitary requirements. After personal inspection, I granted the required certificate in respect of 279 of them, and refused it for the remaining 61.

Artisans' Dwellings.—Appended are some statistics relating to the Artisans' Dwellings in the Strand District.

THE STRAND DISTRICT, LONDON.

			per		Dea	ths.				Numb	er of death	s from	Infectious
Name of Dwellings.	Population.	Births.	Birth-rate po 1,000.	Under 5 years.	5 years to 65 years.	Above 65 years.	Total.	Death- rate per 1,000.	rate per Death- 1,000. rate.	Tuber- cular Diseases.	Other Zymotic Diseases.	Respira- tory Diseases.	Diseases notified.
Sandringham Buildings	1,290	25	19.3	7	2	0	9	6-97	Average of 10 years.	3	2	1	Scarlet Fever 14. Diphtheria 5.
Newport Dwellings	1,229	52	42.3	8	6	0	14	11:39	Average of 3 years.	2	2	5	Scarlet Fever 6. Diphtheria 4. Erysipelas 1. Enteric Fever 1.
Eversley Buildings	140	3	21.4	3	1	0	4	28.5	Average of 3 years.	1	2	0	Scarlet Fever 2.

Statistics relating to Artisans' Dwellings in the Strand District in 1896.

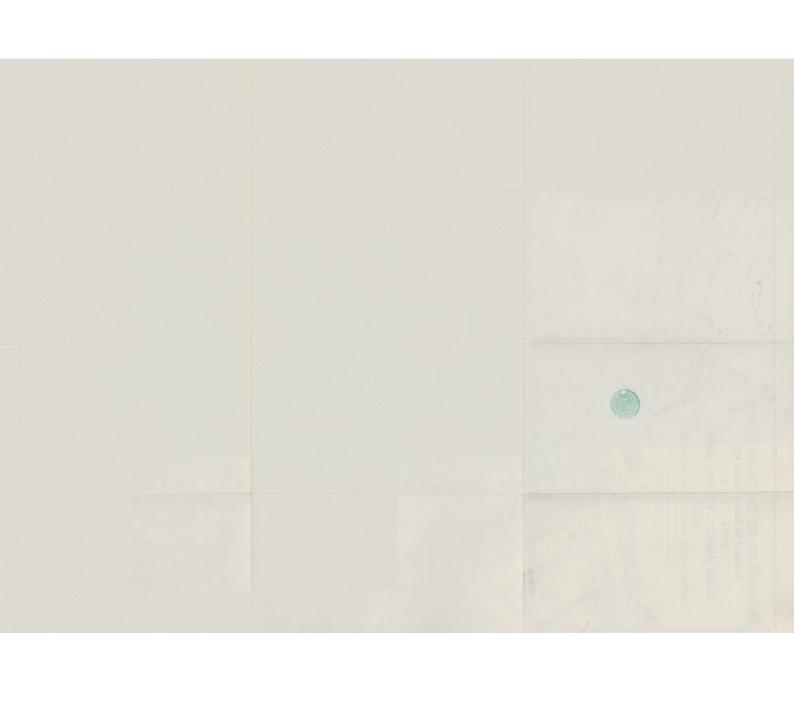
"Housing of the Working Classes Act."

With reference to the Insanitary Area which I represented to the London County Council under this Act in November, 1894, I had hoped to have been able to report that before the end of 1896 the work of re-modelling the Area had already begun. An enquiry was held by a Commissioner, (Mr. H. T. Steward), appointed by the Home Office for the purpose of ascertaining the correctness of my representation, and the sufficiency of the scheme of the County Council for the improvement of the Area. The enquiry was held in the Board-room here, on the 5th, 6th, 11th, 12th, 20th and 21st days of March. I was present at the enquiry and gave evidence during three days and part of a fourth, in support of my "official representation." Mr. S. A. Lovett, Medical Officer of Health for St. Giles' District, and Dr. George Newman were in attendance to corroborate my evidence, but were not called. Evidence was also given by the Valuer, Architect, and other officers of the Council, by Dr. Bremner, Poor Law Medical Officer, the School Attendance Officer, &c. Although those interested on the Area were largely represented, the opposition appeared to be mainly directed to securing the extra compensation for property which is allowed, if the Home Secretary colours it blue instead of red, on the map which accompanies the Provisional Order.

The Council proposed to re-house only some 500 upon the site, but it was shown that a greater number of persons were actually employed in the immediate vicinity. A deputation from your Health Committee subsequently had an interview with the Housing Committee of the Council on the subject, with the result that the whole of that part of the Area marked "A," will be reserved for workmen's dwellings.

Since presenting this Report to your Board, the Home Secretary has issued the Provisional Order set out below in which he affirms the correctness of my "representation," and with some modifications as to re-housing and widening of streets as required by your Board, confirms the scheme of the County Council. Your Surveyor has prepared the accompanying plan which shows the Area (coloured in the same way as in the Plan 27c mentioned in





the Order) and its relation to the rest of the District; the parts in the Area coloured blue are those which, while not in themselves included in the unhealthy area, are yet necessary to be taken for the improvement scheme. Provision is made on the Area for the re-housing of 750 persons, being 250 more than proposed by the Council, and on the Millbank site for 1,500 instead of 1,269 persons.

"LONDON (CLARE MARKET, STRAND) IMPROVEMENT SCHEME, 1895.

" PROVISIONAL ORDER.

"Whereas the London County Council presented to me, The Right Honourable Sir Matthew White Ridley, one of Her Majesty's Principal Secretaries of State, a petition praying that an Order might be made confirming a scheme made by the said County Council under the 'Housing of the Working Classes Act, 1890,' for the improvement of a certain area situated partly in the Parish of St. Mary-le-Strand, partly in the Parish of St. Clement Danes, partly in the Parish of St. Giles-in-the-Fields, and partly in the Parish of St. Martin-in-the-Fields, in the County of London, and subject to the jurisdiction of the said County Council as the local authority under the said Act;

"And whereas a copy of the scheme and of the estimate with

which it was accompanied is annexed to this Order;

"And whereas on consideration of the said petition, and on proof of the publication of the proper advertisements, and of the service of the proper notices, I thought fit to proceed with the case, and directed a local enquiry to be made by Mr. Herbert Thomas Steward in, or in the vicinity of, the area to which the scheme relates, for the purpose of ascertaining the correctness of the official representation made to the London County Council as to the area, and the sufficiency of the scheme provided for its improvement, and any local objections to be made to such scheme;

"And whereas before commencing such enquiry the said Herbert Thomas Steward made public, by advertisement, his intention to make such enquiry, and stated the time and place at which he would be prepared to hear all persons desirous to be heard upon the subject thereof, in accordance with the provisions of section 18 of the above mentioned Act;

"And whereas the said Herbert Thomas Steward has reported to me in favour of the said scheme, subject to certain qualifications contained in his report;

"And whereas the number of persons of the working class that will be displaced by the scheme if carried out in accordance with this Order, is estimated at 3,172 as set forth in the following table:—

Number of Holdings.	Number of Rooms in each Holding.	Total Number of Rooms.	Average Number of Occupants in each Holding.	Total Number of Occupants.
530 270 35	1 2 3 or more.	530 540 138	2:84 4:31 6:35	1,510 1,164 219
835 Holdings.		1,208 Rooms.		2,893 Occupants.
	Add for C	ommon Lodgii	ng Houses	279
				3,172 Occupants.

"And whereas by the said scheme it is proposed to provide in the area to which it relates, accommodation for 500 persons of the working class, and on the site of the Millbank Penitentiary accommodation for 1,269 persons of the same class, making provision in all for 1,769 persons.

"Now in pursuance of the powers vested in me by the said Act, I hereby confirm the scheme and authorize the same to be carried into execution, subject to the following conditions and modifications:—

"With respect to the limits of the improvement area, the house in Clare Market numbered 159 on the plan marked 27c (annexed to a copy of this order, and sealed with the official seal of this office and here deposited) shall be excluded from the scheme; also the County Council shall not take any basement now existing below the surface of the ground on the properties in Denham Yard, marked 61 and 62 on the plan, or under Denham Yard, such underground premises being a bakehouse, &c, in connection with No. 321, Strand; and the houses and land which on the said plan are indicated by a blue colour, and numbered respectively by the numbers hereunder set forth, and which houses and lands are hereunder described, that is to say:—

Reference number on Plan.	Description.
1, 2, 3, 8 and 9	Houses and premises 35, 34, 33, 32, 31, and 30, Stanhope Street.
12	Ditto 28 and 27, Stanhope Street, and in Harford Place.
18 and 19	Ditto in White Horse Yard.
35	Ditto 7 and 8, Granby Place.
46 and 47	Ditto 115 and 116, Drury Lane.
53, 54, 55, and 56	Ditto 4, 3, 2, 1, Harford Place.
. 73	Premises, a factory, in Stanhope Street and White Horse Yard, and Clare Court.
75 and 76	Ditto 21 and 22, Stanhope Street.
82, 83 and 85	Ditto 15, 16 and 18, Blackmoor Street, and premises in the rear in Clare Court.
129	In Clare Market.
133, 147, 151 and 152	In Holles Street.
162	Premises in Nag's Head Court.
15, 16 and 17	In New Church Court.

shall not be deemed to be part of the unhealthy area in respect of which official representation was made, but shall form part of the improvement area to which the scheme as amended by this Order shall relate, and shall be deemed to have been included in the scheme as neighbouring lands.

"With respect to rearrangement and reconstruction of streets within this area, Denham Yard shall be kept open.

"With respect to the appropriation of lands, the scheme of the County Council shall be read as if, in lieu of the plan marked 27 and annexed to the scheme, was substituted the said plan marked 27c; and for the schedule there shall be substituted the following—

" SCHEDULE.

"The existing buildings upon the lands constituting the improvement area shall be taken down and removed, and new dwellings upon the said lands and upon the part of the site of the Millbank Penitentiary hereinafter mentioned shall be erected as may be determined from time to time in that behalf by the Council with the approval of one of Her Majesty's Principal Secretaries of State. The displacement of persons of the working class under this scheme shall proceed by degrees, and no such persons shall be displaced without such approval as aforesaid.

"The new dwellings shall be constructed in such manner as to position, elevation, size, design and extent of accommodation as the Council with such approval as aforesaid shall prescribe or approve, and to their satisfaction, so as to afford in the aggregate suitable accommodation for persons of the working classes in the proportions following, that is to say, upon the improvement area, as defined by plan No. 27c, there shall be provided accommodation for 750 persons; and in the dwellings on part of the site of the Millbank Penitentiary, as defined by the plan marked 27B, and thereon edged with a red line, there shall be provided accommodation for 1,500 persons, making a total provision for 2,250 persons.

"Such dwellings shall be furnished with such water-closets, sinks, water supply, and other proper sanitary arrangements as

the Council shall prescribe, and to their satisfaction.

"Such of the lands constituting the improvement area as shall not be required for the purpose of providing accommodation as aforesaid for 750 persons of the working class, may be sold, leased, or otherwise disposed of by the Council as they may think fit.

"STREET WIDENING.

"Drury Lane shall be widened to 40 feet by setting back the whole of the frontage on the east side, between Blackmoor street and Kemble Street, and Blackmoor Street shall be widened to 40 feet by setting back the whole of the frontage on the north side

between Drury Lane and Stanhope Street; and Clare Street shall be widened to 40 feet by setting back the whole of the frontage on the south side between Stanhope Street and Clare Market as shown by the dark red line on the said plan marked No. 27c.

(Signed) "M. W. RIDLEY

"Home Office, Whitehall, "20th January, 1897.

"SCHEME.

"For the improvement of certain lands within the Metropolis, situate in the Parishes of St. Clement Danes, St. Mary-le-Strand, St. Giles-in-the-Fields and St. Martin-in-the-Fields, in the County of London, in pursuance of the 'Housing of the Working Classes Act, 1890.'

"PRELIMINARY.

"Whereas an official representation, under the provisions of the Fourth Section of the 'Housing of the Working Classes Act, 1890,' was on the 23rd day of November, 1894, made to us, the London County Council (hereinafter referred to as 'the Council'), by Francis John Allan, M.D., the Medical Officer of Health of the Strand District, comprising the said parishes of St. Clement Danes and St. Mary-le-Strand, with respect to an area within the said parishes, under our jurisdiction as the local authority within the meaning of Part I. of the said Act, and delineated on the plan annexed to the said representation and thereon coloured red, which thereby represented (1) that houses, courts and alleys within the said area are unfit for habitation; (2) that the narrowness, closeness and bad arrangement of the streets and houses, the want of light, air and ventilation, and other sanitary defects, or one or more of such causes, are dangerous or injurious to the health of the inhabitants of the buildings in the said area, and of the neighbouring buildings; (3) that the evils connected with such houses, courts or alleys, and the sanitary defects in such area cannot be effectually remedied otherwise than by an improvement scheme for the re-arrangement and re-construction of the streets and houses within such area, or of some of such streets or houses.

"And whereas we, the Council, have taken such representation into our consideration, and, being satisfied of the truth thereof, and of the sufficiency of our resources, have passed a resolution to the effect that the said area is an unhealthy area, and that an improvement scheme ought to be made in respect of such area.

"And whereas it is necessary for the proper re-arrangement of the area aforesaid that certain neighbouring lands should be

acquired by us the Council.

"And whereas the Council in pursuance of the powers conferred upon them by section 3 of the 'Housing of the Working Classes Act, 1885,' have made arrangements with the Commissioners of Her Majesty's Treasury for the purchase of a piece of land, formerly part of the site of the Millbank Penitentiary, in the Parish of St. John, Westminster, in the County of London, which piece of land is shown upon the plan marked No. 27B, hereunto annexed, and thereon surrounded by a red line, upon which land it is proposed to erect buildings for the accommodation of 1,269 of the persons of the working class displaced by this scheme.

"Now therefore we, the Council, in furtherance of such resolution, and in pursuance of the provisions of the 'Housing of the Working Classes Act, 1890,' and the powers by the said Act conferred upon us, do make the scheme following, that is to

say:-

"IMPROVEMENT AREA.

"The lands delineated and coloured red and blue on the plan No. 27 to this scheme annexed, on which plan the lands referred to in the before mentioned official representation are coloured red and certain neighbouring lands are coloured blue, and all which lands are situate in the Parishes of St. Clement Danes, St. Maryle-Strand, St. Giles-in-the-Fields, and St. Martin-in-the-Fields respectively, in the County of London, shall constitute the improvement area to which the scheme refers.

"Acquisition of Lands.

"The lands constituting the said improvement area or any of them may, for the purposes of this scheme, be taken compulsorily.

"APPROPRIATION OF LANDS.

"The existing buildings upon the lands constituting the said improvement area shall be removed, and dwellings for the working classes shall be constructed thereon or on some part or parts thereof affording the accommodation and having the sanitary arrangements specified in the schedule* to this scheme annexed, and the street shewn on the said plan marked No. 27 shall be formed and widened as nearly as may be to the extent shewn by dark red lines on the said plan and according to the particulars set forth in the schedule to this scheme annexed.

"In the appropriation for the aforesaid purposes of the lands constituting the said improvement area, any regulation made for the purposes and in the manner set forth in the schedule* to this scheme annexed shall be duly observed.

"Upon the land shown upon plan marked No. 27B, and thereon edged with a red line, there shall be erected dwellings for the working classes affording the accommodation and having the sanitary arrangements specified in the schedule* to this scheme annexed.

"EXECUTION OF SCHEME.

"The Council shall carry this scheme into execution in accordance with and subject to the provisions of the 'Housing of the Working Classes Act, 1890,' and this scheme, and subject to such modifications thereof or additions thereto as may be prescribed and made under the authority of the said Act, the Provisional Order authorising the execution of this scheme, or the Act confirming such Provisional Order.

"SHORT TITLE.

"This scheme may be cited for all purposes as 'The London (Clare Market, Strand) Improvement Scheme, 1895.'

"Dated this 16th day of October, 1895.

"Sealed by order.

" (LS.)

(Signed) "H. DE LA HOOKE, "Clerk of the Council."

The Order was presented to the House of Commons and passed the first reading on 4th February, 1897. Royal assent given June 3rd, 1897.

[&]quot; * See Schedule substituted by Home Secretary.

Workshops.

The regular inspection of all work-places in the District continues to work satisfactorily; exclusive of shops, offices and Covent Garden, there are about 600 places where persons are employed in some form of mechanical labour.

At the beginning of 1896, the "Factory and Workshop Act, 1895" came into force (a memorandum on the Act is included in the Board's 40th Annual Report), and its provisions so far as these have to be carried out by your Board, have been complied with. The state of the law regarding factories and workshops is, however, very unsatisfactory, and it is to be desired that a consolidating Act be passed to remedy the confusion which exists.

Bakehouses.—By Section 27 of the above Act, no place underground can be used as a bakehouse unless it was so used on the 1st January, 1896, it is therefore desirable to record the bakehouses existing at that date. They were situated at:—

7,	Bear Street,
0	Disaleman Ctu

18, Blackmoor Street,

22, Blackmoor Street,

2, Bow Street,

6, Chandos Street,

13, Clare Street,

5, Clare Court, 86, Drury Lane.

104, Drury Lane,

11, Frith Street,

44, Floral Street,

34, Greek Street,

47, Greek Street,

28, Greek Street,

1, Little Compton Street,

33, Little Newport Street,

4, Macclesfield Street,

12, Nassau Street,

49, Old Compton Street,

21, Sardinia Street, 50, Stanhope Street,

9, Vere Street,

93, Strand,

321, Strand,

60, Wardour Street,

70, Wardour Street,

76, Wardour Street,

128, Wardour Street,

With one exception (viz. the muffin shop at 5 Clare Court) these are underground bakehouses. They have been regularly inspected.

Laundries.—There are 18 of these places of business in the District (17 being in St. Anne's, Soho). They have been frequently visited, and improvements have been effected in several by the provision of flooring suitable for the requirements of the work.

Marine Stores, 4 in number, have been inspected from time to time.

Dangerous Trades.—During the year the Home Secretary has, under the "Factory and Workshop Act, 1891," sec. viii. (1) certified that the following processes are dangerous or injurious to health, viz:—(1) the process of bottling aerated water, and the processes incidental thereto, including the examining and labelling of the bottles; and (2) the process of vulcanizing india-rubber by means of bisulphide of carbon and the processes incidental thereto. The effect is to require the adoption of measures for the avoidance or removal of the danger peculiar to the particular process.

LEGAL PROCEEDINGS.

A number of persons have during the year been reported to the Board for infractions of the "Public Health Act" and its Bye-laws. In five cases where these were apparently inadvertent, apologies have been accepted and the offenders cautioned, but in the following cases further proceedings were deemed necessary:—

NATURE OF COMPLAINT.	RESULT.
Nos. 2 and 3 Half Moon Court unfit for habitation	Closing Order
3 Half Moon Court, Tenant refusing to quit	Withdrawn, Tenant having left after receipt of Summons.
Infringement of Bye-law, No. 14 (Bye-laws under "Public Health Act, 1891," section 39 (1). Fail- ing to give notice before fixing w.c. apparatus	Fine, 20s. and costs.
Infringement of Bye-laws, Nos. 7 & 8 (Bye-laws for Houses let in Lodg- ings under "Public Health Act, 1891," section 94)	Cautioned.
Infringement of Bye-law, No. 13 (Bye-laws for Houses let in Lodg- ings under "Public Health Act, 1891," section 94)	Fine, 20s. and costs.
Accumulation of Filth	Injunction.

In regard to the last mentioned case considerable difficulty was experienced. The accumulation of water and filth was in an extensive cutting (81 ft. long, 12 broad and about 24 deep) on a building site where operations had been for some time suspended. Numerous complaints were received with reference to the nuisance caused, and notices had been served in reference thereto; finally, proceedings were instituted in the Police Court, but the question of remedying the nuisance being complicated by conflicting interests as to liability and by fear of danger resulting to the roadway and adjoining houses, the proceedings before the magistrate were suspended, and others were instituted in the High Court for a mandatory injunction. This was refused in the first instance, but was granted on appeal. The cutting was thereupon filled in and the nuisance removed.

INSPECTION AND ANALYSIS OF FOOD.

Subjoined is a list of food-stuffs which have been condemned as unfit for food during the year:—

Apples		8 bushels.	Cauliflowers		14	crates.
Bananas	15	4 crates.	French Beans			baskets.
Cherries	3	30 bushels.	Onions			bushels.
Chestnuts	2	21 bags.	Tomatoes			boxes.
Gooseberries	***	4 bushels.				ource,
Pears		8 boxes.				
Fineapples		4 ,,	Fish (Cods' Ro	es)	1	box.
Plums		00 baskets	Doule			11

This does not represent all the damaged food-stuffs disposed of by your Board, as much refuse fruit and vegetables are collected in Covent Garden Market in the special carts provided for the purpose.

The Acts relating to the sale of food and drugs have been systematically enforced throughout the District as in former years, under the supervision of your Health Committee, and from the report of your Board's Analyst it will be seen that a varied number of articles have been examined by him.

SEWER EMANATIONS AND HEALTH.

The following is a preliminary report on the above subject,

with replies from 58 Local Authorities to questions relating thereto, presented to the Health Committee, and ordered to be printed and circulated among the members of your Board:—

A suggestion was made to the Board by one of its members (Mr. Elgy) and was referred for consideration to the Health Committee, to the effect that it is desirable that Sanitary Authorities should have power to erect ventilating shafts on private property when such were necessary, on payment of a small annual sum by way of rent in a manner similar to that of the Post Office with regard to telegraph posts on houses. It was argued that as interceptor traps are now being largely used to separate house drains from the sewers to prevent the influx of air from the sewers into dwellings, there must be a greater escape of such air through the openings at the street level, such as grids, perforated manhole covers, untrapped gulleys, &c.; if such air is shut out from houses on account of its being injurious to health, it must also be detrimental to persons using streets in which street level openings exist; or should there be no such openings then the air of the sewers may become dangerous to the men employed therein. As the law stands a Local Authority may erect ventilating columns in the streets, but cannot place shafts for this purpose against private houses, walls, &c., without permission of the owner and occupiers. In most districts this permission cannot be obtained.

The Health Committee had the matter under consideration at their meeting in July, and instructed me to obtain the opinions of other local authorities as to obtaining increased powers to erect ventilating shafts and to report further on the subject. Directions were at the same time given to the Surveyor and myself, to place a sewer ventilating lamp, as an experiment, at some point in the district concerning which complaints have been made of offensive smells.

In order to obtain the desired information I issued a letter to the various Metropolitan Authorities, and to a number of others outside London, in which I asked for replies to the following questions:—

- (1) Have you had complaints with reference to sewer ventilators?
- (2) Have you been able to trace any deleterious influence upon health to the emanations from sewer ventilators?

a. At the street level?

- b. From ventilating shafts?
- (3) Do you consider it desirable that Sanitary Authorities should have power to erect ventilating shafts on private property?
- (4) Have you experience of any "Sewer Gas Destructors"? Have they proved satisfactory?

Fifty-eight replies have been received on the forms sent out, and thanks are due to those Authorities for their kindly assistance. The replies are appended hereto.

I have to thank Dr. John Priestley for a report on "Sewer Ventilating Grids as a Danger to Health," made by him to the Sanitary Committee of Leicester, and Dr. T. Orme Dudfield for his monthly report (No. viii. 1896) on the "Health and Sanitary Condition of Kensington," in which he deals with "Offensive Street Smells." In addition, I have procured a copy of an elaborate report on "The Ventilation of Sewers," presented to the Douglas Town Commissioners by Mr. Thomas H. Nesbitt, their clerk, and published as a supplement to the "Contract Journal," of March 27th, 1895. It deals with replies obtained from 202 Municipal and Local Board engineers and surveyors.

Analysing first the fifty-eight replies received to the letter from the Strand Board, I find that in most instances where there are openings into the sewers, offensive smells are more or less complained of. The answers are qualified in some instances; thus in Clapham the complaints are localised to some few places; in Newington

they arise chiefly in small streets; in Rotherhithe, complaints are very rarely received; and in Lambeth, St. Pancras, and St. George's Hanover Square, occasionally. In St. George's in the East, it is stated that complaints have abated during the last two or three years since boiling water was prevented from entering the sewers. Similar replies are given in respect of extra-metropolitan localities.

No complaints have been received at only two places, viz.: Bristol and Richmond (Surrey). In the former, the sewers are not ventilated ("the house drains are ventilated, but are disconnected from main sewers by syphons") in the latter, a system of extracting and burning the sewer gas "has been in use for several years and perfectly clears the sewers of foul gases."

With regard to the second question, I anticipated that the replies would not be very definite, for it is of course a matter of extreme difficulty to produce convincing proof that illness has been caused by the emanations of air from sewers. Nevertheless, direct injury to health has been traced to street level ventilators in no less than twelve localities, viz.: Battersea, Hampstead, Islington, Kensington, Newington, Stoke Newington, Wandsworth, Westminster, Leicester, Norwich, Sunderland and Walthamstow; and in twenty-five localities, the Medical Officers have grounds for strongly suspecting sewer emanations as a cause of ill-health. The complaints attributed thereto are lowered vitality, general malaise, gastric disturbances with sickness and vomiting unhealthy or ulcerated throats, enteric fever and diphtheria. In seventeen instances no illness has been traceable to sewer ventilators at the road level.

From ventilating columns or shafts on walls, trees, &c., no ill effects were traceable in twenty-four instances where these were used, "except," adds Professor Corfield, "from the ventilators of soil pipes when ending too near to windows or chimneys;" and at Malvern, a badly-placed shaft against a chimney was a source of complaint. The Medical Officer of Stoke Newington states that he has been able to trace cases of ill-health to emanations from shafts, but it is not stated how these were placed, but at Blackpool from defective shafts against houses, several cases of ill-health have arisen and consequently their experience is against the use of shafts in that position. In Marylebone and Paddington no decided answer can be given.

Several authorities speak highly of shafts and columns and substitute them for street level ventilators which are complained of, or erect a shaft in addition to the grid, which thus becomes in many instances an inlet instead of an outlet. In Battersea this appears to be their regular experience. The report states: (b.) "No complaints. The street level ventilators are rendered harmless where shafts are taken up houses." (About 170 shafts have been so erected). In the Douglas report, however, this reversal of action was not always found to follow the use of shafts, although the general concensus of opinion is that it does occur as a rule.

The replies to the question as to desirability of Sanitary Authorities having compulsory powers give a majority in favour of the suggestion. Of Metropolitan Authorities seventeen are in favour, eight against, and four replies are indefinite; of extra Metropolitan Districts, fourteen are in favour, nine against, and four indefinite.

The thirty-one in favour of the suggestion are :-

Battersea.
Bow.
Camberwell.
Chelsea.
Clapham.
Deptford.
Fulham.
Hammersmith.
Islington.
Lee.
Paddington.

Poplar.
St. Giles.
St. Martin-in-the-Fields.
St. Marylebone.
Wandsworth.
Westminster.

Abergavenny.
Belfast.
Brighton.
Bristol.

Croydon.
Dundee.
Eastbourne.
Hull.
Leicester.
Malvern.
Manchester.
Norwich.
Walthamstow.
Willesden.

Most of the affirmative replies are given without comment, but Manchester considers that such power if given should be limited and guarded.

The seventeen replying in the negative are :-

Glasgow. St. James. Hackney. St. Luke. Kingston-on-Thames Lambeth. Portsmouth. Stoke Newington. Rotherhithe. Reading. St. George, Hanover Square Birmingham. Richmond. Blackpool. St. George-the-Martyr, West Bromwich.

With those may be mentioned the indefinite replies; the reason of the answers of some in each of these groups is that no difficulty has arisen in these respective districts in getting permission to erect shafts.

Esher.

The Vestry has never erected shafts without per-Hampstead ... mission; no opinion stated with reference to

compulsion. do. Do. Newington do. Do. Ealing Do. do. Liverpool ...

Doubtful. St. George-in-the-East ... Do. Sunderland Do Wolverhampton ...

Southwark.

Should sewer gas destructors work satisfactorily Shoreditch ... there would be no necessity for erecting ventilating shafts on private property.

Others of the dissentients appear to approve of the erection of shafts against houses, but consider that it should only be with concurrence of owners. A number are doubtless influenced in their replies by a case which was recently heard at Birmingham Assizes, in which the executors of a Mr. Smith sued the King's Norton Rural District Council and obtained judgment for damages to the amount of £3,500 for the loss of Mr. Smith's life from illness ("blood poisoning") alleged to have been produced by a defective sewer ventilating shaft which was carried from the sewer into the flue of a chimney of Mr. Smith's house. It is stated to have been disconnected from the sewer, but this was found to be imperfect. The shaft itself besides being in such a position, is stated to have been defectively constructed with badly fitting joints.

Instances have already been quoted from the replies of evil resulting from badly constructed shafts, or from shafts being badly placed. No danger is alleged in the replies in connection with shafts in proper positions; it must be remembered, however, that if the emanations are harmful at the ground level, it is only minimising and not entirely removing the danger to discharge these emanations 10, 15 or 20 feet above the level of the roadway.

In accordance with the directions of the Committee one of Messrs. Deakin's (Webb's) ventilating lamps has been erected and may be seen at work in Dansey Yard, Macclesfield Street, and a report upon its working will be presented by your Surveyor and myself in due course.

Your obedient Servant,

FRANCIS J. ALLAN.

Name of Town or Sanitary District.	Have you had complaints with reference to sewer ventilators?	influences upon health from emanations from sewer ventilators? (a) At the street level. (b) From shafts.	bo you consider it desirable that Sanitary Authorities should have power to erect ventilating shafts on private property where necessary?	(a) Have you any experience of "Sewer-gas destructors"? (b) Have they proved satisfactory?
Battersea	Yes, many.	(a) Many cases of Enteric Fever and Diphtheria, have been directly traced as the result of children playing over ventilators at the street level. (b) No complaints; the street level ventilators are rendered harmless where shafts are taken up houses, acting then as fresh air inlets.	Yes, decidedly. About 170 ventilating shafts have been taken up the face, or preferably the flanks of houses, with the concurrence of the owners.	No.
Bow	Yes.	(a) No. (b) No.	Yes.	No.
Camberwell	_	_	The Vestry approves of the suggestion.	_
CHELSEA	Very numerous.	The Medical Officer of Health is of opinion that emanations from roadway gratings are very frequently a source of ill-health. But it is impossible to obtain positive proof by exclusion of all other sources.	Yes.	(a) Yes. (b) Doubtful.
CLAPHAM	Frequent complaints from surface gratings in some few places.	(a) No. (b) No.	In some cases, but generally the object can be met by erecting standards in the streets.	(a) Yes. (b) No better than a simple shaft.
Deptford	Yes.	(a) No. (b) —	Yes.	No.
FULHAM	Yes, numerous.	There is evidence here tending to show that the emanations from surface ventilators are injurious to health.	Yes.	(a) Yes, Keeling's. (b) It appeared to answer while in use, but Gas Company discontinued the supply of gas.

HACKNEY	Yes, many complaints, the emanations have been a great nuisance.	(a) No.	No.	No.
HAMMERSMITH .	Yes.	(a) No.	Yes.	No.
Hampstead	Yes.	(a) Cases of Diphtheria have been noted where only apparent cause was effluvia from near proximity of street gully or ventilator. (b) Shafts have been much used in this parish, sometimes with good effects; in other cases they have had to be removed owing to the different levels of houses in this hilly parish.	The Vestry has never erected shafts on private property without consent of owner.	Vestry is about to use Webb's sewer-air destructor
Islington	Yes.	(a) Yes. (b) No.	Yes.	(a) Yes. (b) No.
Kensington	Yes.	Such exhalations constitute an undoubted nuisance, and they are not merely dangerous but injurious to health. (See Monthly Report of Medical Officer of Health).	_	TON DON.
LAMBETH	. Occasionally.	(a) No. (b) No.	Not necessary.	(a) No.
LEE	Yes, many.	(a) Great annoyance is produced, but cannot be positive as to direct injury. (b) No.	Yes.	No.

Name of Town or Sanitary District.	Have you had complaints with reference to sewer ventilators?	Have you been able to trace any deleterious influences upon health from emanations from sewer ventilators? (a) At the street level. (b) from shafts.	Do you consider it desirable that Sanitary Authorities should have power to erect ventilating shafts on private property where necessary	(a) Have you any experience of "Sewer-gas destructors"? (b) Have they proved satisfactory?
Newington	Yes, chiefly in small streets.	(a) In certain small streets the Medical Officer of Health has reported on the danger to health, and shafts have been erected which have removed the nuisance. (b) No.	Owners have never objected to allow Authority to put shafts near flank walls.	The Surveyor of parish has used chambers in which the sewer air is drawn over or through carbolic acid, and thinks highly of it.
Paddington	Yes, many.	(a) and (b) No. But have reason to suspect that such emanations do give rise to sickness, and ill-health.	Yes.	(a) No.
OPLAB	Constantly.	(a) Not directly. (b) No.	Yes, most desirable.	(a) No.
Котневнітне	Very rarely.	(a) No. (b) No.	Yes, if the consent of the owner of the property on which they are to be erected is obtained.	(a) No.
T.George-in-the-East	Not during the last two or three years, since boil- ing water was prevented entering sewer.	Unable to trace any deleterious influence directly to this cause without doubt.	Doubtful.	(a) No.
ST. GEORGE, HANOVER SQUARE	Occasionally.	 (a) Professor Corfield thinks, in a few instances. (b) No, except from the ventilators of soil pipes when ending too near to windows or chimneys. 	Certainly not without the consent of the owners.	(a) No.

ST. GEORGE THE MARTYR, SOUTHWARK	Yes	(a) None have been proved.	The Sanitary Authority is of opinion that ventilators fixed in the centre of a road in the form of a lamp column would be much more preferable than constructed against houses.	(a) No.
St. Giles	Yes.	(a) No. (b) No.	Yes.	(a) No.
St. James	Yes, often.	(a) No.	They would be a great nuisance.	-
St. Luke	Yes, frequent.	(a) No.	No.	Some years ago the principle was tried and proved very satisfactory: A sewer was ventilated into a large chimney shaft and the sewer-gas passed through a furnace erected about 12 feet up the shaft.
ST. MARGARET AND ST. JOHN, WESTMINSTER.	Yes.	(a) Yes, in a few isolated cases. (b) No.	Yes.	No.
ST. MARTIN-IN-THE- FIELDS	Yes.	No, but at the same time sewer-gas must be prejudicial to health.	Yes.	(a) No.
ST. MARYLEBONE	Yes, many.	No very decided cases from either.	Yes.	(a) No.

Name of Town or Sanitary District.	Have you had complaints with reference to sewer ventilators?	Have you been able to trace any deleterious influences upon health from emanations from sewer ventilators? (a) At the street level. (b) From shafts.	Do you consider it desirable that Sanitary Authorities should have power to erect ventilating shafts on private property where necessary?	(a) Have you any experience of "Sewer-gas destructors"? (b) Have they proved satisfactory?
St. Pancras	Occasionally.	(a) Not directly.	_	(a) A little. (b) Yes, as ventilators if properly placed; but as destructors, doubtful.
SHOREDITCH	At times complaints have been numerous.	There are grounds for believing that sewer ventilators at the street level have a deleterious influence upon health.	Should sewer-gas de- structors work satisfactory there would be no necessity for erecting shafts on pri- vate property.	(a) Yes, Webb's. (b) A few have been erected and so far as can be judged they have proved satisfactory.
STOKE NEWINGTGN	Yes, many.	(a) Yes, impaired general health, unhealthy throats, and thus, indirectly, an occasional case of diphtheria. (b) Yes.	No, except by consent of owner and occupier, and subject to their conditions.	(a) Yes. (b) Not altogether.
Wandsworth	Numerous.	(a) Yes, bad throats, sickness and general malaise, diphtheria doubtful. (b) No.	Yes.	No.
ABERGAVENNY	Yes, frequent.	(a) No. (b) No.	Yes.	(a) Yes. (b) Yes, fairly so, but they are costly.
Belfast	Yes.	(a) No.	Yes.	(a) Yes. (b) No.
BIRMINGHAM	Frequently.	No.	No.	(a) Yes. (b) No.

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	CINDINI	CLIC V CLLO	
	DISTRICT,	TOTOTOTO	
	BUTOTATOUT	TONDON	

BLACKPOOL	Yes.	(a) Not decidedly. (b) Yes.	No. Experience of ventilating shafts against houses is against their use.	(a) Yes, Keeling and Worthington's patent. (b) No.
BRIGHTON	Not many.	(a) No. (b) No.	Yes.	(a) No.
Bristol	Sewers in this city are not ventilated.	(a) and (b) Not in use.	If ventilators are used shafts seem to be preferable to street grids, and such powers would be useful to secure the erection of sufficient shafts in suitable places, and at sufficiently frequent intervals.	(a) No.
Croydon	Of course numerous, but much diminished of late years owing to increased flushing and cleansing of sewers and house drains, and general improvement of sewer system and house drains. When sewers and the house drains are well constructed and are kept clean by constant flushing ventilators rarely give cause for complaint.	(a) Yes, occasionally, but not often, and evidence not very definite. (b) No.	Yes.	(a) Yes. (b) No.
DUNDEE	Yes, from untrapped street gullies and from perforated sewer manhole covers.	(a) Not directly. (b) We have no special shafts.	Certainly.	(a) No.

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LEICESTER	Frequently.	 (a) Many complaints of being made ill by street level grids are received, but (b) None from the shafts. 	Certainly.	(a) Two (Deakin's) are in use at a public underground lavatory. (b) Yes, as far as they go.
Liverpool	Complaints have from time to time been made of foul smells from sewer ventilators, but—	the Medical Officer of Health has not been able to satisfy himself that any deleterious influence upon health has resulted therefrom.	The sewers have good fall, are well flushed, and the ventilators appear to be sufficient to effect their purpose without offence.	Sewer-gas destructors are not made use of in Liverpool.
Malvern	Yes.	(a) None. (b) The death of a scarlet fever patient is alleged to have been due to a shaft badly placed against a chimney.	Yes.	(a) Yes, Deakin's patent. (b) Yes.
MANCHESTER	Yes.	(a) No. (b) No.	Yes, but a limited and guarded power.	(a) No.
Norwich	Repeatedly.	(a) Yes. (b) No.	Yes.	(a) No.
PORTSMOUTH	Very frequently.	No proof, but grave suspicions of the street level ventilator.	No.	-

(a) Cases of diphtheria have occurred in roads with sewer ventilators, and no other source has been evident, but the evidence is not definite.

No. Sewers would be better if well flushed periodically and left un-ventilated.

There are no sewer ventilators except in roads not taken over by the Corporation. Complaints arise concerning these.

Kingston-upon-Thames ...

Name of Town or Sanitary District.	Have you had complaints with reference to sewer ventilators?	Have you been able to trace any deleterious influences upon health from emanations from sewer ventilators? (a) At the street level. (b) From shafts.	Do you consider it desirable that Sanitary Authorities should have power to erect ventilating shafts on private property where necessary?	(a) Have you any experience of "Sewer-gas destructors"? (b) Have they proved satisfactory?
Reading	Occasionally.	(a) No. (b) No.	No.	(a) Yes, Keeling's. (b) Yes; they require attention, and it is desirable that when they are used the house drains should be cut off from the sewer by an interceptic trap.
RICHMOND, SURREY	No.	(a) Not absolutely.	No.	(a) Yes, Keeling's, (b) Has been in use here several years and perfectly clears the sewers of foul gases.
Sunderland	Yes, a good many, but many of our sewers are old and probably that is the cause of the emana- tions being very offensive.	(a) The medical practitioners in the town attribute gastric attacks with vomiting, &c., and ulcerated throats to inhaling sewer emanations. It is difficult to say whether they cause or pave the way for typhoid fever. (b) No ventilating shafts in use.	Doubtful. Sewers well laid, well flushed, and with no obstruction at the outfall, seldom give off very offensive emanations.	None.
Walthamstow	Yes, many.	Yes, in several instances where ventilators discharging at the street level have been placed close to schools and dwelling houses.	The Sanitary Committee are in favour of having power to erect as suggested.	(a) Three Keeling's sewer-gas destructors have been in use for several years. (b) We find them of some use. The amount of gas they consume with the attendant cost, is the chief objection.

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West Bromwich	Yes, many.	(a) Enquiry tends to connect throat outbreaks with emanations, but the evidence is not conclusive. (b) No experience.	Not in view of recent law suit (King's Norton).	(a) Yes, Deakin's. (b) Moderately so.
WILLESDEN	Yes.	(a) Not positively. (b) No.	Yes. The Surveyor finds from tests applied that the current of air in the sewers is satisfactory.	(a) Yes, Keeling's. (b) No sufficient experience, as Gas Company discontinued supply for fear of accidents.
Wolverhampton	Yes, a good many.	(a) Not definitely.	Doubtful.	(a) No experience.

Local Government Board. Form A.

TABLE XIII.

SUMMARY OF TABLES and showing DEATHS during the Year 1896 (366 days), in the Metropolitan Sanitary District of STRAND, classified according to DISEASES, AGES, and LOCALITIES.

	M	ORTAL	SUBJO	IOM A	LL CA AGES,	USES,	AT				Mo	BTALL	PY FRO	M sus	JOINE	D CAU	ES, D	ISTING	UISHI	NG DE	ATHS	ог Сп	ILDRE	N UNI	oen F	IVE YEAR	RS OF A	AGE.		
Names of Localities adopted for the purpose of these Statistics; Public		1							1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	12
Institutions being shown as separate localities. (Columns for Population and Births are in Form B.)	(q) At all ages.	100	(p) 1 and under 5.	5 and under 15.				(i)	Smallpox.	Scarlatina.	Diphtheria.	Membranous Croup.	Typhus.	Enteric or Typhoid.	Continued	Relapsing	Poerperal.	Cholera.	Erysipelas.	Measles,	Whooping Cough.	Diarrhoea and Dysentery.	Rheumatic Fever.	Ague.	Phthisis.	Bronchitis, Pneumonia, and Pleurisy.	Heart Disease.	Injuries.	All other Diseases.	TOTAL
STRAND DISTRICT	292	87	46	9	10	101	39	Under 5 5 upwds		1	1	1								26	6	16				22	_ 19	7	53	1
In Hospitals, &c., in District	258	24	29	12	17	153	23	Under 5 5 upwds			2			3			_ 2			3	2	_ 2			4	16	- 37		26 106	2
TOTALS	550	111	75	21	27	254	62	Under 5 5 upwds		1	3	1					- 2		-	29		6	-		4	38	- 56	7	79	1
The	sub	join	ed n	umb	ers	have	e als	so to be t	ake	n in	to a	cco	unt	in ju	ıdgi	ngo	f th	e abo	ove:	reco	rds	of m	orta	lity	٠.					
Deaths occurring outside the district among persons belonging thereto	216	12	11	3	11	106		Under 5 5 upwds		3	_ 	-		- 			-		_ 		1	2 3			42	4 29	20	- 6	13	19
Deaths occurring within the district among persons not belonging thereto	229	15	21	11	16	142		Under 5 5 upwds			2			3			- · i·			2	1				3	 16	36	_ 10	19	

Local Government Board. Form A. TABLE XIIIa.

Table of DEATHS during the Year 1896 (366 days), in the STRAND Sub-District, classified according to Diseases, Ages and Localities.

	M	ORTAI		ROM AL			AT				Mo	RTALE	TY FRO	M SUD	JOINE	D CAUS	ES, DI	STING	UISHIN	to DE	ATHS C	OF CHI	LDRE	N UND	en Fr	VE YEAR	s of A	GE,		
NAMES OF LOCALITIES adopted for the									1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22
purpose of these Statistics; Public Institutions being shown as separate localities. (Columns for Population and Births are in Form B.) (a)	(g) At all ages.			5 and under 15.			(y) 65 and upwards.	(i)	Smallpox,	Scarlatina.	Diphtheria,	Membranous Croup,	Typhus.	Enteric or Typhoid,	Continued	Relapsing.	Puerperal.	Cholera.	Erysipelas.	Meusles,	Whooping Cough.	Diarrhea and Dysentery.	Rheumatic Fever.	Ague.	Phthisis.	Bronchitts, Pneumonia, and Pleurisy.	Heart	Injuries	All other Diseases.	TOTAL.
		-	-		-		-	Under 5	_		-	1	_		_				_	12	1	10	-	_	_	11	-	2	20	57
STRAND SUB-DISTRICT	133	34	23	3	5	54	14	5 upwds									••••		-	-	-		-		16	12	13	10	25	76
STRAND UNION CASUAL WARDS.				-	_			Under 5														-							2	2
BEAR YARD	19	2	-	-	-	11	6	5 upwds														i			-	8	3	-	5	17
King's College Hospital	000	22	29	11	177	114	75	Under 5			2									3	2	-	-	-	4	16	-	-	24	51
ALIMO COMBINA ALOUITHAN II	208	22	29	11	11	114	10	5 upwds						3			2			-	-	1		-	21	17	25	7	81	157
St. Peter's Hospital	11					9	2	Under 5 5 upwds																					- 11	- ii
TOTALS	371	58	52	-	_	188	37	Under 5			2	1		- 3	=		- 2			15	3	10			37	27	41	2 17		110
The	sub	join	ed n	umb	ers	hav	e als	o to be	take	n ir	ito a	icco	unt	inju	ıdgi	ngo	f th	e ab	ove	reco	rds	of m	orta	ality						
Deaths occurring outside the district among persons belonging thereto	141	7	10	2	4	67	51	Under 5 5 upwds		3	-	-	-	-	-	-	-	i	1	-	1	1			28	3	9	- i	62	124
Deaths occurring within the district among persons not belonging thereto	206	15	21	10	16	120	24	Under 5		-	2			-		-	- 1			2	1		-	-	3		26	10		170

Local Government Board. Form A.

TABLE XIIIb.

Table of DEATHS during the Year 1896 (366 days), in the ST. ANNE'S Sub-District, classified according to DISEASES, AGES and LOCALITIES.

Purpose of these Statistics: Public Institutions being shown as separate localities. Public Institutions being shown as separate		M		SUBJO			USES,	AT				Mor	TALIT	Y FRO	M SUB	JOIN EI	CAUS	ES, DI	STING	UISHIN	G DE	ATHS C	F CHI	LDRE	NUND	ER FIV	E YEAR	S OF A	GE.		
Institutions being shown as separate localities. Columns for Population and Births are in Form B.	AMES OF LOCALITIES adopted for the									1	2	3	4	5	6	7	18	9	10	11	12	13	14	15	16	17	18	19	20	21	22
(a.) (b) (c) (d) (e) (f) (g) (h) (i) (g) (g) (h) (i) (g) (g) (h) (i) (g) (g) (g) (g) (g) (g) (g) (g) (g) (g	Institutions being shown as separate localities.	At all ages.	Under 1	1 and under 5.	5 and nder 15,	15 and nder 25.	25 and mder 65.	65 and apwards,		llpox.	atina.	theria	branous roup.	us.		1 4		ral.	era.	ipelas.	les.	oping	boes and entery.	martic ver.		hists.	chitis, monia leurisy.	art	ries.	ther uses.	AL.
St. Anne's Sub-District 159 53 23 6 5 47 25 5 upwds 1 2 - 12 22 6 6 34 88 Hospital for Women, Soho Square 12 12 - 5 upwds Under 5	are in Form B.)	(b)	122						(i)	Smal	Scarl	Diph	Menn	Typh	Enteric	Contin	Relapsi	Puerpe	Chole	Brys	Meas	Who	Diarri	Rheu	Ague	Phtl	Bron Pneu	He	Inju	All or Disea	TOT.
HOSPITAL FOR WOMEN, SOHO SQUARE 12 12 - 5 upwds Under 5 Hospital for Diseases of the Heart, Soho Square 8 1 - 7 - 5 upwds Under 5 - 1 1 14 5 6 11 - 5 33 76	St. Anne's Sub-District	159	53	23	6	5	47	25			1	1		-	-	-					14	5	6	- 2	-	- 12					76 83
Hospital for Diseases of the Heart, Soho Square 8 - 1 - 7 - 5 upwds		12	_	_	_	_	12	_																				1		_ 	- 12
			_	_	1	_	7	_																							8
TOTALS 179 53 23 7 5 66 25	TOTALS	179	53	23	7	5	66	25				1		-	-	-	-				14	5	6		-	- 12					76
	Deaths occurring outside the district among persons belonging thereto	75	6	1	2	7	37	22			- i				- - 1	-				- - 1			1 2	-	-	14	1	_ ii	- 5	5	68
district among persons be-			-						Under 5	_		-	-		-	-	-	-	-	-	-	-	-	-	-	-	-	_	-	1	1
district among persons belonging thereto 75 6 1 2 7 37 22 5 upwds - 1 1 1 2 14 8 11 5 26 68	belonging thereto	23	1	-	2	-	20	-	5 upwds	-	-	-	-	-	-	-	-	-	-	-	1-	-	-	-	-	-	-	10	-	12	22

Local Government Board. Form B.

TABLE XIV.

Table of POPULATION, BIRTHS, AND OF NEW CASES OF INFECTIOUS SICKNESS, coming to the knowledge of the Medical Officer of Health, during the year 1896, (52 weeks) in the Metropolitan Sanitary District of STRAND, classified according to Diseases, Ages, and Localities.

		ATION AGES.			NE	w Cas	ES OF S	OF TE	ess in te Me	EACH	LOCAL	ITY, C	OMING	TO TE	E KN	ow-	NU	BER O	F SUCI	H CASE	S REM	OVED EATME	FROM INT IN	THEIR ISOLA	Home tion I	BIN TI HOSPIT	HE SE	VER
	-	1 .	red s.	10	1	2	3	4	5	6	7	8	9	10	11		1	2	3	4	5	6	17	18	9	10	11	
Names of Localities adopted for the purpose of these Statistics; Public Institutions being	s 1896	dle the same	Registere Births.	ged under or over 5.			2	sn sn		F	EVERS								d	smo		1	FEVER				2	
shown as separate localities.	(q) Census 1896.	Estimated to middle of 1896.	(d)	Agod or o	Smallpox.	Scarlatina	Diphtheria	Membrano Croup.	Typhus.	Enteric or Typhoid.	Continued.	Relapsing.	Puerperal.	Cholera.	Erysipelas	TOTALS.	Smallpox.	Scarlatina	Diphtheri	Membrano Croup.	Typhus.	Enteric or Typhoid.	Jontinued.	Relapsing.	Puerperal.	Cholera.	Erysipelas	OLIMA
(a)	(0)	(c)	(10)	Under 5	_	23	11	_					-	_	1	35		16	7			_	_				-	2
ST. ANNE, SOHO	12,048	12,195	280	5 upwds		42	11								6			34	5			3						4
		-	-	Under 5	_	12	6	1		_				_	_	19	-	9	3	_	_	_	_	_	_	_	-	1
STRAND	11,734	12,478	243	5 upwds		52	5		-	6		-	···i		4	68		37	4			3			1		1	4
VESTMINSTER WORKHOUSE, POLAND STREET	158	_	12	Under 5 5 upwds				,																				
TRAND UNION WORKHOUSE, ED-	774	_	4	Under 5 5 upwds																								
Oo. DO. CASUAL WARDS, BEAR YARD (7 of these births belong to St. Martin-in-the-Fields)			46	Under 5																								
King's College Hospital				Under 5		- i	- 2									- 3		- 	- 2			.,						
				Under 5	-	35	17	1	_	-	-	-	-	-	1	54	-	25	10	-	-	-	-	-	-	-		
TOTALS	24,714	24,673	585	5 upwds	-	95	18	-	-	9		-	1	-	10	133	-	72	11	-	-	6	-	-	1	-	i	1.0

TABLE XV. SUMMARY OF CAUSES OF DEATH.

I.—SPÉCIFIC FEBRILE, OR	Females		Nales.	Females. ch	Males.	Females, 65	Males, 52
I.—SPECIFIC FEBRILE, OR					_	_	Males.
ZYMOTIC DISEASES						_	_
2. Diseases of Circulatory System 40		14	1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1		8 - - 1 1 1 1 - 1 - 3 7 9 2 - - - - - - - - - - - - - - - - - -	3 3 2 3 3 1 1 1 1 1 226	

тн.															00/28
35 to	45	45 t	0 55	55 1	to 65°	65	to 75	75 a	nd up.	St.	Anne.	St	rand.	To	tals.
Males.	Females.	Males.	Females.	Males.	Females.	Males.	Females.	Males.	Females.	Males,	Females.	Males.	Females.	Males.	Females.
		8 - 1 4 1 1			3 - 1					-8 -17 18 6 6 2 2 -2 5 2 -1	-6 2 4 1 1 1 - 3 - 8 5 - 1 - 4 4 - 1 1			18 3 2 1 14 - 52 11 2 7 - 3 10 2 - 10 2 - 10 10 10 10 10 10 10 10 10 10	-9 5 5 1 1 -8 -22 12 -2 1 5 16 -2 2 2
3 4 4 1 1	-4 4 4 2 2 2 2 1 	377992	-4 3 7 2 1 	-4 2 7 3 1 -1 - - -	-3 3 7 1 1	-5 3 6 1 6 -1 - - - - - - - -	-2 3 7 1 2 - - - - - - - -	-4 3 6 1 1 - - - - 9	-4 2 9 - 1 1 10 10	2 8 10 23 6 2 - 2 - - - 8 3 10 3	-5 9 19 77 44 1 — — — — — — — — — — — — — — — — —	2 16 11 39 7 7 - 1 - - 6 6 4 4	1 15 10 24 3 3 -1 	4 24 21 62 13 9 - 3 14 9 14 7	1 20 19 43 10 7 1 1 1 11 11 11 1
	35 to 58 to 8 to 16 to 16 to 16 to 17 to 1	35 to 45 Nation Nation	35 to 45	35 to 45	35 to 45	35 to 45	35 to 45	35 to 45	35 to 45	35 to 45	35 to 45	SUB-DI SUB-DI St. Anne. SUB-DI St. Anne. S	SUB-DISTRI St. Anne. St.	SUB-DISTRICTS SUB-DISTRICTS SUB-DISTRICTS SUB-DISTRICTS STand up. St. Anne. Strand. Strand. Strand. Strand. St. Anne. Strand. Strand. St. Anne. Strand. St. Anne. Strand. Strand.	SUB-DISTRICTS To SUB-DISTRICTS To Signal up St. Anne. Strand. Strand. St. Anne. St. Anne. Strand. St. Anne. St. Anne.



Board of Works for the Strand District.

ANNUAL REPORT

OF THE

PUBLIC ANALYST,

CECIL H. CRIBB, B.Sc. (LOND.), F.I.C.,

For the Year ending 31st March, 1897.



To the Board of Works for the Strand District. Gentlemen,

During the year ending March 31st last, I have analysed 262 samples of various foods and drugs submitted to me under the provisions of the "Sale of Food and Drugs" Acts.

The following Table (I.) shows the nature and number of the samples, and the results of their analysis, while Table IV. to VII. show in detail the nature and extent of the adulterations detected.

TABLE I.

Nature of Sample.	Geniune and of Good Quality.	Adulterated.	Inferior.	Abnormal or containing Antiseptics.	Total.
Yes reporting			office in		
Milk	28	16	6	5	54
Butter	9	1	-	24	34
Cheese	12			_	12
Lard	5	-	_	_	5
Olive Oil	5	-	_	-	5
Coffee	10	_	-	_	10
Mustard	12		_	_	12
Pepper	9	3	_	-	12
Vinegar	12	_	-	_	12
Flour	5	-		-	5
Bread	14	-	-	_	14
Arrowroot	6	_	_	-	6
Sago	6	_	_	-	6
Sausages		_	_	5	5
Tinned Peas	9	_	_	_	9
Tinned Beans	1	_	_	-	1
Tinned Fish	5	_	_		5
Ice Cream	5	_	_	-	5
Gin	13	6	_	-	19
Rum	6	3	_	-	9
Whisky	4	_	_	_	4
Confectionery	7			_	7
Jam	3	-	_	-	3
Honey	3	_	-	_	3
Saffron	3		_	-	3 2
Mercury Oint-	2	-	-	-	2
ment					
TOTAL	204	29	6	34	262

Thus out of 262 samples examined 29 (or 11.06 per cent.) were found to be adulterated, 6 (or 2.2 per cent.) were of inferior quality and 71 (or 27.1 per cent.) had been tampered with in some way, or were of inferior quality or abnormal composition.

The percentage of adulterated samples is somewhat higher than that found last year, viz.:—10·7 but the difference is rather to be traced to the nature of the samples selected for analysis than to any actual increase in the extent to which adulteration is practised in the district.

The following Table II. gives the percentage of adulterated samples found during each of the last four years in the Strand District, and for the year 1895-6 (the most recent for which statistics are obtainable) in the Metropolis and England and Wales.

TABLE II.

		Str	and Distr	ict.		Metro- polis	England and Wales.
	1892–3.	1893-4.	1894–5.	1895-6.	1896-7.	1895-6.	1895-6.
Genuine	68 .	88 7	90.3	89.3	89.0	86.9	90.7
Adulterated	32	11.3	9.7	10.7	11.0	13.1	9.3

The two articles most tampered with are milk and spirits. With one exception, the offences were only of a comparatively trivial nature.

The following table III. shows the extent to which milk was adulterated.

185
TABLE III.

No. of Samples.	Percentage of Extraneous Water	Percentage of Fat Abstracted.	Boracic Acid.
2	4	_	_
4	5	_	_
2	6	_	
1	7	_	_
2	8	_	_
1	9	_	_
1	20	_	_
1		5	-
1	_	7	_
1	_	9	_
2	_	_	Present.

It is satisfactory to observe that the occurrence of boracic acid in milk is becoming much less frequent than formerly. Its place is now largely taken by "Formaline" which only requires to be used in very minute proportions, and for which, in the absence of any evidence that it is poisonous in the quantities likely to be taken by even the largest milk consumers, I have deemed it unnecessary to search.

Four samples of milk must be considered as of abnormal composition, as they contained proportions of fat much beyond what is ordinarily found, but were in other respects with one exception, of decidedly inferior quality. One of these samples contained boracic acid. They were almost certainly the result of bad sampling on the part of the vendor which may have been brought about either by accident or design.

If accidental it is at least curious that fortune should so frequently favour the vendor, as there only are 3 samples deficient in fat against 4 with too much, and in the 4 deficient samples the deficiency in no case exceeded 9 per cent of the minimum amount that should have been present, while in the other samples the fat in excess amounted to a good deal more than 100 per cent of the same minimum.

Of the samples which were neither abnormal nor adulterated only 6 were of inferior quality, the remainder being excellent in every way, thus showing that there is no difficulty whatever in maintaining a standard well above that established by the Society of Public Analysts, and the adoption of any lower limits as has been done by the authorities at Somerset House is only a direct incentive to adulteration.

Of butter only one sample was adulterated, but 24 out of 36 (or 66 per cent.) contained Boracic Acid. Last year 89 per cent. contained this antiseptic; it seems, therefore, to be declining somewhat in popularity, a result much to be desired; as evidence of the decidedly objectionable nature of this substance as an unacknowledged addition to our food is gradually accumulating.

All the samples of sausages examined contained Boracic Acid. Here there is less to be said against its use, but the quantities added were somewhat considerable, and almost suggest that the antiseptic was added less as a preservation than to mask the presence of unsound material.

All the samples of tinned peas but one, contained traces of copper, but in no instance did the proportion exceed '56 grains to the pound—a quantity too small to be considered in any way dangerous to health. While the use of copper to preserve the green colour of peas has been very widely adopted, and is a process which should certainly be stopped, at the same time it is now generally

recognised that peas, beans, spinach, cocoa, and many other common articles of food naturally contain minute quantities of copper, and the presence of this metal must not therefore be too hastily taken as evidence of adulteration.

Of the samples of gin and rum analysed 9 out of 28 proved to have been watered, in every case but one very slightly so, in fact the proportions added would hardly be worthy of mention but for the fact that in the case of spirits a legal limit is fixed, and all spirits as received by the retailer are far above the standard and are as a general rule considerably diluted before being sold.

The 3 samples of pepper reported against contained an excessive quantity of mineral matter the result rather of carelessness in storing than of any deliberate attempt at adulteration.

The remaining samples call for no special mention.

I have the honour to be, Gentlemen,

Your obedient Servant,

CECIL H. CRIBB, B.Sc. (LOND)., F.I.C., Public Analyst.

TABLE IV.
Samples Analysed during the Quarter ending 30th June, 1896.

Description.		No.	Remarks.
Coffee		4	Not adulterated.
Olive oil		3	,, ,,
Ice cream		3 5	" "
Whiskey		3	The samples had the following alcoholic strengths:— No. 39 was 6.6 under proof. ,, 58 ,, 11.7 ,, ,, 62 ,, 7.0 ,,
Milk		12	Three samples contained extraneous water as follows:— No. 49 and 66 contained at least 5 per cent. ,, 65 ,, 8 ,,
Butter		9	None adulterated. 5 samples contained boracic acid.
Cheese		9	None adulterated.
Rum		5	No. 12 was 22·3 under proof. ,, 20 ,, 13·6 ,, ,, 33 ,, 18·5 ,, ,, 63 ,, 12·0 ,, ,, 71 ,, 16·5 ,,
Gin		10	No. 15 was 25·6 under proof. , 17 ,, 26·0 ,, ,19 ,, 32·2 ,, ,25 ,, 32·5 ,, ,32 ,, 26·0 ,, ,34 ,, 29·0 ,, ,53 ,, 29·9 ,, ,56 ,, 24·5 ,, ,57 ,, 32·0 ,, ,70 ,, 23·6 ,,
Saffron		3	Not adulterated.
Mercury Ointment		2	The samples contained respectively:— 48.55 and 49.4 per cent. of Mercury. They contain 48.48 per cent. theoretically.
TOTAL		65	

TABLE V.
Samples Analysed during the Quarter ending 30th September, 1896.

Description.		No.	Remarks.
Milk		12	Four samples contained extraneous water as follows:— No. 76 contained at least 5 per cent. ,, 75 ,, 6 ,, ,, 78 ,, 9 ,, ,, 122 ,, 7 ,, Three samples were of inferior quality. One sample was abnormal, containing an excessive quantity of fat, viz:— 6.65 per cent. Boracic acid was also present.
Butter		13	None adulterated. Nine samples contained boracic acid.
Cheese		3	None adulterated.
Olive oil		2	"
Arrowroot		6	,, ,,
Sago		6	"
Coffee		4	,, ,,
Jam		3	"
Mustard		5	1)))
Pepper		6	Three samples contained excessive quantities of mineral matter, viz:— No. 79 contained 7.02 per cent. ,, 90 ,; 6.89 ,, ,, 94 ,, 6.65 ,, Nos. 90 and 94 both contained traces of wheat flour.
TOTAL		60	

190
TABLE VI.
Samples Analysed during the Quarter ending 31st December, 1896.

Description.	No.	Remarks.
Milk	18	One sample, No. 141 was deficient in fat to the extent of 7 per cent. at least.
		No. 162 contained at least 4 per cent. extra- neous water. No. 197 ,, , , , , , , , ,
		No. 202 ,, ,, 20 ,, ,, Three samples, Nos. 194, 196 and 198 contained excessive quantities of fat, viz.:— 7.88, 7.38 and 7.51 respectively. They were otherwise of very inferior quality.
		One sample (163), was of inferior quality.
		One sample, otherwise unobjectionable, contained boracic acid.
Bread	7	None adulterated.
Flour	5	", ",
Coffee	2	"
Mustard	7	",
Pepper	6	25 25
Vinegar	10	", "
Tinned Peas	6	Two samples contained traces of copper, but the amount was far below that which could be considered as poisonous.
Gin	5	The samples had the following alcoholic strengths:— No. 140 was 35.9 under proof. , 141 , 34.6 , , , , , , 167 , 34.6 , , , , , , , , 170 , 39.0 , , , , , , , , , , , 171 , , 33.2 , , , ,
		Nos. 140 and 170 had therefore been watered to the extent of 1.6 and 6.2 per cent. respectively.
Rum	3	No. 172 was 26·2 under proof. ,, 195 ,, 25·6 ,, ,, 199 ,, 25·4 ,,
		The samples had, therefore, been watered to the extent of 1.6, .8 and .5 per cent.
Whiskey	1	The sample was 17.66 under proof.
Honey	2	Not adulterated.
TOTAL	72	

TABLE VII.

Samples Analysed during the Quarter ending 25th March, 1897.

Description.	No.	Remarks.
Milk	12	Three samples contained extraneous water as follows:— S/219 contained at least 4 per cent. S/230 ,, ,, 6 ,, S/270 ,, 8 ,, Two samples had been deprived of a portion of their fat, viz.:— S/232 of at least 5 per cent. and was otherwise of very inferior quality. S/271 of at least 9 per cent.
Butter	12	S/248 contained at least 63 per cent.
Lard Vinegar	5 2 1 7	of margarine. None adulterated
Honey	1 7	Not adulterated.
Sweets Tinned Peas	3	All the samples contained minute portions of copper, the highest amount found being 5.6 grain per lb. (S/220).
Tinned Beans ,, Fish	1 5	Contained '46 grain per lb. Not adulterated.
Sausages	5	" . "
Gin	4	All the samples were slightly watered as follows:— 8/279 was 35.6 under proof. 8/283 ,, 36.7 ,, ,, 8/211 ,, 35.7 ,, ,, 8/212 ,, 37.7 ,, ,,
Rum Bread	7	The sample was 11.7 under proof. None adulterated.
TOTAL	65	

