[Report 1897] / Medical Officer of Health, Nottingham City.

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CITY OF NOTTINGHAM.

ANNUAL HEALTH REPORT

FOR

1897,

— BY —

PHILIP BOOBBYER, M.B.,

MEDICAL OFFICER OF HEALTH;
MEDICAL SUPERINTENDENT OF ISOLATION HOSPITAL.

Nottingham:

THOMAS FORMAN AND SONS, PRINTERS, SHERWOOD STREET.

CITY OF NOTTINGHAM.

1897-98.

HEALTH COMMITTEE.

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„ SUTTON
„ WHITE

TO THE CHAIRMAN AND MEMBERS OF THE HEALTH COMMITTEE.

GENTLEMEN,—

The following is my eighth Annual Report as Medical Officer of Health for Nottingham, and my first since it acquired the title of a city.

There was a peculiar fitness in the bestowal of this dignity by Her Majesty the Queen upon Nottingham at this juncture, apart altogether from the joyful occasion of Her Majesty's Jubilee, for there can be no doubt that Nottingham has quite recently made, and is still making, more rapid strides in actual and apparent prosperity and importance than almost any other town of its class in the three kingdoms.

A large responsibility rests at all times with the Health Committee of a corporation, but more especially is this the case at a time when their town is undergoing rapid development. It devolves upon them then more particularly to see that the department and work under their control are not left behind upon the path of progress.

By the exercise of forethought and judgment provision can often be made for further developments with infinitely more economy and convenience than by simply living, so to speak, from hand to mouth.

It is quite possible for a Municipal Corporation to interpret the text "take no thought for the morrow" in too absolute a sense. To give only one example:—enormous expenditure and untold trouble are often avoided by securing the early possession of plenty of land in suitable situations for the various purposes of municipal management and government.

Good provision has been and is being made for the future by the Nottingham Municipality in this respect, but there is much other work to be done before the city can be considered as entirely up to date from a sanitary point of view.

The privy and pail system of excrement disposal is perhaps the most notable example of sanitary anachronism on a large scale in the city. This system is entirely out of date, but remains, and must remain indefinitely in use, so far at any rate as a large number of the existing closets are concerned, unless some special action is taken by you to secure its conversion to one of water-carriage.

During the past year the general health of Nottingham would have passed as remarkably good, but for the extraordinary outbreak of summer diarrhœa which affected this city (and most other centres of population throughout the country) from the beginning of July to the end of September.

None of the other zymotic diseases gave rise to any special trouble, and typhoid fever shewed a remarkable falling off after the opening, at the end of August, of a ward block at Bagthorpe Hospital, for the admission of cases of that complaint which the General and Children's Hospitals could not accommodate.

PHILIP BOOBBYER.

TABLE I.

Nottingham. Population, Inhabited Houses, Marriages, Births and Deaths for 1897, and for the 10 years 1887-96.

	Estimated Population.	Inhabited Houses.	† Marriages.	Births.	Deaths.			Deaths in Public Institutions.
					Total at all ages.	Under One Year.	Under Five Years	
1897	232,935	...	1895	6742	4277	1362	1869	587
1896	229,775	...	1749	6758	3987	1136	1709	594
1895	226,659	...	1658	6717	4195	1269	1640	522
1894	223,584	...	1635	6373	3728	1108	1609	547
1893	220,551	...	1638	6612	4061	1145	1569	610
1892	217,550	...	1672	6315	3961	1058	1613	561
1891	214,606	46,612	1615	6344	4162	1078	1646	540
1890	*	45,580	1549	6205	4031	985	1484	430
1889	*	...	1422	6636	3985	1216	1816	410
1888	*	...	1405	6879	3916	1039	1605	430
1887	*	...	1623	7395	4130	1265	1833	432
Average of the *ten* years 1887-96.	*	...	1597	6626	4016	1130	1652	508

* The variations in the number of the population were very great in these years, owing to trade fluctuations. The unoccupied houses ranged from a few hundreds, in some years, up to 6753 at the Census of 1891.

† The returns of Marriages do not include those in Bulwell, Basford, or Wilford.

Population at Census 1881—186,575; at Census of 1891—213,877.

Average number of persons in each house, at Census 1881—4·8; at Census 1891—4·6.

Area of Borough—10,935 acres.

Average number of persons to an acre—19·7.

TABLE II.

Nottingham. Annual Rates for 1897 and the 10 years 1887-96.

	Rate per 1000 of Population.		Per 1000 Births. Deaths under 1 year.	Per 1000 of Total Deaths.		
	Birth Rate.	Death Rate.		Deaths under 1 year.	Deaths under 5 years.	Deaths in Public Institutions.
1897	28·9	18·4	202	318	437	137
1896	29·4	17·5	168	278	418	145
1895	29·7	18·5	189	302	391	139
1894	28·6	16·7	174	336	432	147
1893	30·2	18·4	172	282	386	150
1892	29·4	18·4	167	267	407	141
1891	29 6	19·5	169	259	395	129
1890	29·2	19·0	158	244	368	106
1889	27·9	16·7	182	304	454	117
1888	29·9	17·3	151	264	419	110
1887	31·5	17·6	170	306	444	105
Average of the *ten* years 1887-96.	29·52	17·9	170	284	411	129

TABLE III.

Nottingham.—Deaths Registered from all causes during the year 1897.

NOTE.—The Deaths of Non-Residents occurring in Public Institutions situated in the District are excluded, and the Deaths of Residents occurring in Public Institutions situated beyond the limits of the District are included.

	AGES.												Totals.			
	0 to 1	1 to 5	5 to 15	15 to 25	25 to 35	35 to 45	45 to 55	55 to 65	65 to 75	75 to 85	85 and upwards.	55 to 60	1897	1896	1895	1894
I. Specific Febrile, or Zymotic Diseases ..	501	212	37	20	11	14	15	14	14	7	1	5	846	645	769	630
II. Parasitic Diseases ..	..	..	..	..	1	..	1	..	..	..	..	..	2	2	14	8
III. Dietic Diseases	1	..	..	1	4	4	6	3	..	..	..	2	19	12	24	14
IV. Constitutional Diseases	67	57	34	84	88	97	106	81	64	23	1	40	702	688	747	655
V. Developmental Diseases	172	..	1	..	..	..	..	2	41	93	28	1	337	340	363	348
VI. Local Diseases	350	204	53	70	85	158	200	280	361	171	26	126	1758	1898	1847	1732
VII. Deaths from Violence ..	34	19	13	5	8	13	21	6	9	9	3	3	140	133	127	115
VIII. Deaths from Ill-Defined and Not Specified Causes	237	15	1	1	1	3	3	6	4	2	..	2	273	269	304	226
Totals	1362	507	139	181	198	289	352	392	493	305	59	179	4277	3987	4195	3728
1.—Specific Febrile, or Zymotic Diseases.																
1.—Miasmatic Diseases.																
Small-pox { Vaccinated ..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	1
Small-pox { Unvaccinated ..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	1
Small-pox { No Statement ..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	2
Measles	13	35	1	..	..	..	..	..	..	..	..	..	49	203	1	134
Scarlet Fever	1	21	10	2	..	..	..	..	..	..	..	..	34	27	50	49
Typhus	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Whooping Cough	47	63	7	..	..	..	..	..	..	..	..	..	117	91	33	119
Diphtheria	2	13	5	1	..	..	..	..	..	..	..	..	21	12	11	22
Simple Continued and Ill-defined Fever	..	..	..	..	..	1	..	..	..	..	..	..	1	..	..	..
Enteric or Typhoid Fever ..	..	7	9	11	7	6	4	1	..	..	..	1	45	75	55	61
Influenza	..	..	1	1	1	2	2	4	1	2	..	1	14	17	115	20
Chicken Pox	..	1	..	..	..	..	..	..	..	..	..	..	1	2	3	1
2.—Diarrhœal Diseases.																
Simple Cholera	..	..	..	..	..	..	..	..	..	..	..	..	..	2	..	..
Diarrhœa, Dysentery	426	72	3	..	..	1	3	7	13	5	..	3	530	175	448	152
3.—Malarial Diseases.																
Remittent Fever	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Ague	..	..	..	..	..	..	..	..	..	..	..	..	..	..	1	..
4.—Zoogenous Diseases.																
Cowpox and effects of Vaccination	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Other Diseases (*e.g.* Hydrophobia, Glanders, Splenic Fever) ..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
5.—Venereal Diseases.																
Syphilis	9	..	..	..	..	1	2	..	..	..	..	..	12	15	16	15
Gonorrhœa, Stricture of Urethra	..	..	..	..	..	..	2	1	..	..	..	..	3	..	2	9

	AGES.												Totals.			
	0 to 1	1 to 5	5 to 15	15 to 25	25 to 35	35 to 45	45 to 55	55 to 65	65 to 75	75 to 85	85 and upwards.	55 to 60*	1897	1896	1895	1894
6.—Septic Diseases.																
Erysipelas	3	..	..	..	..	2	1	1	..	..	1	..	8	10	5	8
Pyæmia, Septicæmia	..	..	1	..	..	..	..	..	..	..	..	..	1	8	9	9
Puerperal Fever	..	..	..	5	3	1	1	..	..	..	..	..	10	6	20	27
II.—Parasitic Diseases.																
Thrush, & other Diseases	..	..	..	..	..	..	..	..	..	..	..	..	..	2	14	7
Worms, Hydatids, &c.	..	..	..	..	1	..	..	..	..	..	..	..	1	..	..	1
Actinomycosis	..	..	..	..	..	..	1	..	..	..	..	..	1	..	..	..
III.—Dietic Diseases.																
Want of Breast Milk, Starvation	1	..	..	..	..	..	..	..	..	..	..	..	1	1	7	2
Scurvy	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Chronic Alcoholism	..	..	..	1	4	4	5	2	..	..	..	1	16	7	16	10
Delirium Tremens	..	..	..	..	..	..	1	1	..	..	..	1	2	4	1	2
IV.—Constitutional Diseases.																
Rheumatic Fever, &c.	..	1	6	1	..	2	3	2	1	..	..	2	16	12	5	23
Rheumatism	..	..	..	..	1	..	3	4	2	3	..	1	13	5	7	8
Gout	..	..	..	..	..	..	..	..	..	..	..	..	..	2	1	1
Rickets	15	10	..	..	..	..	..	..	..	..	..	..	25	19	33	24
Cancer, Malignant Disease	..	..	..	1	7	21	41	49	55	16	1	20	191	185	200	167
Tabes Mesenterica	22	9	2	..	..	1	1	..	..	..	..	..	35	25	34	31
Tubercular Meningitis, Hydrocephalus	13	20	12	..	..	..	..	1	..	..	..	..	46	56	55	53
Phthisis	8	9	10	75	70	67	56	21	5	1	..	15	322	344	364	310
Other forms of Tuberculosis, Scrofula	8	8	3	6	7	..	1	1	..	..	..	..	34	10	18	11
Purpura, Hæmorrhagic Diathesis	1	..	1	..	..	..	..	1	..	..	..	1	3	3	5	2
Anæmia, Chlorosis, Leucocythæmia	..	..	..	..	2	1	..	1	..	..	..	..	4	10	9	10
Glycosuria, Diabetes Mellitus	..	..	..	1	1	5	1	1	1	3	..	1	13	17	16	15
V.—Developmental Diseases.																
Premature Birth	145	..	..	..	..	..	..	..	..	..	..	..	145	155	147	153
Atelectasis	10	..	..	..	..	..	..	..	..	..	..	..	10	2	6	4
Congenital Malformations	17	..	1	..	..	..	..	..	..	..	..	..	18	13	24	39
Old Age	..	..	..	..	..	..	..	2	41	93	28	1	164	170	186	152
VI.—Local Diseases.																
I.—Diseases of Nervous System.																
Inflammation of Brain or Membranes	9	23	7	4	4	3	3	1	..	..	..	..	54	62	45	51
Apoplexy, Softening of Brain, Hemiplegia, Brain Paralysis	1	2	1	4	4	12	26	38	69	45	8	16	210	206	220	185
Insanity, General Paralysis of the Insane	..	..	1	1	5	12	9	..	3	..	..	..	31	28	22	15
Epilepsy	..	..	1	4	3	7	3	4	2	1	..	2	25	22	12	18
Convulsions	104	19	..	..	..	..	..	..	..	..	..	..	123	109	102	111
Laryngismus Stridulus (Spasm of Glottis)	4	1	..	..	..	..	..	..	..	..	..	..	5	..	1	1
Disease of Spinal Cord, Paraplegia, Paralysis Agitans	..	1	1	1	1	3	5	8	4	2	..	4	26	14	10	15
Other Diseases of Nervous System	..	..	1	..	1	1	1	1	..	..	..	1	5	6	..	2

	AGES.												Totals.			
	0 to 1	1 to 5	5 to 15	15 to 25	25 to 35	35 to 45	45 to 55	55 to 65	65 to 75	75 to 85	85 and upwards	55 to 60*	1897	1896	1895	1894
2.—Organs of Special Sense.																
(*e.g.*, of Ear, Eye, Nose)	1	1	1	3	..	..	..	1	..	..	..	1	7	4	7	7
3.—Circulatory System.																
Pericarditis	..	..	1	..	..	..	..	..	..	..	..	..	1	4	5	1
Acute Endocarditis	..	..	..	1	1	1	..	..	..	..	..	..	3	3	1	..
Valvular Diseases of Heart ..	..	..	7	7	9	17	14	25	24	4	..	11	107	55	180	126
Other Diseases of Heart	2	2	1	4	7	20	34	64	83	38	5	31	260	264	134	144
Aneurism	..	..	..	..	..	..	..	3	6	1	..	1	10	3	14	4
Embolism, Thrombosis	..	..	..	..	..	1	1	3	1	..	..	2	6	9	23	7
Other Diseases of Blood Vessels	..	..	..	..	..	1	..	1	1	..	..	..	3	8	2	7
4.—Respiratory System.																
Laryngitis	1	3	2	..	..	..	2	1	..	1	..	..	10	8	10	11
Croup	..	4	1	..	..	..	..	..	..	..	..	..	5	12	10	12
Emphysema, Asthma	..	..	..	..	..	..	2	..	1	..	..	..	3	11	18	12
Bronchitis	92	50	3	1	2	8	18	52	84	51	8	22	369	402	467	431
Pneumonia	86	70	9	14	13	16	29	24	18	12	2	9	293	288	238	215
Pleurisy	..	1	..	..	1	2	4	1	1	..	..	..	10	15	13	3
Other Diseases of Respiratory System	..	1	..	..	1	..	..	3	..	..	..	1	5	6	2	..
5.—Digestive System.																
Dentition	7	7	..	..	..	..	..	..	..	..	..	..	14	23	15	21
Sore Throat, Quinsy	1	3	..	..	..	..	..	..	..	..	..	..	4	..	..	1
Diseases of Stomach	20	3	..	3	2	2	5	3	1	1	1	1	41	34	39	33
Enteritis	4	1	2	3	1	..	3	3	..	..	..	1	17	20	15	18
Obstructive Diseases of Intestine	4	3	2	2	1	6	7	3	13	3	..	2	44	23	24	30
Peritonitis	3	2	3	2	2	1	1	1	2	..	..	1	17	19	12	22
Ascites	..	..	..	..	..	..	..	..	1	..	..	..	1	1	1	1
Cirrhosis of Liver	..	..	..	..	1	11	6	10	4	1	..	6	33	41	30	33
Jaundice and other Diseases of Liver	5	1	1	..	..	2	2	4	2	2	..	3	19	22	12	24
Other Diseases of Digestive System	..	1	1	1	..	..	1	1	..	..	..	1	5	5	..	..
Appendicitis	..	..	1	..	..	..	..	..	..	..	..	..	1	..	..	..
6.—Lymphatic System. (*e.g.*, of Lymphatics and of Spleen)	..	1	1	..	2	..	..	..	..	..	..	..	4	..	6	3
7.—Gland-like Organs of Uncertain Use. (*e.g.*, Bronchocele, Addison's Disease)	..	..	..	2	1	1	4	..	..	..	1	..	9	5	4	3
8.—Urinary System.																
Nephritis	1	4	3	1	6	2	8	5	8	1	..	2	39	28	35	37
Bright's Disease, Albuminuria ..	..	..	..	2	1	7	4	12	9	3	..	6	38	48	47	57
Disease of Bladder or of Prostate	..	..	..	..	1	..	..	4	11	2	..	..	18	16	20	9
Other Diseases of the Urinary System	..	..	..	..	1	2	..	1	3	1	..	1	8	1	..	3
Stone in Kidney	..	..	..	..	..	..	..	..	..	..	..	..	..	..	1	..

	AGES.												Totals.			
	0 to 1	1 to 5	5 to 15	15 to 25	25 to 35	35 to 45	45 to 55	55 to 65	65 to 75	75 to 85	85 and upwards	55 to 60*	1897	1896	1895	1894
9.—Reproductive System.																
A. *Organs of Generation.*																
Male Organs	..	..	..	..	..	..	..	..	2	..	..	..	2	4	..	..
Female Organs	..	..	..	1	6	5	4	1	3	..	1	..	21	17	8	13
B. *Of Parturition.*																
Abortion, Miscarriage	..	..	..	..	2	2	..	..	..	..	..	..	4	4	3	3
Puerperal Convulsions	..	..	..	2	1	..	..	..	..	..	..	..	3	2	2	1
Placenta prævia, Flooding	..	..	..	1	1	3	..	..	..	..	..	..	5	5	6	7
Other Accidents of Child Birth	..	..	..	3	3	7	..	..	..	..	..	..	13	14	2	8
10.—Bones and Joints.																
Caries, Necrosis	..	..	1	3	1	..	1	2	4	1	..	1	13	9	20	15
Arthritis, Ostitis, Periostitis	1	..	1	..	..	..	2	..	..	..	..	..	4	6	2	4
Other Diseases of Bones & Joints	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Osteo-malacia	..	..	..	..	..	1	..	..	..	..	..	..	1	1	..	..
11.—Integumentary System.																
Carbuncle, Phlegmon	..	..	..	..	..	1	..	..	1	1	..	..	3	2	4	1
Other Diseases of Integumentary System	4	..	..	..	..	1	1	..	..	..	..	..	6	9	2	6
VII.—Deaths from Violence.																
1.—Accident or Negligence.																
Fractures and Contusions	..	2	5	3	5	1	6	4	4	6	3	3	39	34	43	33
Gunshot Wounds	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Cut, Stab	..	..	..	..	..	..	..	..	..	..	..	..	..	..	3	1
Burn, Scald	..	7	2	..	..	2	1	..	1	..	..	..	13	20	20	13
Poison	1	..	..	..	..	..	2	1	..	1	..	..	5	6	5	7
Drowning	..	5	4	..	..	1	2	1	1	..	..	..	14	6	8	7
Suffocation	32	4	1	..	..	..	..	..	..	..	..	..	37	29	19	22
Otherwise	1	1	1	..	..	..	1	..	..	1	..	..	5	5	3	5
Injuries in process of child birth	..	..	..	..	..	..	..	..	..	..	..	..	..	1	..	..
2.—Homicide.																
Manslaughter	..	..	..	..	..	..	..	..	..	..	..	..	..	..	2	1
Murder	..	..	..	..	..	..	..	..	..	..	..	..	..	2	1	5
3.—Suicide.																
Gunshot Wounds	..	..	..	..	..	1	..	..	..	..	..	..	1	2	1	1
Cut, Stab	..	..	..	1	1	2	2	..	..	..	..	..	6	3	6	4
Poison	..	..	..	1	2	1	5	..	..	..	..	..	9	11	10	4
Drowning	..	..	..	..	..	1	..	..	..	..	..	..	1	1	1	2
Hanging	..	..	..	..	..	3	2	..	3	1	..	..	9	10	4	7
Otherwise	..	..	..	..	..	1	..	..	..	..	..	..	1	1	1	2
4.—Execution.																
Hanging	..	..	..	..	..	..	..	..	..	..	..	..	..	2	..	1
VIII.—Ill-Defined Causes.																
Dropsy	..	..	..	..	..	..	..	..	..	..	..	..	..	..	4	2
Debility, Atrophy, Inanition	222	10	1	1	..	..	..	..	1	..	..	..	235	209	250	176
Mortification	..	..	..	..	..	..	..	..	1	..	..	..	1	1	..	..
Tumour	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Abscess	..	..	..	..	..	..	..	..	..	..	..	..	..	1	..	..
Hæmorrhage	1	..	..	..	..	..	..	..	..	..	..	..	1	1	..	..
Sudden Death (cause not ascertained)	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Causes not specified (Ill-defined)	1	..	..	..	..	..	..	..	..	..	..	..	1	..	..	3
Uncertified	13	5	..	..	1	3	3	6	2	2	..	2	35	56	50	45

SUMMARY OF TABLE III.

	No. of Deaths.			
	1897	1896	1895	1894
I.—Specific Febrile, or Zymotic Diseases.				
1. Miasmatic Diseases	282	429	268	410
2. Diarrhœal „	530	177	448	152
3 Malarial.. „	..	..	1	..
4. Zoogenous „	..	..	..	..
5. Venereal „	15	15	18	24
6. Septic „	19	24	34	44
II.—Parasitic Diseases	2	2	14	8
III.—Dietic Diseases	19	12	24	14
IV.—Constitutional Diseases..	702	688	747	655
V.—Developmental Diseases	337	340	363	348
VI.—Local Diseases—				
1. Diseases of Nervous System	479	447	412	398
2. Diseases of Organs of Special Sense.. ..	7	4	7	7
3. Diseases of Circulatory System	390	346	359	289
4. Diseases of Respiratory System	695	742	758	684
5. Diseases of Digestive System	196	188	148	183
6. Diseases of Lymphatic System	4	..	6	3
7. Diseases of Gland-like Organs of uncertain use	9	5	4	4
8. Diseases of Urinary System	103	93	103	106
9. Diseases of Reproductive System—				
(*a*). Diseases of Organs of Generation ..	23	21	8	13
(*b*). Diseases of Parturition..	25	25	14	19
10. Diseases of Bones and Joints	18	16	22	19
11. Diseases of Integumentary System	9	11	6	7
VII.—Violence—				
1. Accident or Negligence	113	101	101	88
2. Homicide	..	2	3	6
3. Suicide	27	28	23	20
4. Execution	..	2	..	1
VIII.—Ill-Defined and Not Specified Causes. ..	273	269	304	226
TOTAL	4277	3987	4195	3728

TABLE IV.

Nottingham, 1897. Deaths and Death Rates from certain groups of Diseases.

A. All Ages.	Deaths.	Deaths per 1000 of the *population*.	Deaths per 1000 *total Deaths*.
1. Principal Zymotic Diseases	797*	3·42	186
2. Pulmonary Diseases	695	2·98	162
3. Tubercular Diseases	437	1·88	102
B. Infants under 1 year of Age.	Deaths.	Deaths per 1000 *Births*.	Deaths per 1000 *Deaths under 1 year*
4. Wasting Diseases ...	368	54·6	270
5. Convulsive Diseases	120	17·8	88

NOTES.

1. Includes Small-pox, Measles, Scarlet Fever, Diphtheria, Whooping Cough, Typhus, Enteric, and Simple Continued Fevers, and Diarrhœa.
2. Includes all Respiratory Diseases except Phthisis (Consumption).
3. Includes Phthisis, Scrofula, Tuberculosis, and Tabes Mesenterica.
4. Includes Marasmus, Atrophy, Wasting, Debility, Inanition, Premature Birth and Improper Feeding.
5. Includes Infantile Meningitis, Convulsions, and Dentition.

* See page 24.

TABLE V.

Nottingham. Deaths from the Principal Zymotic Diseases in the ten years 1887-96, and in the Year 1897.

Disease.	1887	1888	1889	1890	1891	1892	1893	1894	1895	1896	Ten Years, 1887-96. Annual Average.	Ten Years, 1887-96. Proportion of Deaths to 1000 Deaths.	1897. Deaths.	1897. Proportion of Deaths to 1000 Deaths.
Small-pox	..	12	..	..	..	..	4	4	..	..	2·0	0·50	..	..
Measles	58	115	86	52	110	118	25	134	1	203	90·2	22·46	49	11·45
Scarlet Fever	22	25	32	33	28	43	83	49	50	27	39·2	9·76	34	7 95
Diphtheria	10	34	11	16	21	30	15	22	11	12	18·2	4·53	21	5·15
Whooping Cough	153	81	153	47	121	117	59	119	33	91	97·4	24·25	117	27·35
Fevers. Typhus	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Fevers. Enteric	74	89	66	58	70	36	68	61	55	75	65·2	16·24	45	10 52
Fevers. Simple Continued ..	2	1	2	4	..	..	1	..	..	..	1·0	0·25	1	0·23
Diarrhœa	315	157	263	185	180	158	361	152	444	177	239·2	59·56	530	123 91
Total	634	514	613	395	530	503	616	541	594	585	552·5	137·57	797*	186·34
Total, London	12,684	10,083	9,709	12,279	9,675	11,983	13,223	11,549	11,544	14,100	11,754	138 95	11,525	140 64
Total, England and Wales	64,676	50,684	61,027	59,698	53,221	56,032	73,499	52,771	64.901	66,936	60,344	110 82	67,051	123 84

* See page 24.

Birth-Rate, Death-Rate, Infantile Death-Rate, and Death-Rate from Zymotic Diseases and Phthisis.

I. NOTTINGHAM.

In five yearly periods, 1856—1885, and in single subsequent years.

	Birth-Rate.	Death-Rate.	Infantile Death-Rate.	DEATH-RATE FROM								
				7 Prin. Zymotic Diseases.	Small-Pox.	Measles.	Scarlet Fever.	Diph-theria.	Whooping Cough.	"Fever."	Diarr-hœa.	Phthisis, and other tubercular Diseases.
1856—1860	36·8	27·2	209	5·98	0·21	0·80	1·08	0·13	0·76	1·02	2·00	3·22
1861—1865	34·8	24·9	192	3·83	0·09	0·43	0·98	0·12	0·51	0·78	1 09	3·19
1866—1870	31·3	23·8	200	4·34	0·07	0·44	0·73	0·09	0·51	0·92	1·57	2·78
1871—1875	34·1	24·9	192	4·30	0·79	0·31	0·53	0·02	0·26	0·84	1·53	2·42
1876—1880	34·6	21·7	175	3·00	0·00	0·35	0·62	0·03	0·43	0·34	1·06	1·85
1881—1885	36·6	20·9	174	3·22	0·06	0·41	0·77	0·12	0·46	0·31	1·09	1·99
1886	33·6	18·9	180	2·92	0·01	0·75	0·06	0·04	0·39	0·27	1·41	1·61
1887	31·4	17·6	170	2·55	0·00	0·24	0·10	0·03	0·66	0·32	1·30	1·43
1888	29·9	17·3	151	2·08	0·05	0·50	0·11	0·14	0·34	0·40	0·54	1·42
1889	27·9	16·7	182	2·57	0·00	0·36	0·13	0·04	0·64	0·28	1·10	1·28
1890	29·2	19·0	158	1·86	0·00	0·24	0·15	0·07	0·22	0·29	0·87	1·88
1891	29·8	19·5	169	2·49	0·00	0·51	0·13	0·09	0·56	0·32	0·84	1·69
1892	29·4	18·4	167	2·33	0·00	0·55	0·19	0·13	0·54	0·16	0·73	1·42
1893	30·2	18·4	172	2·62	0·02	0·11	0·37	0·07	0·27	0·31	1·47	1·81
1894	28·6	16·7	174	2·42	0·01	0·60	0·23	0 08	0·53	0·28	0·60	1·80
1895	29·7	18·5	189	2·64	..	0·00	0·23	0·04	0·14	0·24	1·97	2·10
1896	29·4	17·5	168	2·47	..	0·88	0·11	0·06	0·39	0·34	0·69	1·89
1897	28·9	18·4	202	2·81	..	0·21	0·15	0·09	0·49	0·21	1·66	1·88

II. ENGLAND AND WALES.

In five yearly periods, 1858 to 1890, and in single subsequent years.

1858—1860	34·3	22·2	153	4·03	0·22	0·48	0·89	0·37	0·49	0·79	0·78	2·57
1861—1865	35·1	22·6	151	4·22	0·22	0·46	0·98	0·25	0·52	0·92	0·87	2·53
1866—1870	35·3	22·4	159	4·08	0·10	0·43	0·96	0·13	0·55	0·85	1·06	2·45
1871—1875	35·5	22·0	153	3·76	0·41	0·37	0·76	0·12	0·50	0·60	1·00	2·22
1876—1880	35·4	20·8	144	2·94	0·01	0·39	0·68	0·12	0·53	0·38	0·83	2·04
1881—1885	33·4	19·3	139	2·32	0·01	0·41	0·43	0·16	0·46	0·27	0·65	1·82
1886—1890	31·4	18·9	145	2·25	0·01	0·46	0·24	0·17	0·44	0·20	0·66	1·63
1891	31·4	20·2	149	2·70	0·00	0·43	0·17	0·17	0·46	0·16	0·46	1·60
1892	30·5	18·9	148	2·78	0·01	0·46	0·19	0·22	0·45	0·14	0·50	1·47
1893	30·8	19·2	159	3·16	0·05	0·37	0·23	0·31	0·34	0·23	0·95	1·47
1894	29·6	16·6	137	2·25	0·02	0·39	0·16	0·29	0·41	0·16	0·36	1·38
1895	30·3	18·7	161	2·14	0·00	0·38	0·15	0·26	0·32	0·18	0·87	1·40
1896	29·7	17·1	148	2·18	0·02	0·56	0·18	0·29	0·41	0·17	0·55	1·31
1897	29·7	17·4	156	2·15	0·00	0·40	0·14	0·24	0·35	0·16	0·86	

Principal Vital Statistics of the 33 Greater English Towns for 1897 (taken from the Registrar-General's Quarterly Reports and Annual Summary).

(Populations as at Census of 1891, and also estimated to middle of 1897.)

	Census Population, 1891.	Populations estimated to middle of 1897.	Birth Rate.	Recorded Death Rate.	Corrected Death Rate.	Death Rates at Age Periods.			Death Rate from seven chief zymotic diseases.	Percentage of uncertified Deaths.
						Deaths under one year per 1000 Births.	Deaths 1 to 60 years per 1000 living at those ages.	Deaths over 60 years per 1000 living at those ages.		
England & Wales	29,001,018	31,055,355	29 7	17·4	17·4	156	8·8	66·2	2·15	2·0
33 Large Towns	10,188,449	10,992,524	30·7	19·1	20·65	177	10·3	70 3	2·87	1·3
London ..	4,231,431	4,463,169	30·0	18·2	19·38	159	10·0	67 1	2·58	0·6
Liverpool ..	517,951	633,078	35·3	24·4	26·76	200	14·1	79·0	3·83	3·4
Manchester ..	505,343	534,299	33·2	23·1	26·17	195	13·4	84·2	3·81	1·2
Birmingham ..	429,171	505,772	33·3	21·6	23·86	214	11 2	74·3	3·88	3·2
Leeds	367,506	409,472	31·6	19·9	22·03	190	10·4	79·9	2·80	0·6
Sheffield ..	324,243	351,848	34·4	21 2	23·57	198	11·0	82·4	3·49	2·8
Bristol.. ..	221,665	232,242	27·8	17·2	17·97	149	8·8	71·6	1·83	0·9
West Ham ..	217,113	273,682	32·2	15·7	16·89	172	8·1	59·2	2·61	2·7
Bradford ..	216,361	231,260	24·6	17·4	19·97	179	9·4	78·4	2·22	1·2
Nottingham ..	213,877	232,934	28·9	18·8	20·19	206	9·0	69·8	2·81	1·1
Hull	199,991	225,045	33·4	18·6	19·50	181	9·2	67·8	3 25	1·6
Salford ..	198,136	213,190	35·1	23·9	26·88	219	13·6	76 8	5·50	1·8
Newcastle ..	186,345	217,555	31·3	19·1	20·79	178	10·7	72·2	2·09	0 9
Portsmouth ..	159,255	182,585	26·9	16·2	16·57	168	7 9	62 8	2·53	0·4
Leicester ..	142,051	203,599	30·6	17·7	19·17	205	8 4	63·9	3·13	2·4
Oldham ..	131,463	145,845	26·1	19·2	21·97	183	11·3	71·1	2·61	0·2
Sunderland ..	130,921	142,107	34 6	19·7	20·67	165	10·7	74·1	2·56	1·0
Cardiff.. ..	128,849	170,063	31·1	14 9	16·67	151	8·3	56 5	2·19	0·9
Blackburn ..	120,064	131,330	27·7	19·5	21·90	206	10 5	79 3	3·45	2·2
Brighton ..	115,402	121,401	24·7	15 1	15·23	144	7 4	57 2	1·64	0·8
Bolton.. ..	115,002	121,433	32·6	22 0	24·89	186	12 5	85 9	4 02	0·2
Preston ..	107,573	115,103	31·9	24·4	26·78	262	12 4	81·4	5·63	3 2
Croydon ..	106,152	121,171	25·0	13·1	13·62	135	6 1	58 5	1·43	—
Norwich ..	100,964	110,154	30 5	18 8	17·98	194	7 8	66·4	2·21	1·5
Birkenhead ..	99,184	111,249	31·6	18·3	20 07	164	10 1	69 5	2·45	1·1
Huddersfield ..	95,422	101,454	23·4	16 4	19·07	131	9·8	71·0	1·50	2·8
Derby	94,146	103,291	27·1	16·0	17·68	168	7 8	76·2	1·92	—
Swansea ..	92,344	100,309	29·4	15 8	17·28	140	8 7	70 8	1·36	1·2
Burnley ..	90,589	106,122	29 8	19·5	22·41	220	10 5	70 5	3·98	1·5
Gateshead ..	88,588	101,070	35 8	18·3	19·63	172	9 4	68·1	2·33	0·7
Plymouth ..	84,179	97,658	28·5	19·0	18 51	185	9·2	61·2	2·17	0·3
Halifax ..	82,864	95,747	22·5	16·5	18·35	140	9·1	75·2	1·39	2·5
Wolverhampton	82,620	87,287	35·5	22·0	23·07	217	11·5	59·8	4·22	0·6

GENERAL VITAL STATISTICS.

Population.—The estimated population of the city, calculated in the usual way (*i.e.* on the hypothesis that the rate of increase since the last census has been identical with that during the last intercensal period), amounted at the middle of 1897 to 232,933. Should the sexual ratio remain the same as in 1891, this will be made up of 107,527 males and 125,406 females.

The above method of estimating the intercensal growth of population is the one adopted by the Registrar-General, and is found to yield singularly accurate results when applied to the country as a whole. To smaller units of population, however, subject to the disturbing influence of trade-fluctuation and other such causes, it is seldom at all strictly applicable for any definite period at a stretch.

There are now, in the case of Nottingham, and have been for some years, several reasons for thinking that the population is increasing more rapidly during the current than it did in the previous decennium (1881-91).

The total number of houses destroyed in the course of constructing the Great Central Railway and the new parts of the Great Northern Railway within the city, and by other agencies, since the commencement of the new railway works in October of 1894, does not exceed 1,300, whereas the houses erected during 1897 alone numbered 733; so that, without going into any very accurate calculation, it is easy to see that the new growth (which is still rapidly extending) will already have greatly exceeded the part destroyed.

Even with this estimate, Nottingham now ranks as the eighth town of England and Wales in order of greatness of population, West Ham being next above with 273,082, and Bristol next below with 232,242.

Marriages.—There were 1895 marriages during the year in the Nottingham Sub-Districts. Twelve hundred of these were celebrated in churches of the Establishment, and 695 in Nonconformist chapels and elsewhere.

The numbers during successive quarters were as follows:—1st quarter, 335; 2nd, 577; 3rd, 475; 4th, 508.

The annual total is 146 greater than that of 1896 (which itself was the highest on record), and no less than 298 above the annual average of the 10 years 1887–96. This sudden and considerable advance in the number of local marriages is probably due more to increase of the town's prosperity than anything else. It is far too large to be accounted for simply by growth of population.

Births.—There were 6742 births registered in Nottingham during 1897. This number is 16 less than that of 1896, but its smallness does not militate against the assumption of a rapid growth in the local population.

A low birth-rate is one of the signs of the times, and it must be remembered that the greater towns rely quite as much upon immigration, as upon the natural increment (or excess of births over deaths), for the keeping up of their populations.

The birth-rate per 1000 of population was 28·9. There has been only one reliable annual birth-rate lower than this, and that was the rate (28·6) of 1894.

Of the total 6742 births, registered during 1897, 3491 were male, and 3299 female; 215 of the male and 221 of the female were illegitimate. These 436 illegitimate births were equal to 6·5 % of all.

The birth-rate of England and Wales during the year was 29·7, which is identical with that of 1896, but lower than that of any other year recorded, excepting 1894.

The birth-rate of the 33 greater towns taken together, during the year, was 30·7, and that of London 30·0. The rate for the 33 towns is identical with that of last year, but that of London is 0·2

below the 1896 rate, and is again (as last year) the lowest on record. The recorded birth-rates in some of the great towns are so low as almost certainly to indicate some over-estimate of population. Brighton (24·7), Bradford (24·6), Huddersfield (23·4), and Halifax (22·5), have all rates below 25 per 1000.

Deaths.—The deaths registered in Nottingham during 1897, less those occurring in Public Intitutions among persons not belonging to the city, were 4277 in number. These correspond to a rate per annum of 18·4 per 1000 of population.

The Registrar-General, in his Annual Summary for 1897, furnishes his usual list of death-rates in the 33 great towns, corrected, by the application of factors, to indicate what the recorded rates for the year would have been, had the age and sex distribution of the population in each of the towns been identical with that of England and Wales during the same period.

The above recorded death-rate for Nottingham (reduced below that of the Registrar-General by the exclusion of deaths of non-residents registered in the city) rises from 18·4 to 19·78 by the application of the correcting factor.

The death-rates of males and females during the year, estimated on the assumption that the relative proportion of each sex in the local population had remained the same as at the 1891 census, were respectively 19·9 and 16·7. The most recent large figures, available for comparison with these, are those of the Registrar-General for England and Wales during 1896, which shew a rate of 18·1 for males and of 16·1 for females. The Nottingham figures represent 119 male and 100 female deaths out of equal numbers of each sex living during the period, and those of England and Wales 112 and 100 respectively.

Nottingham is bracketed 16th, or midway with Norwich from either end, on the Registrar-General's list of recorded death-rates for the 33 towns. On the list of corrected rates it takes the 19th place from the lowest.

Croydon and Brighton once more boast the lowest death-rates, both recorded and corrected; their corrected rates being only 13·6 and 15·2 respectively.

At the other end of the list come Salford, Preston, and Liverpool, standing in this order from below upwards by magnitude of rates on the recorded list, and inversely by the same measure on that of corrected rates.

The latter rates for these three towns were 26·88 for Salford, 26·78 for Preston, and 26·76 for Liverpool.

The deaths under one year per 1000 births in this city numbered 202, as compared with an annual average of 170 for the preceding 10 years (1887—1896). The excess above the normal was entirely owing to the unusual prevalence and fatality of summer diarrhœa. The corresponding rate in London last year was 159, the average of the rates in the 33 great towns was 177, and the rate for all England and Wales was 8·8.

There was a death-rate of 9·0 per 1000 living among persons aged from 1 to 60 years. In London this rate was 10·0 per 1000, in the 33 great towns taken together 11·3, and in all England and Wales 8·8.

The deaths above 60 years of age were equal to 69·8 per 1000 living over that age. This rate in London was 67·1, in the 33 towns together 70·3, and in England and Wales 66·2.

Registration Sub-Districts.—Before the issue of another Annual Report these will probably be arranged in a more satisfactory manner, but up to the present the old standing anomaly of the mutual intersection of municipal, union, and registration district boundaries remains unaltered. The only registration sub-districts lying wholly within the city are the four known respectively as the N.W., N.E., S.W., and S.E. sub-districts of Nottingham, those of Bulwell, Basford, and Wilford lying partly in the city and partly in the county.

I have once more attempted to arrive at the existing population in these several divisions by ascertaining the number of houses erected during the year within certain typical areas, and then considering the measure of the growth of population thus revealed as applicable to the whole city. This method is open to several palpable objections, but is certainly the best available at the present time. In all probability the populations of the N.W., N.E. and S.W. sub-districts are considerably over-estimated, while those of Bulwell and S.E are under-estimated. The aggregate total of population yielded by this method is somewhat less than that of the Registrar-General, being 231,066 as compared with 232,935, but the discrepancy, so far at least as it affects the statistics of the several divisions, is comparatively insignificant.

The actual numbers of births registered shewed a considerable increase, as compared with those of 1896, in Bulwell, Basford, and S.E., and as marked a decrease in N.W., N.E., S.W., and Wilford.

Births in Registration Sub-Districts. 1897.

District.	Legitimate.		Illegitimate.		Total of each Sex.		Total of both Sexes.
	M.	F.	M.	F.	M.	F.	
Bulwell	293	249	9	12	302	271	573
Basford	366	303	47	49	413	352	765
N.W.	745	703	39	34	784	727	1511
N.E.	706	705	50	58	756	763	1519
S.W.	395	353	24	19	419	372	791
S.E.	723	681	44	46	767	727	1494
Wilford	48	36	2	3	50	39	89
Totals ..	3276	3030	215	221	3491	3251	6742

The birth-rates per 1000 of population (estimated in the manner already explained) in the several sub-districts, were :— Bulwell, 46·3; Basford, 30·8; N.W., 25·4; N.E., 26·5; S.W., 25·5; S.E., 34·1; Wilford, 39·7.

The extraordinary difference between the birth-rates of the several districts of the city, here apparent, is doubtless due in part to erroneous estimate of populations; but this applies only to the rates in the central parts of the town, those of Bulwell and Wilford being practically identical with the rates of the last two census years for these districts (whose populations, moreover, belong for the most part to a class in which—as I have shewn elsewhere—there is not the same tendency to diminished reproduction as there is in others). It is fair also to suppose that the estimated rates are not greatly less than the actual, even in the central districts; for, while their populations have certainly not declined during the year, the actual number of births recorded in three of them has been considerably less during this period than in 1896.

The crude death-rates (per 1000 of population, estimated as above explained) in the sub-districts, were as follows:—Bulwell, 17·8; Basford, 25·2; N.W., 14·4; N.E., 19·1; S.W., 22·7; S.E., 18·8; Wilford, 13·4.

The statistics in the first half of the table accompanying this section (as stated upon the table) are prepared from the weekly returns furnished to me by the District Registrars, without correction, and without proper distribution of deaths in Public Institutions to the districts from which the deceased persons were admitted. Hence it follows that the statistics are subject to correction in various ways, and especially in respect of the latter omission. The death-rate of Basford furnishes the best example of exaggeration from this cause. About two-fifths of the mortality in the Basford sub-district is due to the registration therein of deaths occurring in the temporary Workhouse in Beech Avenue, and in Bagthorpe Isolation Hospital.

The death-rate in the large N.W. district is always low, but a rate of 14·4 probably indicates a somewhat over-estimated population.

The deaths from summer diarrhœa in various parts of the city call for special notice. This disease, here as elsewhere, gave rise to an almost unprecedented mortality during July, August and

September. The death-rates from this cause, per 1000 of the estimated populations per annum in the various sub-districts, were as follows:—Bulwell, 2·02; Basford, 1·29; N.W., 1.78; N.E., 2·71; S.W., 1.71; S.E., 3·45.; Wilford, 3·57.

The aggregate diarrhœa mortality worked out from my returns is much higher than that given by the Registrar-General, but I have reason to think that my figures represent no more than the actual deaths from primary diarrhœa.

Twenty-four out of a total of thirty-four fatal cases of scarlet fever came in equal numbers from Basford, N.E., and S.E. The ten other deaths belonged evenly to Bulwell, N.W., and S.W.

Forty out of forty-nine total deaths from measles occurred in the first three months of the year. The distribution of these deaths was fairly general throughout the city, excepting only the S.W. and Wilford districts. The first had but three deaths, and the latter escaped altogether.

Whooping-cough occasioned 117 deaths, and of these, again, 81, or 69%, occurred in the first quarter of the year. The deaths were very evenly scattered over the middle parts of the city, but Bulwell and Wilford escaped with one each.

The incidence of enteric fever was once more very general throughout Nottingham, but the following are spots upon which it was specially marked:—Poplar (S.E.); Sneinton (S.E.); New Lenton (S.W.); Old Radford (S.W.); New Radford (N.W.).

NOTTINGHAM SUB-DISTRICTS.

Summary of Statistics for 1897.

The total Births and Deaths are made up from the Weekly Returns of the Registrars. The Deaths in detail from the seven principal Zymotic Diseases, and the Notifications, are distributed to the districts in which the cases originated.

	Population.			Births.	Birth-Rate.	Deaths.			Death-Rate.			DEATHS FROM										Notified Cases of			
	Census.		Estim't'd			Total.	Under 1 year.	From 7 prin. Zymotic Diseases.	Total per 1000 of Population.	Under 1 Year per 1000 Births.	From 7 prin. Zymotic dis. pr. 1000 pop.	Small Pox.	Measles.	Scarlet Fever	Diphtheria.	Whooping-Cough.	"Fever."	Diarrhœa.	Influenza.	Cancer.	Phthisis.	Small-Pox.	Scarlet Fever	Diphtheria.	Enteric Fever.
	1881.	1891.	1897.																						
Bulwell ..	8,575	11,400	12,375	573	46·3	220	104	33	17·8	181	2·7	..	4	1	1	1	1	25	..	12	13	..	53	1	34
Basford ..	18,137	22,900	24,856	765	30·8	627	111	69	25·2	145	2·8	..	11	8	3	10	5	32	1	18	31	..	59	5	43
N.W. ..	39,574	54,885	59,575	1511	25·4	859	285	167	14·4	189	2·8	..	8	5	8	29	11	106	2	45	65	..	99	26	102
N.E. ..	53,911	52,749	57,257	1519	26·5	1095	333	208	19·1	219	3·6	..	9	8	2	24	10	155	6	47	91	..	113	17	75
S.W. ..	25,483	28,558	30,991	791	25·5	705	168	81	22·7	212	2·6	..	3	4	2	16	3	53	5	27	44	..	51	9	60
S.E. ..	40,295	40,886	43,772	1494	34·1	824	362	229	18·8	242	5·2	..	14	8	5	36	15	151	..	41	77	..	127	17	107
Wilford ..	597	2,064	2,240	89	39·7	30	15	9	13·4	169	4·0	..	..	..	..	1	..	8	..	1	3	..	15	..	7
The whole City.	186,572	213,877	231,066	6742	29·1	4360	1378	796	18·9	204	3·4	..	49	34	21	117	45	530	14	191	324	..	517	75	428

GENERAL REPORT.

Zymotic Diseases.—According to my returns the deaths primarily due to the seven principal zymotic diseases numbered no less than 797, whereas the Registrar-General makes them only 652. So large a discrepancy at first sight seems to point to some gross error or errors, but the difference of 145 is entirely owing to the fact that I have classed such a number of deaths as due to diarrhœa which the Registrar-General has passed to other headings. So far as the other zymotic diseases are concerned our numbers are practically identical. The larger total gives a zymotic rate of 3·42, the smaller one of 2·81. To this last number I shall adhere when making comparison of Nottingham figures with those of other places, particulars of which are obtained from the Registrar-General's reports (for it is only fair to suppose that similar methods have been adopted in the Registrar-General's office in estimating their diarrhœa mortality to those used for ours); but, as I believe that my own total of diarrhœa mortality is the more nearly correct, I shall still quote it when discussing the local incidence of the disease by itself.

The Registrar-General, in his Annual Summary for 1897, gives the average zymotic death-rate in the 33 greater towns of England and Wales as 2·87 per 1000 for that year. Twelve of these towns on the Registrar-General's list had higher rates than Nottingham. The higher rates ranged from 3·13 in Leicester and 3·25 in Hull, to 5·50 in Salford and 5·63 in Preston.

Zymotic Death Rates.

Average for past Ten Years, and for 1897.

	Nottingham.		London.		33 Towns.	
	10 years. 1887-96.	1897.	10 years. 1887-96.	1897.	10 years. 1887-96.	1897.
Small Pox	0·01	...	0·01	0·00	0·02	0·00
Measles	0·41	0·21	0·64	0·43	0·62	0·55
Scarlet Fever ...	0·18	0·15	0·25	0·18	0·27	0·18
Diphtheria	0·07	0·09	0·45	0·51	0·29	0·31
Whooping Cough ...	0·46	0·49	0·59	0·41	0·55	0·41
Enteric Fever ...	0·31	0·21	0·15	0·13	0·20	0·18
Diarrhœa	0·95	1·66	0.67	0.92	0·84	1·24
Total Zymotic rate	2·39	2·81	2·76	2·58	2·77	2·87

Nottingham. 1897. Temperature, Rainfall, and Seasonal incidence of Zymotic Diseases.

		Thirteen Four-weekly Periods, Ending on													
		Jan. 30	Feb. 27	Mar. 27	April 24	May 22	June 19	July 17	Aug. 14	Sept. 11	Oct. 9	Nov. 6	Dec. 4	Jan. 1	Total.
Mean Temperature		34·5	41·6	43·5	43·6	47·8	56·9	60·7	60·5	55·1	51·5	47·9	44·3	40·4	..
Rainfall in Inches		1·90	3·16	1·67	1·89	0·70	2·90	0·59	1·09	3·57	1·40	0·89	1·77	3·11	24·64
Onsets of ascertained Cases of	Scarlet Fever	34	29	35	41	26	25	33	52	39	42	48	34	50	484
	Diphtheria	3	8	7	11	4	4	5	4	5	5	8	5	3	72
	Enteric Fever	36	38	26	14	15	8	18	36	64	45	43	37	30	410
Recorded Deaths from	Measles	31	4	4	2	2	1	..	1	..	..	1	..	3	49
	Whooping Cough ..	35	22	18	7	8	4	5	2	1	..	1	6	6	115
	Diarrhœa..	1	7	2	10	4	4	12	238	190	26	10	8	5	517

The figures in this table are compiled from the weekly returns, and therefore subject to slight correction.

In almost all cases the greater part of the excess above the normal was due to diarrhœa. In twenty-nine out of the 33 greater towns the death-rates from diarrhœa were higher than the average for the preceding ten years, and in five of them (Birmingham, Hull, Preston, Salford, and Wolverhampton) this rate exceeded 2 per 1000 living.

Small-Pox.—There was no small-pox in Nottingham during 1897, and it caused only 19 deaths in the 100 leading towns of the country (16 of which were in London) during the year, but before the close of the latter an epidemic was commencing in Middlesborough which has since occasioned a very large mortality in that town.

The same lesson is taught in this latter place that has been taught a hundred times before, *viz.*, that small-pox is still the same dread and fatal scourge as ever to those unprotected against it, and that vaccination is an efficient protection if effectively and recently performed.

Up to the time of writing (March) there had been some 650 cases among vaccinated persons in Middlesborough, from the commencement of the epidemic in November, 1897, and the mortality among these had been equal to 8 %, the case mortality steadily rising with the lapse of time since vaccination was performed.

Among the unvaccinated there had been some 120 cases, and the deaths among these amounted to rather more than 45 %. The death-rate here also varied in an accidental way at the various age periods, but shewed no tendency to increase with age until after the lapse of the 45–55 period, when old age may be roughly stated to begin.

Middlesborough is undoubtedly a well-vaccinated town, so far as primary vaccination among its residents is concerned, but it has a large floating population (being the principal port of the surrounding iron district), the condition of which as regards vaccination is unknown, and re-vaccination is certainly not practised to any great extent among its inhabitants.

The recent epidemic at Gloucester taught us, largely, how small-pox may be expected to behave among unvaccinated persons —producing a very high case mortality; the Middlesborough epidemic, how it will act when introduced to a community fairly well protected so far as primary vaccination is concerned, but practically lacking re-vaccination—the case mortality hitherto having been much lower here, though the epidemic is very general.

Vaccination.—The vaccination statistics of Nottingham, for the latest period of 12 months available for this report, are so extremely unsatisfactory as to call for very serious comment.

A study of the column in the accompanying table containing the percentage of children born who have been returned as successfully vaccinated, in recent years and groups of years, will reveal the fact that this figure has fallen from 69·8 % in 1890, by an almost continuous decline, to 18·97 % in 1896–97.

Vaccination in Nottingham Union. Summary of Statistics, 1883–97.

	Births.	Per Centage.			Certified as Insusceptible of Vaccination.	Had Small-Pox.
		Successfully Vaccinated.	Died Unvaccinated.	Not finally accounted for.*		
Average of 5 yrs. 1883–88 ...	6194	74·3	12·4	13·0	10	0
1889	5398	67·3	12·0	12·1	12	0
1890	5084	69·8	11·7	14·0	11	0
1891	5033	67·1	12·0	16·6	8	0
1892	5142	63·8	12·0	16·2	15	0
1893	5193	64·4	13·4	17·7	24	0
1894 1st half year	2632	62·5	12·7	11·2	9	0
1895 do.	2758	43·1	14·2	15·3	11	0
1896 do.	2728	29·4	11·7	16·4	3	0
†1896–97 ...	5313	18·97	15·60	52·88	3	0

* Up to July 31st of the next year.

† June 1896 to July 1897.

The actual meaning of these figures, in terms of death and misery for the community, can unfortunately never be brought home to the foolish and culpably negligent persons responsible for them, except in the grim object lesson of a small-pox epidemic—to many, indeed, not even by this.

By an administrative anomaly (which seems likely to be continued under the Vaccination Bill now before Parliament) it devolves upon the Poor Law Guardians to administer the Vaccination Acts, and upon the Sanitary Authority to make other provision for avoiding or dealing with small-pox. The responsibility, labour, and expense devolving upon the latter authority, as a direct result of the former's neglect, is immense, and in the opinion of impartial people generally, and of almost all experts, the time has arrived when a transfer of the Guardians' functions in this regard should be made to the Sanitary Authority.

It will not be out of place here to draw attention to the principal provisions of the Vaccination Bill above referred to. These are as follows:—

PRINCIPAL PROVISIONS OF VACCINATION BILL OF 1898.

1. **Vaccination within 12 Months after Birth.**—(1) The period within which the parent or other person having the custody of a child shall cause the child to be vaccinated shall be 12 months from the birth of the child, instead of the period of three months mentioned in section XVI. of the Vaccination Act of 1867, and so much of that section as required the child to be taken to a public vaccinator to be vaccinated shall be repealed.

(2) The public vaccinator of the district shall, if the parent or other person having the custody of a child so requires, visit the home of the child for the purpose of vaccinating the child.

(3) If a child is not vaccinated within nine months after its birth, the public vaccinator of the district shall visit the home of the child, and shall offer to vaccinate the child with glycerinated calf lymph.

2. **Provision against Repeated Penalties.**—An order under section XXXI. of the Vaccination Act of 1867, directing that a child be vaccinated, shall not be made on any person who has previously been convicted of non-compliance with a similar order relating to the same child.

3. **Regulations of Local Government Board.**—The Local Government Board shall have the same powers of making rules and regulations with respect to public vaccinators (whether under contracts made before or after the passing of this Act) as they have with respect to vaccination officers, and any rules or regulations made by the Board with respect to vaccination, whether under this or any other Act, shall, while in force, have effect as if enacted by this Act.

I cannot enter here upon a lengthy analysis of the measure, but I may fitly mention one or two points which seem to call for special notice: (1) Humanized lymph is still (apparently) allowed to be used; (2) No mention is made of remuneration, but the special domiciliary visitation and vaccination which are provided for must necessarily call for additional payment; (3) No provision is made for re-vaccination, and yet experience goes ever more and more to shew the essential necessity for it.

Measles.—There was comparatively little to record about measles, so far as Nottingham was concerned, during 1897.

The local epidemic, which caused 203 deaths during 1896, was still in active progress at the close of the year, but had practically exhausted itself before the end of the first quarter of 1897.

The numbers of deaths in successive quarters of 1897 were: first quarter, 40; second, 4; third, 1; fourth, 4. Thirty-one out of the 40 deaths in the first quarter occurred in Basford (10), N.E. (8), and S.E. (13). Schools were closed in each of these districts during the height of the local outbreak, and efforts were made to keep the younger members of infected households at home so long as infection lasted.

In my Annual Report for 1896 I went very fully into the subject of epidemic measles, with special reference to the question as to whether the rigorous preventive measures commonly applied by public authorities to such complaints as small-pox, scarlet fever, diphtheria, and the like, could advantageously be used for measles. I shall here, therefore, content myself with saying that,

although I fully recognize the necessity of treating this complaint as a very dangerous and fatal epidemic disease, I feel that local public opinion is not yet sufficiently educated in the matter to justify the adoption of such measures at the present time in Nottingham.

Deaths from Measles during each of the Four Quarters of 1897, in the Registration Sub-Districts of the City.

District.	First Quarter.	Second Quarter.	Third Quarter.	Fourth Quarter.	Totals.
Bulwell	4	..	..	..	4
Basford	10	1	..	..	11
N.W.	3	1	1	3	8
N.E.	8	1	..	..	9
S.W.	2	..	..	1	3
S.E	13	1	..	..	14
Wilford	..	..	..	..	..
Totals	40	4	1	4	49

As I have before stated, we have no difficulty in securing the co-operation of school authorities in our efforts to follow the spread of the disease and check its extension. And, having obtained a list of infected households from the school registers, we are in almost as good a position for dealing with the infection as if such knowledge had come to us by the ordinary system of compulsory notification.

Whooping-Cough.—This disease, which appears to be most severe and fatal in temperate climates, causes an average mortality in this country but little less than that of measles. Nearly all the deaths are those of infants under five years of age.

During 1897 there were 117 deaths from whooping-cough in Nottingham. Forty-seven of these were in the first year, 63 between the first and fifth, and only 7 between 5 and 15 years. There were no deaths above 15 years of age.

The liability of measles and whooping-cough epidemics to run together was noticeable both in 1896 and 1897, though the measles was slightly antecedent throughout.

Of the 117 total deaths from whooping-cough in this city during 1897, 81 occurred in the first quarter and 16 in the second, as compared with 40 and 4 deaths respectively from measles during the same periods. The deaths from measles during the last quarter of 1896 had numbered 99, and those of whooping-cough 55.

In the section dealing with the sub-districts I have already alluded to the local distribution of this disease. Its incidence was very general, but most marked in the more central parts of the city. Bulwell and Wilford had only 1 death each, but in S.E. the deaths numbered 36, corresponding to a rate per 1000 of 0·82. Both the actual and relative mortality figures in S.E are considerably greater than elsewhere.

Deaths from Whooping-Cough, during each of the Four Quarters of 1897, in the Registration Sub-Districts of the City.

District.	First Quarter.	Second Quarter.	Third Quarter.	Fourth Quarter.	Totals.
Bulwell	..	1	..	..	1
Basford	7	1	..	2	10
N.W.	18	5	5		29
N.E.	17	3	..	4	24
S.W.	11	2	1	2	16
S.E.	27	4	1	4	36
Wilford	1	..	..	..	1
Totals	81	16	7	13	117

According to the Registrar-General's annual summary, the average death-rate from whooping-cough in the 33 great towns during 1897 was 0·41 per 1000, as compared with a rate of 0·55 for the preceding ten years. Nine of these towns had higher

rates than Nottingham during 1897, these higher rates ranging from 0·50 in Bristol to 0·63 in Blackburn. The lower rates ranged from 0·44 in Birmingham and Wolverhampton to 0·09 in Halifax.

There are very few people bold enough to suggest that the full machinery of prevention should be put in motion for whooping-cough; but, when we recollect that it stands third on the list of zymotic diseases (after diarrhœa and measles) by the magnitude of its death-rate, it is painful to reflect that we have hitherto done so little as we have to check its epidemic spread.

The deaths from this disease were at the rate of 550 per million living in the 33 great towns during the ten years 1887-96. Those from diarrhœa and measles were at the rate of 840 and 620 per million, respectively, for the same period.

Scarlet Fever.—In the Hospital Report I shall, as usual, deal in some detail with the cases of this disease treated in hospital, which last year amounted to some 90% of the total number reported in the city during the year. In this place, therefore, I shall give only such information respecting the local outbreak as can be most appropriately furnished under the general heading. It must be borne in mind that all the cases occurring are here dealt with, whereas in the hospital section those only are referred to which were admitted to that institution.

The number of cases notified and verified during the year was 517. These cases occurred in 427 separate households. The deaths numbered 34, and correspond to a rate of 0·15 per 1000 living.

The first thing to be noticed is the decline in the number of cases notified (as compared with those of other recent years). The annual total (517) is the lowest since 1886, when it was 357. The average annual number of cases during the ten years, 1887–96, was 1000—the totals ranging from 615 in 1887 to 1511 in 1893.

Another point of interest is the falling off in the proportion of multiple cases from single houses. The ratio of such cases has fallen one half as compared with the preceding year. I am not

referring at all to so-called return cases, but only to primary cases and others resulting from them in the same households. A falling off in the relative number of secondary cases was to be expected in a declining epidemic, for a diminished intensity of infection must of necessity be associated with the decline, but such marked evidence of a loss of infecting power in so short a period was certainly not to be looked for, if we are to judge by the experience of other years.

The disease was very evenly distributed over all parts of the city during the year, as the accompanying table will shew, but, even as this distribution was, there was necessarily some variation in degree of incidence—N.W. and S.W. for instance suffered least, and Wilford and Bulwell most, in proportion to their populations.

Notifications of Scarlet Fever during the four quarters of 1897, in the Registration Sub-Districts of the City.

District.	First Quarter.	Second Quarter.	Third Quarter.	Fourth Quarter.	Totals.
Bulwell	11	16	19	7	53
Basford	18	16	11	14	59
N.W.	25	24	18	32	99
N.E.	17	22	48	26	113
S.W.	12	8	17	14	51
S.E.	33	13	31	49	127
Wilford	4	2	3	6	15
Total	120	102	147	148	517

The seasonal curve of prevalence was more in accordance with that ordinarily observed in the country as a whole than it has been for some years past. The rate of notification fell almost continuously from the beginning of the year until about the middle of the second quarter, and thence rose slowly, with some fluctuation, till nearly the end of the year.

The cases and deaths had the following distribution in age periods:—0 to 1 year, 9 cases and 1 death; 1–5 years, 152 cases and 21 deaths; 5–15 years, 291 cases and 10 deaths; 15–25 years, 55 cases and 2 deaths; 25–35 years, 9 cases and no deaths; 35–45 years, 1 non-fatal case.

The case-mortality in the 1–5 years age-period is extraordinarily high, being equal to no less than 13·8%. The nearest approach to such a rate of mortality in this period, of which I have any record, occurred in 1893.

Comparatively low as was the death-rate from scarlet fever in Nottingham (0·15), no less than 17 of the great towns had a lower mortality from this disease during 1897. The rates in these towns ranged from 0·4 in Bradford and Preston, and 0·5 in Blackburn, Burnley and Plymouth, to 0·26 in Sheffield, 0·27 in Hull, 0·29 in Salford, 0·32 in Huddersfield, 0·33 in Liverpool, and 0·35 in Leicester. The average rate in the 33 towns was 0·18, and the same rate obtained in London.

Diphtheria.—There was an increase, alike in the number of cases reported and in the deaths registered from this disease, during 1897 as compared with the previous year. The cases notified numbered 75, against 60 (an increase of 25%), and the deaths 21, against 12 (an increase of 75%).

These annual numbers, however, are too small, and the uncertainty of diagnosis (especially in the milder cases) is too great, to admit of any very definite deductions being drawn from them. Four cases which I was asked to see with a view to treatment with anti-diphtheritic serum, during 1897, turned out to be either scarlet fever or follicular tonsillitis uncomplicated by diphtheria, and until bacterial diagnosis is systematically practised there must continue to be a large proportion of doubtful or more than doubtful cases to vitiate the statistics of this disease.

So far as the figures at my disposal enable me to judge, the distribution of the cases in time throughout the year was unusually even. The lowest four-weekly numbers were 3 each in January and December, and the highest 8 each in February and

October, and 11 in April. No less than 7 four-weekly periods had either 4 or 5 total cases. The notified cases were distributed over 73 households. The number of secondary cases in single houses, therefore, was only 2.

Notifications of Diphtheria during each of the four quarters of 1897 in the Registration Sub-Districts of the City.

Districts.	First Quarter.	Second Quarter.	Third Quarter.	Fourth Quarter.	Totals.
Bulwell	..	..	1	..	1
Basford	1	2	1	1	5
N.W.	11	8	1	6	26
N.E.	3	3	5	6	17
S.W.	1	4	2	2	9
S.E.	1	8	3	5	17
Wilford	..	..	..	..	..
Total	17	25	13	20	75

The N.W. and S.E. districts suffered more severely than other parts of the city—no less than 13 out of the total 21 deaths occurred in these two—but Wilford was the only district which escaped altogether. The above-given cases, fatal and otherwise, occurred in age periods as follows:—0 to 1 year, 2 cases and 2 deaths; 1-5 years, 25 cases and 13 deaths; 5-15 years, 21 cases and 5 deaths; 15-25 years, 17 cases and 1 death; 25-35 years, 7 cases and no deaths; 35-45 years, 3 cases and no deaths. The cent. per cent. case mortality under one year is unfortunately not by any means unusual, and the high death-rate in the next period is also (and perhaps more unfortunately still) in accord with common experience; but, as I have said before, the returns of diphtheria cases and deaths—especially when the disease is so little prevalent as at present in Nottingham—are so unreliable as to prevent the drawing of any useful deductions from them.

All cases of true diphtheria admitted to Bagthorpe Hospital, or developing in the scarlet fever wards, are treated as promptly as possible with anti-diphtheritic serum, and, small though our numbers are, our results are such as fully to bear out the favourable verdict so generally pronounced upon this treatment when adopted early in the disease.

During the past year you have authorized the gratuitous distribution of the serum to medical men in attendance upon poor patients suffering from diphtheria, and I am pleased to say that several medical men have availed themselves of the provision.

Enteric Fever.—I am pleased to have to record a marked reduction in the number of notified cases of enteric fever, and a still more marked reduction in the number of fatal cases, for 1897 as compared with the preceding year.

The corrected number of cases (*i.e.* the number arrived at after considerable correction for erroneous diagnosis) was 428 (10% below those of 1896), and the deaths 45 (40% below). Only three times during the past 20 years has the annual number of deaths from enteric fever fallen below 45. In 1879 there were 42 deaths; in 1885, 44; and in 1892, 36. The annual average for the 20 years was 62. The 45 deaths during 1897 correspond to a death-rate per 1000 of population of 0·21.

The cases and deaths in age periods are given in the following table. It will be seen that in six out of the nine groups the case death-rate has been very low.

NOTTINGHAM, 1897.
Enteric Fever. Cases and Deaths in Age Periods.

	0-1 yrs.	1-5 yrs.	5-15 yrs.	15-25 yrs.	25-35 yrs.	35-45 yrs.	45-55 yrs.	55-65 yrs.	65-75 yrs.	Over 75 yrs.
Cases	..	41	136	116	73	38	18	4	1	1?
Deaths	..	7	9	11	7	6	4	1	..	..

It will be interesting here to contrast the relative mortality from typhoid fever in Nottingham and the other great towns during 1897 and 1896. In 1896 there were only three of these

towns with higher death rates from typhoid fever than Nottingham. During 1897 there was one (Bolton) with an equal rate (0·21 per 1000, or 210 per million living), and 12 with higher rates. The 19 lower rates ranged from 0·07 in Croydon and Swansea, and 0·08 in Plymouth, to 0·20 in Leeds, Bristol, and Gateshead; the higher rates, from 0·24 in Portsmouth and Birkenhead, and 0.25 in Hull and Derby, to 0·29 in Blackburn, 0·30 in Preston, and 0·31 in Sheffield and Salford. The typhoid death-rate in London during 1897 was 0·13, and the average rate in the 33 towns, taken together, 0·18 per 1000 of population.

The distribution of the cases in Nottingham during 1897 was very general in the poorer neighbourhood of almost all districts, but, as I have already remarked in the Section dealing with the sub-districts, the following localities suffered most severely:—Poplar (S.E. district), Sneinton (S.E.), New Lenton (S.W.), Old Radford (S.W.), New Radford (N.W.)

Notifications of Enteric Fever during the Four Quarters of 1897, in the Registration Sub-Districts of the City.

Districts.	First Quarter.	Second Quarter.	Third Quarter.	Fourth Quarter.	Totals.
Bulwell	12	7	8	7	34
Basford	17	7	11	8	43
N.W.	35	7	34	26	102
N.E.	25	5	22	23	75
S.W.	7	3	29	21	60
S.E.	22	11	39	35	107
Wilford	1	3	..	3	7
Totals	119	43	143	123	428

The seasonal incidence of the disease was somewhat unusual. The autumnal rise began sharply (and before its usual time) in July, and the largest number of cases recorded in any four-weekly period during the year was 64, in the 4 weeks ending with September 11th. From this point onwards there was a steady

decline to the end of the year. During August, however, I had reported the steady and ominous advance of typhoid fever in almost all parts of the city, and having had also a little later than this an opportunity of seeing, by the experience of Maidstone and other places, how epidemic typhoid fever may be expected to behave when it gets out of hand, you had, very wisely I think, decided to admit to Bagthorpe Hospital all cases requiring isolation which could not obtain admission to the General or Children's Hospitals. As the result of this decision a large number of cases from small houses in poor neighbourhoods were admitted to the Isolation Hospital during the autumn and winter.

I have stated that the number of cases declined from about the middle of September onwards. I now give a table shewing the actual number of cases and deaths recorded in successive four-weekly periods from a little before the middle to the end of the year.

NOTTINGHAM, 1897.

Enteric Fever. Cases and Deaths in Four-Weekly Periods, from May 22nd, 1897, to January 1st, 1898.

	Four-Weekly Periods ending—							
	June 19th	July 17th	Aug. 14th	Sept. 11th	Oct. 9th	Nov. 6th	Dec. 4th	Jan. 1st, '98
Cases	8	18	36	64	45	43	37	30
Deaths	2	2	1	6	5	5	4	4

It is, of course, impossible to prove that the marked decline coincident in point of time with the provision of isolation accommodation was due to such provision; but, when we consider that a like abatement at this season had not occurred previously in our experience here, and that the disease continued to increase in other places while abating with us, we are, I think, driven to the conclusion that this one circumstance (of ample hospital provision), by which alone our case differed materially from that of so many other places in other respects similarly circumstanced, was the cause of our comparative immunity during the latter part of the year.

In my last Annual Report I gave in some detail the distribution of typhoid fever cases among houses furnished with different types of closet, in Nottingham during the ten years 1887-96, dividing the houses into classes according to the type of closet with which they were furnished. I shall repeat here only the summary of the ten years' figures. This was as follows:—

NOTTINGHAM, 1887-96.

Proportional Annual Incidence of Typhoid Fever Cases upon Houses Furnished with Midden Privies, Pail-Closets, and Water-Closets respectively.

Midden-privy houses	...	1 case in 37 houses.
Pail-closet houses ...	...	1 case in 120 houses.
Water-closet houses	...	1 case in 558 houses.

In other words, the proportional annual incidence of the disease upon houses with privies was more than three times as great as that upon houses with pail-closets, and that upon houses with pail-closets more than 4½ times greater than that upon houses with water-closets.

I have now a mass of figures all bearing upon the same subject, though somewhat differently from those already quoted, of which I shall here give a few extracts. These figures not only bear upon the same subject, but they also teach the same lesson, and that with a force too which I certainly did not anticipate when I began their compilation. They not only shew that the risk of contracting typhoid fever is much greater to residents in houses with pail-closets and midden-privies than to those in houses with water-closets, but also that the disease is very much more liable to recur, after it has once arisen, in the former than in the latter class of house.

I will now take sections selected from the history (with regard to the recurrence of typhoid fever) of two comparatively short streets at New Radford, in one of which the houses are almost exclusively furnished with midden-privies, in the other with pail-closets. In each of these streets typhoid cases occurred in sequence as follows, either in houses previously invaded or in others in their near vicinity:

1st Street, with midden-privies.

1895.	1896.	1897.
May (1 case) July (2 cases)	March (1 case) August (2 cases) October (1 case)	January (1 case) July (1 case) September (2 cases)

2nd Street, with pail-closets.

1894.	1895.	1896.	1897.
January (1 case) July (2 cases) November (1 case)	March (1 case) October (2 cases) November (1 case)	August (1 case) November (3 cases)	February (2 cases) September (2 cases)

The following are the numbers of 2nd, 3rd, and 4th cases in single houses, which occurred during 1897, the houses being classed according to the type of closet with which they were furnished :—

NOTTINGHAM, 1897.

2nd cases of enteric fever in single houses, 41.
In pail-closet houses, 37; in privy houses, 4; in water-closet houses, 0

3rd cases of enteric fever in single houses, 11.
In pail-closet houses, 8; in privy houses, 3; in water-closet houses, 0

4th cases of enteric fever in single houses, 4.
All in houses with pail-closets.

The water-closets in the city now constitute between one-fourth and one-fifth of all closets, and they are scattered in all directions among those of the conservancy type. There is practically nothing in situation, therefore, to account for the comparative immunity of houses with water-closets, and yet in such houses there have been annually during 10 years, in proportion to their numbers, only one-fifth of the cases occurring in those with pail-closets, and less than one-fifteenth of the cases in those with midden-privies. During 1897 I have shewn that no secondary

cases occurred in houses with water-closets, although by the relative number of the latter such cases would have been 12 at least, had the incidence been equal upon houses with all types of closets.

It is, I know, not generally thought that the pail-closet can afford a nidus for the growth of typhoid and other like bacilli, but a moment's reflection will shew that the closet pail is essentially only a small privy above ground, and that unless the material of which the pail is made is non-absorbent and chemically cleanable, and unless the spilling and leaking of contents are strictly avoided in scavenging, this type of closet must be capable of playing the same part, in respect of the pollution of air, soil, and general surroundings, as the modern privy, though of course in a minor degree. I may add that our closet pails (for economic reasons) are mainly constructed of wood, and that a certain amount of spilling and leaking are of at least occasional occurrence in every closet.

It may seem that I am overloading the case against the dry-closet system, but I would point out that it is necessary to prove the very grave charge we are bringing against this type of closet, if we are to succeed in educating the popular mind to the point of demanding its entire discontinuance.

Bacteriological investigations have lately gone far towards affording proof to satisfy the most sceptical and conservative mind. Dr. Sidney Martin, of London, and Dr. Robertson, of Sheffield, have shewn (independently) that the typhoid bacillus is capable of living and growing and spreading—apparently without alteration in quality—in soils polluted with organic matter, while failing altogether to retain its vitality in virgin—unpolluted—soils.

In delivering an address upon this subject, on October 21st, 1897, in Birmingham, Sir Richard Thorne, Principal Medical Officer to the Local Government Board, spoke as follows:—

"It will be clear that organic and decaying refuse should be so dealt with as to prevent its contaminating the soil in the neighbourhood either of dwellings or of sources of water supply. I need hardly point out here in detail what are the points to aim

at in securing this end; but I may perhaps usefully approach the matter from the other point of view, and say that the midden-privy, which still prevails in so many of our large midland and northern towns, presents every feature that should studiously be avoided. Generally sunk below the surface of the ground, often open to rainfall, always storing up decomposing excreta and refuse in close proximity to dwellings, it provides almost every condition favourable to the production of nuisance, to the saturation of soil with filth, and to the setting up and maintenance of those very conditions which seem to be essential to the vitality and multiplication of the typhoid bacillus. The fact that with our present knowledge such a structure as the common midden-privy should not only still exist in our midst, but be clung to with a perverted tenacity, is in my opinion the greatest blot which attaches to English sanitary administration at the close of the nineteenth century. Apart from its sanitary aspect, it is a system as degrading and ignoble as it is foul, and I trust the day is not far distant when we shall look back to it as a barbarism of the past."

And with this quotation I shall close what I have to say on the subject.

Tables giving the cases and deaths, in age periods, of the notifiable infectious diseases, the ratio of deaths to cases, and the deaths from the non-notifiable infectious diseases, which have occurred in Nottingham during 1897 and other recent years. Further Notification Tables will be found under the special sections dealing separately with notifiable infectious diseases.

1892.

		0-5 yrs.	5-15 yrs.	15-25 yrs.	25-35 yrs.	35-45 yrs.	45-55 yrs.	55-65 yrs.	65-75 yrs.	Over 75 yrs.	Total.
Scarlet Fever	*Cases*	313	711	108	24	6	1	..	..	..	1163
	Deaths	17	23	3	..	..	..	..	..	..	43
Diphtheria	*Cases*	25	20	11	13	5	1	..	..	1	76
	Deaths	25	3	..	..	1	1	..	..	..	30
Enteric Fever	*Cases*	20	64	58	32	16	10	3	1	1	205
	Deaths	3	7	12	6	5	1	1	..	1	36

1893.

		0-5 yrs.	5-15 yrs.	15-25 yrs.	25-35 yrs.	35-45 yrs.	45-55 yrs.	55-65 yrs.	65-75 yrs.	Over 75 yrs.	Total.
Small Pox	*Cases*	1	3	12	18	9	6	4	..	..	53
	Deaths	1	..	1	1	1	1	..	..	..	5
Scarlet Fever	*Cases*	412	918	145	25	8	2	1	..	..	1511
	Deaths	50	27	3	2	1	..	..	..	..	83
Diphtheria	*Cases*	14	35	13	12	7	..	..	..	..	81
	Deaths	7	7	..	..	1	..	..	..	..	15
Enteric Fever	*Cases*	30	170	146	71	42	23	7	1	..	490
	Deaths	6	12	19	12	8	5	6	..	..	68

1894.

		0-5 yrs.	5-15 yrs.	15-25 yrs.	25-35 yrs.	35-45 yrs.	45-55 yrs.	55-65 yrs.	65-75 yrs.	Over 75 yrs.	Total.
Small Pox	*Cases*	2	8	21	11	13	2	1	..	..	58
	Deaths	1	2	..	..	1	..	..	..	..	4
Scarlet Fever	*Cases*	364	705	67	19	7	2	..	..	..	1164
	Deaths	24	22	1	1	1	..	..	..	..	49
Diphtheria	*Cases*	20	23	6	5	1	..	..	1	..	56
	Deaths	16	4	1	..	..	..	..	1	..	22
Enteric Fever	*Cases*	25	114	101	66	34	10	9	3	1	363
	Deaths	1	11	21	8	10	5	2	3	..	61

1895.

		0-5 yrs.	5-15 yrs.	15-25 yrs.	25-35 yrs.	35-45 yrs.	45-55 yrs.	55-65 yrs.	65-75 yrs.	Over 75 yrs.	Total.
Small Pox	*Cases*	..	1	1	..	1	..	..	..	..	3
	Deaths	..	..	..	..	..	..	..	..	..	..
Scarlet Fever	*Cases*	438	707	76	20	8	1	..	..	..	1250
	Deaths	32	17	1	1	..	..	..	..	..	51
Diphtheria	*Cases*	13	16	12	3	2	..	1	..	..	47
	Deaths	8	3	..	..	..	..	..	..	..	11
Enteric Fever	*Cases*	42	158	124	71	43	17	4	1	1	461
	Deaths	6	6	24	11	4	3	..	..	1	55

1896.

	0-5 yrs.	5-15 yrs.	15-25 yrs.	25-35 yrs.	35-45 yrs.	45-55 yrs.	55-65 yrs.	65-75 yrs.	Over 75 yrs.	Total.
Scarlet Fever *Cases*	225	423	67	10	5	1	..	..	..	731
Deaths	15	10	2	..	..	..	..	..	..	27
Diphtheria *Cases*	22	23	4	3	..	..	1	..	..	53*
Deaths	5	6	1	..	..	..	..	..	..	12
Enteric Fever *Cases*	46	172	115	80	22	13	9	2	..	459*
Deaths	7	19	19	16	7	3	4	..	..	75

* Total number of cases of which particulars as to age are forthcoming.

1897.

	0-1 yrs.	1-5 yrs.	5-15 yrs.	15-25 yrs.	25-35 yrs.	35-45 yrs.	45-55 yrs.	55-65 yrs.	65-75 yrs.	Over 75 yrs.	Total.
Scarlet Fever *Cases*	9	152	291	55	9	1	..	..	..	..	517
Deaths	1	21	10	2	..	..	..	..	..	..	34
Diphtheria *Cases*	2	25	21	17	7	3	..	..	..	..	75
Deaths	2	13	5	1	..	..	..	..	..	..	21
Enteric Fever *Cases*	..	41	136	116	73	38	18	4	1	1	428
Deaths	..	7	9	11	7	6	4	1	..	..	45

Nottingham. Notification Data up to the end of 1897.

	Scarlet Fever. *			Enteric Fever. †			Small Pox.			Diphtheria. ‡			Deaths from Non-Notified Zymotic Diseases.			
	Deaths.	Known cases	Ratio of known cases to Deaths.	Deaths.	Known cases	Ratio.	Deaths.	Known cases	Ratio.	Deaths	Known cases	Ratio.	Measles.	Whooping Cough.	Diarrhœa.	TOTAL.
1878	72	..	..	62	..	..	..	..	..	6	..	..	47	83	197	327
1879	180	..	..	42	..	..	1	..	..	1	..	..	73	68	93	234
1880	134	..	..	58	..	..	..	..	..	6	..	..	265	87	273	625
1881	353	..	..	61	..	..	4	..	..	7	..	..	34	88	202	324
1882	280	1029	3·7	71	68	1·0	51	446	8·7	21	..	..	133	73	225	431
1883	59	428	7·3	73	159	2·2	2	23	11·5	34	125	3·7	14	76	168	258
1884	37	384	10·4	68	218	3·2	..	11	..	39	113	2·9	145	129	377	651
1885	31	390	12·6	44	326	7·4	2	10	5·0	28	85	3·0	112	116	163	391
1886	13	351	27·0	61	317	5·2	2	12	6·0	10	68	6·8	175	90	328	593
1887	22	615	28·0	74	411	5·6	..	2	..	10	50	5·0	58	153	315	526
1888	25	643	25·7	89	426	4·8	12	59	4·9	34	152	4·5	115	81	157	353
1889	32	1047	32·7	66	395	5·9	..	..	..	11	66	6·0	86	153	263	502
1890	33	984	29·8	58	348	6·0	..	..	..	16	64	4·0	52	47	185	284
1891	28	895	31·9	70	396	5·6	..	..	..	21	103	4·9	110	121	180	411
1892	43	1163	27·0	36	205	5·6	..	..	..	30	76	2·5	118	117	158	393
1893	82	1511	18·4	68	490	7·2	5	53	10·6	15	81	5·4	25	59	358	442
1894	51	1164	22·8	62	363	5·8	4	59	15·8	18	56	3·1	134	118	134	386
1895	51	1250	24·5	55	461	8·3	..	3	..	11	47	4·2	1	33	444	478
1896	27	731	27·1	75	478	6·4	..	..	..	12	60	5·0	203	91	175	469
1897	34	517	15·2	45	428	9·5	..	..	..	21	75	3·6	49	117	530	696

* Notification of Small-Pox and Scarlet Fever, from February, 1882.
† Notification of Enteric Fever and Typhus, from June, 1883.
‡ Notification of Diphtheria, from August, 1885.

Diarrhœa.—According to the returns supplied to me, the diarrhœa mortality in this city was higher last year than in any other year of which I have the records. I must here, however, once more explain that I have classed such terms as "gastro-enteritis," "gastro-enteric catarrh," "vomiting and purging," as signifying diarrhœa pure and simple, whereas the Registrar-General does not appear to do so. Hence it follows that the number of deaths recorded by me as due to primary diarrhœa greatly exceed those in the returns of the Registrar-General. Still, in comparing the mortality in Nottingham with that in other towns, particulars of which are furnished by the latter authority alone, I have adopted his figures for Nottingham, on the natural assumption that his practice of eliminating such death-causes as I have named from the diarrhœa column would effect other towns equally with ours, and thus render his figures comparable from my point of view.

The local distribution of the disease was more general than usual. No part of the city was entirely exempt. But the highest mortality was, as usual, observed in the poorer neighbourhoods, on low-lying, damp, and porous ground. Upon neighbourhoods of this class, indeed, in parts of Old and New Radford, the Meadows, Sneinton, and the wide district East of the Mansfield Road and South of Woodboro' Road, fell some ninety per cent. of the total mortality recorded from this cause.

I am debarred by the lack of a good up-to-date map of the city from furnishing a spot map of infectious diseases, and must therefore content myself with such general descriptions of their distribution as these.

The Wilford sub-district stretches, roughly, from Bunbury Street to Clifton Colliery, and from King's Meadow Road southward to the Trent. The diarrhœa death-rate (per 1000 of population per annum) over this small district was no less than 3.57. The S.E. sub-district lies east of a line drawn up Queen's Walk, Sussex Street, and Bridlesmith Gate, and south of another drawn through Barker Gate, Southwell Road, and Long Hedge Lane. The rate in this district was equal to 3·45 per 1000. The

N.E. sub-district is north of the last, and east of Mansfield Road as far north as a line drawn east and west through Alexandra Park. The rate here was equal to 2·71 per 1000. I have already mentioned other particular neighbourhoods which suffered excessively from diarrhœa, but I do not give the rates for the districts to which they belong as the latter comprise as well much inhabited space comparatively free from diarrhœa.

Of the 530 total deaths, 426, or 80·4%, were those of infants under 1 year, and 72, or 13·6%, of those between 1 and 5 years. Of all deaths from this cause, therefore, 94% occurred before the fifth year. The deaths in age-periods, after the end of the fifth year, were as follows:—5-15 years, 3 deaths; 35-45 years, 1 death; 45-55 years, 3 deaths; 55-65 years, 7 deaths; 65-75 years, 13 deaths; over 75 years, 5 deaths.

What I have said above respecting the ultimate causation of enteric fever may be said with slight variations concerning that of diarrhœa. The latter (according to the late Dr. Ballard) is due to an organism which lives and propagates in superficial layers of soil contaminated with organic matter, and thence finds its way into milk and other organic foods, in which it gives rise to an intense chemical poison productive of diarrhœa in susceptible consumers of such food.

Given a damp, porous subsoil, polluted with organic matter, the one essential factor to the production of epidemic diarrhœa is a sustained high temperature of air and soil. According to Dr. Ballard the rise of summer diarrhœa mortality does not occur until the 4ft. earth thermometer has registered about 56° F.

As might be expected from this, it is the hand-fed children of the poor who constitute the vast majority of the victims from summer diarrhœa. The prompt and complete removal of all organic refuse, the paving of yards and other open spaces around dwelling-houses, and the sealing of the areas upon which the houses stand against the access of contamination from the soil, by laying a bed of concrete or other like material over such areas, together with the boiling of milk and other foods before use, are the precautions we should adopt as a matter of course in the light of such knowledge of the cause of diarrhœa.

I give the usual tables shewing the diarrhœa mortality during the weeks of its epidemic prevalence, for 1897 and other recent years, with the temperatures of the 1ft. and 4ft. earth thermometers respectively for the same periods.

1892.

	WEEK ENDING													
	July 21	July 28	Aug. 4	Aug. 11	Aug. 18	Aug. 25	Sept. 1	Sept. 8	Sept. 15	Sept. 22	Sept. 29	Oct. 6	Oct. 13	Oct. 20
Earth Temperature 1 ft. below surface of ground	55·6	57·4	58·0	57·7	59 2	61·5	59·7	55·7	55·8	54·2	54 0	50 0	48 5	47·7
Earth Temperature 4 ft. below surface of ground	56 0	55 8	56 1	56·5	57·1	58·2	58 8	58.1	56·7	56·0	55·2	53·5	51 4	47·5
Deaths from Diarrhœa ..	3	4	5	5	8	10	10	12	13	12	10	10	3	1

1893.

	WEEK ENDING.																
	June 17	June 24	July 1	July 8	July 15	July 22	July 29	Aug. 5	Aug. 12	Aug. 19	Aug. 26	Sept. 2	Sept. 9	Sept. 16	Sept. 23	Sept. 30	Oct. 7
Earth Temperature 1 ft. below surface ..	59 2	67·4	59·7	63·1	62·1	60·7	61·2	61·2	62 5	66·8	63·1	60·2	61·1	56·8	56·0	53·4	51·4
Earth Temperature 4 ft. below surface ..	55·0	56·8	57·4	58 0	59 5	58 7	59·0	59·5	60 0	62·1	62·3	61·2	61·0	59·5	58 6	56·6	55 6
Deaths from Diarrhœa ..	2	9	12	15	31	41	29	11	28	22	18	20	16	14	14	9	3

1894.

	WEEK ENDING																
	July 7	July 14	July 21	July 28	Aug. 4	Aug. 11	Aug. 18	Aug. 25	Sept. 1	Sept. 8	Sept. 15	Sept. 22	Sept. 29	Oct. 6	Oct. 13	Oct. 20	Oct. 27	Nov. 3
Earth Temperature 1 ft. below surface ..	62·3	61·1	59·4	61·1	61·8	60·0	58·8	57·1	57·9	56·0	54·6	55·3	53·8	51·1	53 2	49·8	47·0	48·4
Earth Temperature 4 ft. below surface ..	56·7	58·0	57·9	58 1	59·1	58·9	58·7	57·7	57·4	57 3	56·1	55·7	55·4	53·9	53 4	53·2	51·1	50 2
Deaths from Diarrhœa..	3	3	5	6	13	13	10	16	3	4	5	3	5	8	7	4	2	8

1895.

	WEEK ENDING																	
	July 6	July 13	July 20	July 27	Aug. 3	Aug. 10	Aug. 17	Aug. 24	Aug. 31	Sept. 7	Sept. 14	Sept. 21	Sept. 28	Oct. 5	Oct. 12	Oct. 19	Oct. 26	Nov. 2
Earth Temperature 1 ft. below surface ..	60·6	61·5	60·8	60·5	61·0	60·5	62·0	63·4	60·5	60 8	59·4	57·5	58 0	56·5	51·6	50 0	44·5	43·2
Earth Temperature 4 ft. below surface ..	58 5	58·9	59·0	59·3	59 5	59 5	59·5	60·4	60·3	60·1	60·0	59·1	58·5	58·4	56·7	54·2	52·0	49·0
Deaths from Diarrhœa..	5	9	20	25	27	29	28	27	28	33	24	33	32	15	26	7	8	10

1896.

	WEEK ENDING													
	June 27	July 4	July 11	July 18	July 25	Aug. 1	Aug. 8	Aug. 15	Aug. 22	Aug. 29	Sept. 5	Sept. 12	Sept. 19	Sept. 26
Earth Temperature 1 ft. below surface of ground	60·6	60·6	62·4	63 7	63·0	60·7	59·4	59·5	58 8	57·7	57 4	58·4	57·2	53·2
Earth Temperature 4 ft. below surface of ground	57 8	58 0	58·3	59 7	60·1	59·9	59 8	59·1	59·0	58 7	58·0	57·8	58·1	56·8
Deaths from Diarrhœa	6	4	13	13	20	16	14	12	13	8	2	7	6	2

1897.

	WEEK ENDING												
	July 10	July 17	July 24	July 31	Aug. 7	Aug. 14	Aug. 21	Aug. 28	Sept. 4	Sept. 11	Sept. 18	Sept. 25	Oct. 2
Earth Temperature 1 ft. below surface of ground	59·9	62 7	63 3	63·8	64 9	63·1	61·6	59·2	57·4	53·7	55 0	53·1	53·6
Earth Temperature 4 ft. below surface of ground	57 6	57·8	58 8	59·5	60·3	61·0	60 6	60 0	59 3	57·7	56·7	55·9	55·3
Deaths from Diarrhœa ..	4	5	15	40	88	95	81	57	29	23	12	8	5

It is seldom that we see so forcible an illustration of the truth of Dr. Ballard's contention, respecting the relation of a high subsoil temperature (above some 56° F.) to excessive diarrhœa mortality, as the figures for 1897 afford. The weekly deaths not only mounted steadily with the rise of the deep earth temperature from 56° onwards, but they reached their maximum (95) during the week in which this temperature attained its highest point, and as steadily declined afterwards with its fall. Four hundred and sixty-two out of 530 total deaths (or 87 per cent.) occurred during the 13 weeks comprised between July 3rd and October 2nd, and 361 (or 68 per cent.) during the five weeks ending with August 28th. During the latter four weeks of this period the deep earth temperature was persistently above 60° F.

I have adhered to my usual practice of giving the actual numbers of deaths, instead of rates per 1000 living, from the section headed "Venereal Diseases" up to that entitled "Uncertified Deaths." These sections are simply an amplification of corresponding divisions of Table III. (*ante*), all the figures of which refer to actual numbers and not rates, and in the case of these sections there are no figures for other towns furnished by the Registrar-General with which to make comparison. The rates, therefore, would be of little utility here.

Venereal Diseases.—The number of deaths returned as due to syphilis varies comparatively little year by year. During 1897 they were 12 in number, and they had averaged 19 during the preceding five years. As in the case of many other complaints, these numbers certainly represent only a very small fraction of the actual mortality from this cause. The reason for the suppression of the truth is too obvious to call for explanation. The same remarks apply with equal force to the deaths ascribed to gonorrhœa, which during 1897 were 3 only. The mortality indirectly due to this disease is certainly by no means inconsiderable.

Septic Diseases.—The deaths under this sub-heading are again apparently fewer than usual. Erysipelas caused but 8 deaths, pyæmia 1, and puerperal fever 10. This last wholly preventable malady was credited with only 6 deaths during 1896, but the annual average for the five years prior to the latter had been 23.

Dietic Diseases.—These prolific death-causes are once again represented as answerable for only a small handful of deaths. Want of breast-milk and starvation are credited with but one death, but when we recollect that 530 of the deaths under one year of age were certified as due to diarrhœa, and 222 to debility, atrophy, and inanition, and that most of these were those of hand-fed children, it becomes at once apparent that the mortality more or less directly due to improper feeding is by no means insignificant.

The deaths from acute and chronic alcoholism, again, are here represented as only 18 in number, whereas the amount of sickness and mortality more or less directly due to alcoholic intemperance is one of the scandals of the times, so far at any rate as the United Kingdom is concerned. The initiated can find evidence of this mortality under secondary causes in the tables, but others might imagine that the whole alcoholic mortality was here shown.

In his decennial supplement to the 55th Annnal Report of the Registrar-General, Dr. Tatham writes as follows:—"It requires but little study of the statistics of occupations to convince one that the mortality directly ascribed in the Registers to intemperance forms but an imperfect measure of the mischief accruing from the abuse of alcohol. In certifying the cause of death of inebriates, it is the habit of some medical men to state only the pathological condition of the organ or organs chiefly affected. This is especially noticeable in regard to the deaths of relatively well-to-do persons."

Constitutional Diseases.—There is but little to notice respecting the numbers of deaths attributed to the members of this group of diseases, beyond the fact that they were very much in accord with those of other recent years.

Acute and chronic rheumatism were credited with 29 deaths, against an annual average of 24 for the preceding five years. There were no deaths primarily attributed to gout. Those from rickets numbered 25, as compared with 19 and 33 in the two immediately preceding years.

Cancer and other malignant new growths caused 191 deaths, as compared with 185 and 200 respectively in 1896 and 1895.

The deaths from tubercular diseases are returned as 437 in number. The annual number of such deaths had ranged between 405 and 471 in the preceding five years.

Diabetes was apparently responsible for 13 deaths. The average annual number of deaths from diabetes during the preceding quinquennium had been 17.

Developmental Diseases.—The total number of deaths attributed to this group is once more (as last year) the lowest of which we have any record.

One hundred and forty-five deaths were due to premature birth, against 155 the year before. There were 18 deaths from congenital malformations, the same number as in 1896.

The deaths of which old age was given as the only explanation numbered 164. It is gratifying to note an almost continual shrinkage in the number of deaths so certified, because, as I have often pointed out, there is nearly always some more or less definite malady, as distinguished from simple physiological decline, to account for the death of an aged person.

Local Diseases.—The deaths under this heading were 1958 in number. This is the largest annual number since 1891 (in which year epidemic influenza was a strongly disturbing factor), and exceeds the high total of 1896 (1898) by 60. Much of the apparent increase, however, (after allowance for growth of population) is doubtless due to transference from other headings, but this does not apply to all.

In the first group—that of nervous diseases—we have an advance from 447 in 1896 (itself a large total) to 479 in 1897, and the increase is exclusively found under such suggestive causes as insanity, epilepsy, convulsions, and diseases of the spinal cord. This is probably in some measure at any rate an actual increase.

It will not be amiss at this point to give some figures relating to the number of cases of insanity dealt with at the City Asylum during the past year.

In his Annual Report for 1897 Mr. Evan Powell, the Medical Superintendent of the City Asylum (for the insane), gives the following table, shewing admissions, discharges, and deaths for 1897 :—

	Males.	Females.	Total.
In the Asylum, 1st January, 1897	290	311	601
Admitted during the year ..	82	78	160
Discharged ,, ,, ..	34	61	95
Died ,, ,, ..	33	19	52
Remaining, 1st January, 1898 ..	305	309	614
Average number resident ..	289	311	600
Private Patients resident ..	5	8	13

The deaths attributed to diseases of the circulatory system numbered 390, a total no less than 82 in advance of the last quinquennial average. But this increase is probably one of those due to transference from more general to particular headings.

Diseases of the respiratory system were credited with 695 deaths, a number no less than 59 below the annual average of the preceding five years. The decline is probably due to the absence of influenza in an epidemic form.

Diseases of the digestive system were returned as causing 196 deaths, a number somewhat in advance of the average. It is

conceivable that there should have been a slight actual increase here, through the hot weather of July, August, and September, and the diarrhœa outbreak.

Deaths from diseases of the urinary system amounted to 103, which number is almost exactly in accord with the average.

Diseases of the reproductive system showed a slight apparent advance. The total number of deaths was 48. Women are the greater sufferers under this heading by an overwhelming majority, and as more than half the deaths are connected with cases of child-birth, and thus for the most part preventable, there should be ample room for improvement in the way many such cases are managed. The truth of this becomes the more apparent when we recollect that deaths from puerperal fever are not here included.

Violence.—The deaths from violence were 140 in number, against 133 in 1896, and a five years' average of 131. Those due to accident or negligence numbered 113, as compared with 101 in 1896. There were 27 suicides, against 28 in 1896. There were no homicidal deaths, judicial or otherwise.

Ill-defined Death Causes.—The deaths so classed (including uncertified deaths) numbered 273. They amounted to 269 in 1896, and the annnal average of the preceding five years was 260.

Uncertified Deaths.—There were 35 of these deaths (according to my returns) during the past year. They constitute 0·82% of all deaths in the city, a very low percentage.

The Registrar-General in his Annual Summary, received since my returns were tabulated, makes the uncertified deaths 47, or 1·1% of the total deaths. I can only say that every care has been exercised in the preparation of my own figures, and that I have made systematic inquiry of the District Registrars respecting all doubtful cases.

Inquest Cases.—These numbered 285 during 1897, and amounted to 6·5% of all deaths in the city. The numbers during the two immediately preceding years were 283 and 236 respectively. The corresponding percentage of such cases in the 33 great towns (taken together) was 7·5, and in London 9·3, during 1897. The highest percentage in the individual great towns was 9·7 in Derby, London and Bristol coming next, both with rates above 9.0. The lowest percentage was 3·1 in Preston.

Among the 67 lesser towns there were two with rates above 10%, viz., Exeter (10·9), and Wakefield (11·2), and 6 with rates below 3%, viz., Warrington and Willesden 2·8, Southport 2·6, Leyton 2·3, Keighley 2·2, and Aston Manor 1·8. The average percentage of inquest cases in the 67 lesser towns was 5·8.

Annual Chart of Meteorology, Births, and Deaths in Nottingham (1897). — This chart, as usual, is bound under the cover at the end of this report.

THE CITY ISOLATION HOSPITAL, BAGTHORPE.

I have again for 1897, as for 1896, to report a diminished number of admissions to the hospital, as compared with previous years. The number admitted during 1896 was 660. This was then the smallest number of admissions since the opening of the institution. The total for 1897 is 519, or no less than 141 below this figure. The average annual total of admissions during the 5 years 1892-96 was 1011. Of the 519 cases taken in during 1897, 463 were of scarlet fever (being 90% of all notified cases of that disease), 47 of enteric fever, 7 of diphtheria, and 2 of other incidental diseases. The cases remaining in hospital at the end of 1896 were 114 in number (109 of scarlet fever, 4 of enteric fever, and 1 of another incidental disease), and these must be added to the 519 above-given in order to obtain the total number under treatment during the year.

Total Cases in Hospital during 1897.

	Remaining at end of 1896.	Admitted during 1897.	Recovered.	Died.	AVERAGE RESIDENCE IN DAYS.		Remaining at end of 1897.
					Non-fatal Cases.	Fatal Cases.	
Scarlet Fever	109	463	440	32	70·7	15 5	109
Enteric Fever	4	47	33	7	56·8	22·5	11
Diphtheria	..	7	4	3	24·5	3	..
Other Diseases	1	2	2	1	29	8	..
TOTAL	114	519	479	43	45·25	12·25	111

The number of patients in hospital, or of beds occupied, varied considerably during the year. The highest and lowest numbers in each month of the year were as follows:—

Month.	Beds occupied. High.	Low.	Month.	Beds occupied. High.	Low.
January.....	124 ..	92	July	81 ..	63
February	101 ..	79	August	97 ..	75
March	91 ..	76	September ..	124 ..	93
April	93 ..	83	October	128 ..	102
May	89 ..	69	November ..	115 ..	83
June	75 ..	63	December ..	113 ..	84

The greatest number of patients in hospital on any one day was 128 on October 2nd, and the lowest 63 on June 21st and July 17th. The average daily number for the entire year was 90. The corresponding figure for 1896 was 111; and for 1895, 168.

No less than 463 out of a total of 517 reported cases of scarlet fever (or 90%) were removed to hospital. This proportion of removals has been only once before exceeded, and that was in 1895, when 1162 out of 1250, or 93%, were taken in. The average proportion of total cases annually admitted during the five years 1892-96 was 83%. It is satisfactory, as shewing promptitude upon the part of notifying medical men and ourselves in dealing with cases of this character, to find that nearly 18% of all the cases sent to hospital were admitted on the day of rash, 70% within the first three days after its appearance, and 90% within the first week. One of the first essentials to efficiency in this connection is promptitude of removal.

Nottingham. Numbers of Scarlet Fever cases notified, and removed to Hospital, in 1897 and other recent years respectively.

	Known cases.	Removed to Hospital.	Per cent. isolated.
*1882	1029	—	—
1883	428	—	—
1884	384	—	—
1885	390	47	12
1886	351	51	15
1887	615	275	45
1888	643	318	49
1889	1047	745	71
1890	984	800	81
1891	895	771	86
1892	1163	1025	88
1893	1511	1065	70
1894	1164	934	80
1895	1250	1162	93
1896	731	631	86
1897	517	463	90

* First year of the practice of compulsory notification.

There were 26 deaths, among the 463 scarlet fever cases admitted, either during the year or after its completion. The case-mortality, or proportion of deaths to cases, among these was 5·61%, and, curiously enough, the proportional mortality was the same among the 109 cases remaining at the end of 1896. This

is the highest death-rate among scarlet fever cases treated in hospital which I have yet had to record. The excessive mortality was doubtless due to the increased severity of type distinctly noticeable in the majority of the cases, and especially during the first six months of the year.

A table like the following (of the principal complications of scarlet fever and their proportional case incidence) is always an excellent index of the degree of severity which obtained during any given outbreak of the disease:—

Recorded Complications among Scarlet Fever Cases admitted during 1897.

Complication.	Cases affected.	Proportion of all cases.
Otitis	49 ..	10·6 per cent.
Nephritis	18 ..	3·8 "
Rheumatism	12 ..	2·6 "
Secondary Sore Throat ..	5 ..	1·0 "
Glandular Abscess	8 ..	1·7 "
Post-Aural Abscess	2 ..	0·4 "
Second Attack	4 ..	0·8 "
Broncho-pneumonia	5 ..	1·0 "
Erysipelas	3 ..	0·6 "

It will be seen that otitis (ear inflammation) occurred in a large proportion of cases, which simply means that severe throat infection was unusually prevalent, giving rise to secondary ear trouble. It has frequently been found that complications of this type have a special tendency to cause the subject of them, if discharged before they have cleared up, to infect other susceptible persons. When such complications, therefore, are unduly prevalent, the period of average residence in hospital will be found, as last year, to extend. The average duration of stay in hospital for non-fatal cases was ten weeks—the longest average period on record since the opening of the institution.

Turning to the age and sex distribution of scarlet fever, we find several divergences from the normal, but nothing of a very startling character.

Age and Sex Distribution of Non-fatal and Fatal Cases of Scarlet Fever admitted to Bagthorpe Hospital during 1897.

	MALES.		FEMALES.	
	Cases.	Deaths.	Cases.	Deaths.
Under 1 year	6	–	2	–
Between 1 and 2 years ..	12	3	5	–
„ 2 and 3 „ ..	14	3	16	3
„ 3 and 4 „ ..	18	2	22	2
„ 4 and 5 „ ..	19	–	17	–
„ 5 and 10 „ ..	90	5	103	4
„ 10 and 15 „ ..	40	2	39	1
„ 15 and 20 „ ..	14	–	13	1
„ 20 and 25 „ ..	10	–	13	–
„ 25 and 30 „ ..	1	–	4	–
„ 30 and 35 „ ..	1	–	3	–
„ 35 and 40 „ ..	–	–	1	–
Totals ..	225	15 (6·7%)	238	11 (4·6%)

Total Cases, 463. Total Deaths, 26. Case Mortality, 5·61%.

There were 6 male and 2 female cases (all certainly genuine) under one year of age, but no fatalities. This immunity, which has been the rule with us of late, is unusual.

The cases under five years (63 male and 60 female) constituted only 28 per cent. of all, as compared with a normal 45 per cent. (Whitelegge). Our proportional number at this age period during 1896 was 28·8—almost identical, that is, with this year's. At the 5 to 10 years' period we have 90 male and 103 female cases, together making up 42 per cent. of all, against a normal 40 per cent. Between 10 and 15 years there were 40 male and 39 female cases, which together were equal to 17 per cent. of all, as compared with a normal 11 per cent. at this period.

The numbers of deaths in age periods are too small for anything very definite to be deduced from them, but it may be noticed that the case mortality throughout is lighter among the females than the males. This also accords with common experience. The aggregate mortality among males was equal to 6·7 per cent. of all male cases, that among females to 4·6 per cent. only. The case mortality for both sexes was 5·61 per cent.—the highest yet recorded in our new hospital.

Since the opening of the Bagthorpe Isolation Hospital in 1891, I have regularly kept, and published in successive Annual Reports, a list of all secondary scarlet fever cases occurring within

three weeks of the return home of patients from hospital in the houses to which they returned. Such secondary or return cases do not by any means necessarily derive their infection from those with whose discharge from hospital their own development is associated. Still, many secondary cases do undoubtedly occur in this way, and the inclusion under this head of all secondary cases occurring under these circumstances and within this time limit probably produces a net result of sufficient accuracy for all practical purposes.

Prior to 1896, the proportion of return cases reckoned in this way had never for any full year fallen below 4·5 per cent. During 1896, however, they fell to 2·3 per cent. of all hospital cases. During 1897 there were 14 such cases, equal to 3 per cent. of all admissions for the year. The hospital cases from which these are considered to have derived their infection were ten in numbers, and constitute 2·2 per cent. of all. Unfortunately, two of the return cases proved fatal, giving a case mortality of 28·5 per cent. Severity of type and a high mortality are, unfortunately, the rule among return cases. I have now observed this on so many occasions and for so long a period that I feel no doubt of its general truth.

The hospital cases through whose premature discharge the return cases are supposed to have arisen had all been isolated for far more than the average period. One case had been in hospital for no less than 21 weeks, and the average duration of stay of all was rather more than 12 weeks.

Monthly Incidence of Return Cases of Scarlet Fever, 1897.

January	1	July	0
February	0	August	1
March	0	September	2
April	1	October	0
May	1	November	1
June	1	December	6*

* *Five* of these were associated with *one* infective case, which had been in hospital 104 days.

Perhaps the best work done by the Hospital during the year was that in connection with the isolation of enteric fever cases. At the end of August, in view of the serious way in which the

disease was then spreading in Nottingham and other towns (see pp. 37 & 38), you very wisely, I think, decided to take into Bagthorpe Hospital all urgent cases requiring isolation which could not be admitted to the General and Children's Hospitals. As a result of this decision, 47 cases were taken in between this date and the end of the year. These, with four other emergency cases admitted at intervals during the previous nine months, make up a total of 51 for the year. None of these could have been safely nursed at home. All came from poor and crowded dwellings. One woman was taken from the out-patient room of the General Hospital (there being no bed for her in that institution) in an extremely critical condition.

Of these 51 cases 7 died. The case-mortality, therefore, was 13·7 per cent. The average mortality of both sexes may be taken at about 18 per cent. (males 17 per cent., females 19 per cent.)

Age and Sex of Enteric Fever Cases admitted to Bagthorpe Hospital during 1897.

MALES.

Initials.	Age.	Result.		Initials.	Age.	Result.	
H. H.	4 yrs.	Death		J. L.	20 yrs.	Recovery	20–25 years.
F. P.	6 yrs.	Recovery	5–10 years.	T. G.	20 yrs.	Death	
E. H.	8 yrs.	"		J. M.	21 yrs.	Recovery	
P. B.	8 yrs.	"		T. W.	21 yrs.	"	
H. O.	8 yrs.	"		B. S.	22 yrs.	"	
A. R.	8 yrs.	"		W. G.	22 yrs.	"	
C. N.	9 yrs.	"		A. K.	23 yrs.	"	
F. S.	9 yrs.	"		E. V.	23 yrs.	"	
W. H.	10 yrs.	Death	10–15 yrs.	J. M.	24 yrs.	"	
L. S.	10 yrs.	Recovery		H. V.	24 yrs.	"	
G. C.	11 yrs.	"		J. G.	27 yrs.	"	25–30 yrs.
E. W.	11 yrs.	"					
H. M.	12 yrs.	"		D. B.	32 yrs.	"	30–35 yrs.
J. W.	12 yrs.	"		W. B.	32 yrs.	"	
J. H.	17 yrs.	"	15–20 yrs.	F. S.	34 yrs.	"	
T. H.	17 yrs.	"		T. C.	34 yrs.	"	
				J. N.	36 yrs.	"	35–50 yrs.
				W. N.	44 yrs.	"	
				S. S.	49 yrs.	"	

FEMALES.

Initials.	Age.	Result.		Initials.	Age.	Result.	
N. W.	3 yrs.	Death	5–10 yrs.	M. R.	20 yrs.	Death	20–25 yrs.
L. H.	5 yrs.	Recovery		F. L.	20 yrs.	Recovery	
S. A.	9 yrs.	Death		M. T.	24 yrs.	"	
G. B.	11 yrs.	Recovery	10–15 yrs.	E. G.	26 yrs.	"	25–50 yrs.
K. L.	12 yrs.	"		E. B.	33 yrs.	"	
M. C.	15 yrs.	"	15–20 yrs.	E. S.	47 yrs.	Death	
E. W.	18 yrs.	"					

34 Male cases. 3 deaths. *Case Mortality*, 7 per cent.
13 Female cases. 4 deaths. *Case Mortality*, 30·8 per cent.

There is little to be said of the 7 diphtheria cases. Emergency cases of this disease are now regularly admitted to Bagthorpe Hospital, because the authorities at the General Hospital have decided to exclude diphtheria altogether from that institution. Fortunately for the city, this disease gives rise to very little trouble in our neighbourhood at the present time, but, given a further extension of it, special provision would certainly have to be made for its isolation.

All 7 cases taken in during 1897 were of typical diphtheria. Two were moribund on admission, and died within 3 hours of being put to bed. They would not have been moved at all had we seen them before removal. The other 4 cases were admitted in an early stage of the disease, and promptly treated with anti-diphtheritic serum. They made good recoveries, assisted to a marked extent by this treatment.

According to the City Accountant, the entire cost of the Hospital for the year ending March 31st, 1898, was £4433. This is £89 less than the total for 1896-97, and the lowest since the opening. It would have been much less also even than this, but for the necessity of painting the buildings within and without, which fell upon this year.

Before giving other financial statistics for the Hospital, I must explain that the Accountant's year ends with March 31st, 1898, whereas this report properly deals only with 1897. Still, in using his figures for the year ending in March, with mine for a period closing 3 months earlier, I am simply substituting one spring for another, and the net result is practically the same as it would be if I made the somewhat laborious correction which would be necessary to render them exactly conformable.

The average daily number of occupied beds throughout the year was 90 (as compared with 111 during 1896). The average cost per occupied bed was therefore £49 5s. 1d. The average cost per patient was £8 10s. 10d.

Both these amounts are larger than those of any other year since the opening of the institution, and the increase is explained (*a*) by the admission of a large number of typhoid fever patients whose nursing and maintenance are very much more expensive than those of scarlet fever patients, (*b*) by the fact that the average duration of stay in Hospital was much longer than usual, and (*c*) by the fact that in an institution of the size and character of Bagthorpe Hospital the average cost per head of treating and maintaining a large number of patients is always less than that of a small.

Mr. Thomas O'Neill Roe, M.B. Lond., M.R.C.S., L.R.C.P., continues to act as Resident Medical Officer to the Hospital. It is hardly necessary for me now to say that the manner in which this gentleman uniformly performs his duties is such as to leave nothing to be desired.

On the resignation of the matronship by Miss Nina Fox, in May of 1897, Miss Helen Wallace, who received her training at the Western Infirmary, Glasgow, and at the Tooting Hospital of the Metropolitan Asylum Board, was appointed to the office. This lady came to us with excellent testimonials, and has already proved her capacity with us.

At this point I must once more remind you of the necessity of obtaining a suitable site for a new small-pox hospital, and proceeding with the erection of such a hospital without further delay. The use of the existing small-pox hospital, as such, will be out of the question as soon as any part of the new workhouse has arrived at completion, or is utilized for Poor Law purposes.

Handbills, Leaflets, &c., (*Distributed from the Health Department*). Handbills, Leaflets, and Notices relating to (*a*) the feeding and care of infants, (*b*) the prevention of diarrhœa and cholera, (*c*) the prevention of tubercular consumption, (*d*) the care of scarlet fever patients discharged from Fever Hospitals, and (*e*) the provisions of the Shop Hours Acts, are reproduced in the Appendix of this report.

Disinfecting Stations.—The accompanying table of articles disinfected at the public stations, in 1897 and other years, again (as last year) shews a marked falling off for the year under consideration as compared with those that have gone before it. As I have already explained, the principal disease for which this class of disinfection is practised (in the absence of small-pox) is scarlet fever. Any decline of its prevalence (like that now in progress), therefore, is sure to tell upon the amount of work done at the stations. Every encouragement, however, is offered to the public to make free use of these establishments for the infection of such diseases as enteric fever, measles, and phthisis, and every year augments the amount of disinfection called for as a result of our efforts in this direction. The work of disinfection is not only done gratuitously by officers of the department, but the goods are also collected and delivered back free of charge.

Articles Disinfected at the Public Stations in Nottingham, 1884-97.

	1884	1885	1886	1887	1888	1889	1890	1891	1892	1893	1894	1895	1896	1897
Bedding ..	1767	2154	2411	4956	5250	5683	6020	5357	6735	8521	2943	10990	8822	4483
Clothing ..	1025	944	1316	3674	4827	5513	7577	4741	10253	11268	20579	12652	9012	4768
Furniture & Hangings	492	687	572	1091	799	757	585	401	439	726	1541	1277	2184	1382
Miscells. Articles	1127	2378	2147	6273	7565	10118	11518	8586	13319	10573	10303	13272	8394	8341
Total ..	4411	6163	6446	15994	18441	22071	25730	19085	30746	31086	35366	38191	28392	18974

The work done under this heading is carried out under the superintendence of Mr. F. G. Williams, Inspector for Infectious Diseases, and much credit is due to him for the prompt and efficient manner in which it is done. The same remark applies to the routine disinfection of houses, after scarlet fever and other infectious diseases, which is also under his supervision.

The Mortuaries.—The number of bodies taken in during 1897 was 205, as compared with 106 and 154 during 1895 and 1896 respectively, and an annual average of 48 for the 12 years prior to 1895. The Hyson Green Mortuary was opened on

December 22nd, 1896. The past year, therefore, is the first of its complete existence, and seeing that it has accommodated 53 bodies during the year, and, together with the room over the Police Station, ministered largely to the convenience of the Coroner and all others called upon to attend at inquests, it must certainly be held to have already fully justified its erection.

THE MORTUARIES.

Bodies taken in during each Month of 1897.

Month.	Eastcroft.			Hyson Green.		
	Male Bodies.	Female Bodies.	Total.	Male Bodies.	Female Bodies.	Total.
January	6	6	12	..	..	..
February	8	11	19	5	4	9
March	10	6	16	1	1	2
April	10	8	18	2	..	2
May	8	5	13	3	3	6
June	14	4	18	1	2	3
July	2	2	4	..	..	..
August	8	3	11	..	2	2
September	1	1	2	1	1	2
October..	5	8	13	2	5	7
November	2	7	9	8	4	12
December	11	6	17	5	3	8
	85	67	152	28	25	53

Total Bodies, 205.

An inspection of the accompanying table will show that, in the case of both establishments, a smaller number of bodies were brought in during the third than in any other quarter of the year, and that the Hyson Green Mortuary was more used during the last quarter than earlier in the year. The fact that the total number of bodies admitted at the Eastcroft is almost exactly identical with that of the year before, goes to show that there is plenty of room in the city for two at least of these establishments.

Cemeteries and Burial Grounds. — The Public Parks Committee are still engaged with the problem of securing suitable sites for burial grounds outside the inhabited parts of the city. They have, as you know, hitherto failed to arrive at any definite conclusion, except with regard to the rejection of certain sites. It is inadvisable that I should discuss the merits of others which have been suggested, and which are still under consideration. Suffice it to say that I have been requested, with the City Engineer, to report upon them, and that the prospect of a definite and satisfactory decision of this important matter is now apparently much less remote than it was a short time ago. I feel constrained, however, to say a few words here respecting the much criticised and now abandoned suggestion to establish a small cemetery for the northern parts of the town on Bulwell Forest. This latter is the property of the city, and was indeed acquired partly with the object of ultimately devoting a portion of it to this use, and there are certainly one or two corners which could be so applied without detriment in any way, or from any point of view, to the rest of the area. I have said nothing of the picturesqueness and convenience of the situation, and of the suitability of the soil for burials. These advantages are self-evident.

While discussing the subject of burials, I may fitly mention an incident in my recent experience which strongly illustrates the folly of burying bodies encased in lead, or other like material, in order to retard or defer the process of decay.

During October last I was entrusted with the removal of the bodies interred in the vaults of Friar Lane Chapel, preparatory to the sale of the latter and its site. The majority of the bodies had been buried in wooden coffins, and these were nearly all reduced to dust and gave rise to no trouble or nuisance in removal. Others, however, were in lead coffins, and in the case of one of these, though 70 years buried, the process of decay had been prolonged to such an extent as to cause a very serious and even dangerous nuisance when the blown lead burst, as it did in the course of its removal from the vault.

Common Lodging Houses.—At the close of 1897 there were 56 Common Lodging Houses on the Register, with but 37 Lodging House Keepers. Three transfers have been granted during the year to persons already on the register; this accounts for the reduction in the number of keepers while the number of houses remains unaltered. One house (that in Bear Court, Mansfield Road) has been demolished by the Great Central Railway, and one fresh house has been opened in a new district (Bulwell). Two houses have been enlarged to keep pace with extending business. The 56 houses have accommodation for 1051 persons, in 825 single and 113 double beds.

The situation of the houses is as follows :—

In Narrow Marsh	46
„ Millstone Lane	5
„ Canal Street and Leen Side	3
„ Water Street	1
„ Main Street, Bulwell	1
TOTAL	56

All the houses were whitewashed and cleaned throughout in April and October.

Legal proceedings were taken in two cases for infringement of the local regulations, and convictions obtained in each case. Fines of 30/- and 20/- respectively were imposed.

Mr. G. A. Read, the Lodging House Inspector, has performed his duties during the year in a thoroughly satisfactory manner. The condition of the houses all round, with respect to comfort and cleanliness, has undergone a marked improvement of late, and no small part of the credit of this is due in my opinion to his regular and systematic inspection.

I learn that several of the houses are now almost exclusively used by the navvies engaged upon the works of the Great Central Railway, and this alone is certain evidence of improvement, for until quite recently these workmen eschewed the houses altogether on the score of their dirt and discomfort.

I append the usual table of annual admissions to the two Corporation Lodging Houses :—

Situation of lodging house.	No. of beds.	No. of Lodgers admitted in each of the years.								
		1889.	1890.	1891.	1892.	1893.	1894.	1895.	1896.	1897.
Millstone Lane (Closed).	18	3,696	3,803	3,786	4,276	3,769	—	—	—	—
Popham Street (men only).	38	5,172	5,810	6,442	7,708	7,273	7,813	7,492	7,331	6,568
Parliament St. (women only).	20	3,804	4,107	4,720	5,110	5,387	5,555	5,663	6,252	6,374
		12,672	13,720	14,948	17,094	16,429	13,368	13,155	13,583	12,942

Housing of the Working Classes Act, 1890.—Insanitary Dwellings, etc.—I have certified thirty-seven houses as in unfit condition for habitation during the past year, under Sec. 30, Part II., of the Act of 1890. They were situated as follows :—

In Stag Yard, Pinder Street	4
„ Pipe Street and Nelson Street	3
„ Platt Street	7
„ Patriot Street, Southwell Road	3
„ Freeman's Yard, Bagnall Road	4
„ Barrack Lane, Derby Road	6
„ Ratcliffe Row, Coalpit Lane	6
„ Coalpit Lane	4

In the case of only two of the above lots of houses, in all probability, will it be necessary to apply to the magistrates for a closing order. The others are being or (as I confidently expect) will be dealt with satisfactorily without recourse to legal proceedings.

Particulars of insanitary conditions in dwelling-houses abated through the agency of the District Inspectors, under the Public Health Act of 1875, will be found in the table of work done by and through those officers at the end of this Report.

Factory & Workshop Acts, 1878-1891.—At the end of this Report will be found the usual tables of sanitary and other work done in connection with that part of the inspection of factories and workshops which falls within the

province of the Municipal Inspectors. Lists are also given of the principal industries carried on in workshops, together with the numbers of the latter devoted to each industry in the city, the numbers of workpeople employed, and the numbers of visits paid by the inspectors to each set during the year. The trades in which males and females are respectively employed are distinguished. Mr. Flint has the superintendence of the male, and Miss Hawksley of the female industries.

Under Section 3 of the Factory and Workshop Act of 1891, I am required to send written notice to the local Inspector of Factories of any case of the employment of a "child," "young person," or woman in any workshop, which may come to my knowledge. Thirty-nine such cases have come to my notice during the year, and all have been reported in due course to Mr. H. M. Robinson, H.M. Inspector of Factories for the district.

Shop Hours Acts.—A copy of the official notice issued under these Acts, and which, or the substance of which, every employer of young persons under 18 years of age is bound to show in a conspicuous place upon his premises, under a penalty of 40s., is given in the appendix.

Several suspected persons have been warned during the past year against infringements of these Acts, but no legal proceedings have been taken in respect of the latter. It is an exceedingly difficult thing in most instances to establish a case against offending employers.

Cleansing of Persons Act.—This Act, originally introduced as "The Verminous Persons Bill," is intended to "permit local authorities to provide cleansing and disinfection for persons infected with vermin." The use of the cleansing apparatus which may be provided under this Act is to be granted free of charge to any person who may apply for it on the ground that he is infected with vermin; and this privilege is not to deprive the applicant or the parent of such applicant of any right or qualification, as though, for instance, it were parochial relief. The Act received the Royal assent on August 6th, 1897.

No steps have as yet been taken in this city to make the provision permitted under this Act, but our steam disinfecting apparatus at the Eastcroft could, if necessary, be utilized for the purpose at once. It is indeed, even now, not infrequently used to destroy vermin in bedding and clothing.

Canal Boats Acts, 1877-84.—Mr. Franks, Chief Clerk in the Health Department and Inspector of Canal Boats, reports that he has inspected 163 boats during the year, and detected the following breaches of the Acts and Regulations:—

Offences.	No. of Cases.
Failure to repaint cabins	3
Failure to register boat	1
Failure to provide water vessel	2
Defective water vessel	2
Absence of certificate	2
Boat unmarked with registered number	1
Boat marked with wrong number	1
	12

He further states, however, that the general condition of the boats is now extremely good. All the matters complained of were remedied at once by the owners, on receipt of notice. The boats inspected carried 74 women, 67 children between 5 and 12 years of age, and 57 children under 5 years, but none of the boats carrying children belonged to Nottingham. The number of boats on the local register is now 130.

Mr. John Brydone, H.M. Inspector of Canal Boats, has again expressed himself as entirely satisfied with the way in which the work of inspection is now done.

Diseases of Animals Act, 1894. Orders, Regulations, etc., of the Board of Agriculture.—Thirty-two reputed cases of swine fever have been notified to the Board of Agriculture during the past year, but in only one instance was the diagnosis subsequently confirmed. Of rabies there were 4 reputed and 3 verified cases (all of dogs), and of glanders and farcy there were 5 cases (all of horses), all subsequently confirmed.

The verified cases of the several diseases had the following monthly distribution. :—

Swine fever—1 case in March.

Rabies—1 case each in January, February, July, and August.

Glanders and Farcy—1 case each in February and May, 2 cases in August, and 1 case in October.

On May 11th, 1897, an order for the muzzling of all dogs going at large was imposed by the Board of Agriculture upon Nottingham and district, and this order continued in operation beyond the end of the year.

Food Stuffs Condemned.—I have once more to report an excellent year's work on the part of Inspector Moore. The amount of butcher's meat seized or surrendered as unfit for human consumption during 1897 was considerably more than twice as much as that condemned in 1896, which itself was far greater than that of any other preceding year. Still, large as this amount seems, it is much less in proportion to the population than that ordinarily taken in towns with public abattoirs.

Nothing could show the necessity of general meat inspection better than the very bad quality of the meat respecting which our opinion is frequently asked by even the best of butchers.

The large quantities of game, poultry, fish, vegetables, &c., confiscated during the year, are taken by Inspector Fisher almost exclusively on the railway goods stations or elsewhere in transit.

1897.

MEAT.

	Imperial Stones.
Beef	1409½
Pork	374½
Mutton	153½
Veal	20
	1957

GAME, POULTRY, &c.

	Imperial Stones.
Rabbits	136
Pheasants	17½
Hares	13
Fowls	3
	169½

FISH.

	Imperial Stones.
Herrings	466
Cod	422
Shrimps	219
Dabs	162
Mackerel	112
Hake	96
Spragg	92
Kippers	90
Sprats	72
Coal Fish	69½
Conger Eel	44
Skate	40
Haddock	39½
Fish Roes	36
Cat Fish	35
Finneys	34
Reds	15

FISH—Continued.

	Imperial Stones.
Cod Finneys	11
Halibut	9½
Monk Fish	8
Ling	8
Whiting	6½
Whitches	5
Potted Shrimps	½
	2092½

SHELL FISH.

	Imperial Stones.
Mussels	840
Whelks	128
Crabs	38
Oysters	28
Cockles	5
	1039

FRUIT.

	Imperial Stones.
Pears	288

VEGETABLES.

	Imperial Stones.
Beans	15
Potatoes	12
Mixed Vegetables	20
	47

Sale of Food and Drugs Acts.—The appended table gives particulars of the samples taken during the past year, with the results of their analysis:—

	No. of samples.	No. Pure.	No. deficient or adulterated.	
			Deficient in Fat.	With added water.
Milk	91	67	1. 32% 1. 25% 1. 14% 1. 12% 1. 11% 1. 10% 1. 9% 1. 7% 1. 6% 1. 5% 10	1. 15% 2. 12% 2. 10% 1. 9% 1. 8% 2. 7% 1. 6% 4. 4% 2. 3% 3. 2% 19
Lard	8	4	With Beef Stearine. 1. 30% 3. 25% 4	
Bread	23	23	With Alum. 1. 22 grains per 2lb. loaf. 2. 20 „ 1. 15 „ „ 1. 8 „ „ 5	

	No. of samples.	No. Pure.		
Butter	14	14		
Cream	1	1		
Demerara Sugar	12	12		
Laudanum	2	0	Deficient in Alcohol	and in Morphia.
			1. 60%	42%
			1. 63%	90%
			2	
Tincture of Myrrh	16	6		
			1. 42%	
			1. 22%	
			1. 11%	
			2. 10%	
			1. 9%	
			4. 8%	
			10	
			Adulterated with Tartaric Acid.	and with Sulphuric Acid.
			1. 10%	22%
Citric Acid	16	14	1. 2%	11%
	188	141	2	

A report of legal proceedings arising out of adulterations, with the result in each case, is given later under the heading of "Prosecutions."

Mr. Trotman, the City Analyst, has responded with the utmost promptitude and efficiency to the increased demands upon his time and energy made by the growing work under this heading.

Dairies and Cowsheds.—The dairymen and milk-sellers upon the city register numbered 933 at the close of 1897, 16 fresh names having been added during the year. Owing, however, to the fact that persons retiring from the business do not as a rule take the trouble to inform us that they are doing so, it continually happens that our register is fuller than it should be.

The same thing occurs in the case of the register of cow-keepers. There are certainly not 161 keepers of cows in the city at the present time, but this is the number of names now entered upon our register of such persons—one having been added during 1897.

Slaughter-Houses.—There are now 156 registered slaughter-houses in the city. Two new houses have been licensed during the past year, both in Traffic Street, off Wilford Road. Five applications for transfers were made: all were granted.

You have now decided to commence the erection of public abattoirs on a site off London Road, adjacent to the Cattle Market approach, and it is gratifying to learn that a large number of butchers are prepared to go here for their slaughtering. The slaughter-houses will be under the supervision of your own officials, and not only will the inspection be rendered much more easy and efficient by the collection of the establishments upon one enclosure, but the trade will certainly feel the benefit of the innovation by the facilities for storage and transit which will be afforded in connection with the abattoirs.

In the appendix to this report will be found the greater part of the report of a Sub-Committee deputed by you in November, 1897, to visit, with myself, certain abattoir and knackery establishments in Germany. The account given in this report of the German abattoirs visited (which, though perhaps the most modern and complete, may be taken as otherwise fairly typical of those generally found in the larger towns) will shew (*inter alia*) that our rivals of the Fatherland spare no trouble or expense in safeguarding their meat supplies, and in fostering and organising upon the most sanitary and economic bases the very numerous subsidiary industries arising in connection with their preparation.

Routine Work of the District Inspectors. Conversion of Privies and Pail Closets.—The usual table of nuisances abated through the agency of the four District Inspectors of Nuisances will be found on page 78, at the end of this Report. The total number of items shows a slight increase as compared with that of 1896 (2,567, against 2,498), but there is nothing in this to call for special comment.

Not the least important items in the table from a sanitary standpoint are those having reference to pail closets and midden privies. We have now very good reason for thinking that these latter, as we know them here, are largely instrumental in assisting the spread of typhoid fever at least. The figures which I have prepared bearing upon the subject, and which are given in this and last year's Report under the heading of Enteric Fever,

admit indeed of no other interpretation. But it is necessary to convince the public of the truth of this, before attempting to secure the conversion of dry or conservancy closets in bulk. The privies are rapidly disappearing, but we have still our 40,000 pail closets to deal with, and the nuisance and danger to health arising from the ordinary pail closet is, in my opinion, second only to those from the privy. If a clean, sound steel pail were used, and if the contents of the pail were never spilled in the process of scavenging, this form of closet, though repugnant to our sentiments of decency, could probably do no great amount of harm; but when a highly absorbent and often leaky wooden pail is used, and when spilling of contents on removal is the rule rather than the exception, we have a state of things which constitutes not only a filthy nuisance, but a distinct danger to health as well.

An account of the samples taken by the District Inspectors for analysis under the Sale of Food and Drugs Acts, with the results of proceedings in respect of adulterations and other like offences, will be found under the heading of these Acts and that of "Prosecutions."

The Leen and Canal.—It is my duty once more to call attention to the hideously filthy condition of the Leen, Tinkers Leen, and Canal. All are probably more foul at the present time than they have ever been before, and their continuance in their present state is nothing short of a scandal to the city.

The additional works in connection with the Leen Valley Outfall Sewer, which are intended to relieve the Leen of much of its present pollution, cannot be completed for some time, and many details of the work, I believe, remain even yet to be decided on. Under these circumstances it seems to me that nothing can justify further delay in cleaning out these filthy channels.

Instead of going into greater detail here, I shall quote a passage on the same subject from my 1893 Report, which tells practically the same tale as I have to tell to-day, and will serve to remind you that the nuisance, even in an acute form, is not by

any means a new one. All the statements contained in this quotation from the past can be read as equally applicable to the present, but it must be remembered, as I have said, that the nuisance has gained in intensity during the intervening years:—

"The condition of this stream has seldom failed to inspire a paragraph in the Health Reports of recent years, but, since the appointment of a special committee of the Town Council to consider the question of its radical reformation, I have left the Leen alone. The state of the stream, however, at the present time is such as, in my opinion, to call imperatively for immediate action. The whole stream, with the Tinkers Leen and the Canal from Lenton to the Trent, is simply an open sewer with an extremely bad fall, and, as a necessary consequence, with a large amount of deposit throughout. This deposit continually adds to the floating pollution whenever the swiftness of the current is increased. I have hitherto referred only to the stream inside the borough; I must now make mention of that part outside, running between Hucknall Torkard and Bulwell. This portion, more than two miles long, is deeply silted at all parts with the sewage of Hucknall Torkard. There are numerous dams between Hucknall and Bulwell, and the flow at ordinary times is very sluggish; but when the volume of the stream is increased the flow becomes more rapid, and parts of the deposit are carried down towards the town.

"Hucknall Torkard is now provided with all the plant and gear of the 'International System' for the precipitation and filtration of its sewage, which, if properly worked, should in the future greatly diminish the pollution of the Leen between Hucknall Torkard and Bulwell; but, even if no further discharge of sewage were to take place—a consummation hardly to be looked for at present—the vast deposits of past years remain to pollute the stream (one may almost say) for generations to come. The removal of this deposit should, if possible, be included in any future scheme of improvement for the Leen.

"It is not in my province to suggest the engineering methods by which the necessary alteration in the Leen is to be effected, but I would point out, that so long as the stream is suffered to run in an open channel through poor and populous neighbourhoods, so long must we expect to find it used as a convenient *cloaca* for refuse of various kinds.

"The cesspits of houses and other such receptacles on the banks of the Leen have often proved only a means of delaying, between their periods of emptying, the passage of sewage to the stream.

"We are frequently asked to produce evidence of the damage to health resulting from unmistakable pollution nuisances of this character. For reply, we are too often obliged to content ourselves with stating that anything which pollutes air and soil must necessarily render them less healthy for their human inhabitants at any rate. It is often almost impossible to obtain statistical evidence of damage respecting the existence of which there can be no doubt. A whiff of foul air, or a draught of foul water may sow seeds of disease which take effect at a distance. During 1893, however, with a long and hot summer and small rainfall, there was an unusually large amount of diarrhœa in this town and most other populous places in the country. Our local epidemic was not by any means confined to the Leen valley, but the cases were between 30 and 40 per cent. more numerous (in proportion to the population) upon the low-lying and porous flats on either side of this stream, and in the meadows, than elsewhere in the town."

Notices.—One hundred and twenty-two statutory, and 1,004 ordinary notices have been sent out by the Health Department during the past year. The statutory notices are less than in 1896, but the ordinary are almost indentical in number with those of that year. In addition to the above, there are a very large number of verbal and other informal notices under which work is done.

Prosecutions.—These have been instituted during 1897 on the grounds and with the results detailed below. The offences charged and the convictions obtained are alike more numerous than in any previous year:—

SALE OF FOOD AND DRUGS ACTS.

Offence.	Result.
Sale of Milk deficient in fat 26%	Fine of £1
" " " 17%	Dismissed
" " " 14%	Fine of £1 and costs
" " " 11%	Fine of 10/-
" " " 10%	Fine of 5/- and costs, 6/9
" " " 7%	Dismissed
" " " 6%	"
" " " 5%	"
" containing 12% added water	Fine of 10/-
" " 12% "	Dismissed
" " 10% "	Fine of £1
" " 10% "	"
" " 9% "	"
" " 6% "	Dismissed
" " 6% "	"
" Mustard containing 23% added flour	Fine of £1
" Bread containing 22 grains alum	Fine of £7 10s.
" " 20 "	"
" " 18 "	"
" Lard containing beef stearine 30%	Withdrawn
" " " " 25%	"
" " " " 25%	"
" " " " 25%	"
" Laudanum deficient in alcohol 63%	Fine of £5
" " " morphia 90%	"
" Tincture of myrrh deficient in alcohol 42%	Dismissed on ground that (as alleged by defence) the deficiency of alcohol was not detrimental

PUBLIC HEALTH AND OTHER ACTS.

Offence.	Result.
Exposure for sale of unsound Meat	Fine of £5 and 24/6 costs
" " "	Fine of £2
" " "	Fine of £5
" " "	Fine of £2
Deposit of unsound Meat for sale	3 months' imprisonment
" " "	Fine of 55/- and costs
" " "	Fine of £2
" " "	"
" " "	Fine of £20
Deposit of unsound carcase for sale	Fine of £2 and costs
Exposure of infectious persons	Fine of £2
Illegal removal of swine	Payment of 10/- costs
Obstructing Inspector in execution of his duty	Fine of £1
Nuisance from manure pit	Order for abatement within 21 days
Dirty condition of Common Lodging-house	Fine of £1
" " " "	Fine of £1 10s.

Abatement of Nuisances.

(a) General.

Description of Work Done.	Inspector Copley.	Inspector Old.	Inspector Byrns.	Inspector Betts.	Total.
Houses repaired	9	4	15	52	80
Houses cleansed	7	1	4	2	14
Houses overcrowded	6	3	3	2	14
Bath wastes disconnected	1	2	9	12	24
" " trapped	..	4	..	1	5
Sink wastes disconnected	19	14	24	17	74
" " trapped	..	..	..	2	2
Drains repaired and cleansed	145	175	166	215	701
Drains trapped	102	132	24	46	304
Water closets repaired	15	23	53	53	144
Pail closets repaired	133	44	92	132	401
" " provided	..	..	..	..	..
Waste water closets provided	6	15	..	31	52
Ashpits abolished	5	6	16	28	55
Privies abolished	10	9	16	42	77
Water closets provided in lieu of privies and pail closets	2	1	6	11	20
Soft water cisterns cleansed	7	6	7	7	27
Courts and yards paved	90	46	46	57	239
Piggeries abolished	12	18	1	2	33
Stables, &c., drained	8	6	2	9	25
Urinals repaired, &c.	5	..	6	4	15
Manure pits repaired, &c.	13	1	4	10	28
Offensive accumulations removed.. ..	17	23	15	25	80
Miscellaneous	72	17	31	33	153
Totals	684	550	540	793	2567

(b) Workshops.

Inspector Flint. (Male).

Work done.

Workshops and bakehouses limewashed	361
Workshops and bakehouses repaired	4
Offensive refuse removed	19
Overcrowding abated in Workshops..	3
Additional ventilation provided in workshops and bakehouses	5
Additional exits provided	1
Offensive animals removed from bakehouse	1
Sink Waste repaired	1
	395

Inspector Hawksley. (Female).

Work done.

Workrooms limewashed	119
Staircases limewashed	4
Additional ventilation provided in workrooms	7
Additional ventilation provided in W.C.'s and other offices	6
Heating apparatus provided	1
Overcrowding abated in workrooms..	1
Additional exits provided	1
Stairs and floor repaired	4
Ceiling repaired	1
W.C. repaired	1
Roof of lavatories repaired	2
	147

Inspection of Workshops in which Males are employed.

Branch of Trade.	Number of Workshops.	Number of Employées.	Number of Visits.
Aerated Water Manufacturers ..	16	156	35
Bakers and Confectioners ..	252	500	1632
Bamboo Furniture Maker ..	1	4	2
Basket Makers and Wicker Workers	33	382	78
Baking Powder Maker	2	12	3
Beer Bottlers	5	92	7
Bicycle Makers	11	81	16
Blacksmiths	39	124	73
Box Makers	9	93	14
Boat Builder	1	2	1
Boot and Shoe Makers	55	126	74
Brewers	3	25	4
Brass Founders	3	14	3
Brass Workers	2	18	2
Brick Makers	4	160	4
Brush Makers	6	28	10
Cabinet Makers	31	351	42
Card Punchers	3	8	6
Carvers and Gilders	3	13	4
Chair Makers	2	7	2
Chemists (Manufacturing) ..	2	7	3
Cigar Box Maker..	1	20	2
Clog Maker	1	6	1
Coach Builders and Wheelwrights	31	172	47
Confectioners and Sugar Boilers	16	146	28
Coopers	6	30	8
Copper Smith	1	4	2
Corn and Seed Merchant ..	1	40	1
Currier	1	6	1
Cricket Outfitters	2	20	2
Dropper and Box Maker ..	1	4	1
Drysalter, Wholesale	1	12	1
Dyers	2	4	2
Engravers	2	2	2
Engineers and Machinists ..	4	25	4
Enameller	1	10	5
Fellmonger	1	12	2
Embossers	2	12	5
Firewood Merchants	9	41	11
Framesmith	1	9	2
Framework Knitters	10	89	11
Furniture Painters and Polishers	8	27	8
General Smiths	15	63	18
Gut Cleaners	10	33	24

Trade.	Number of Workshops.	Number of Employées.	Number of Visits.
Hatter	1	1	1
Hosiery Manufacturers	4	33	6
Hosiery Trimmers	5	30	5
Ice Cream Makers	4	8	9
Iron Founders	3	42	3
Joiners and Builders	119	532	154
Lace Designers	6	32	6
Lace Manufacturers	6	95	6
Lath Render	1	2	1
Launderers	2	21	3
Leather Dressers	5	31	6
Lime Light Operator	1	5	2
Maltsters	5	16	7
Marine Store Keepers & Waste Merchants	19	110	28
Mattress Makers	2	11	2
Needle Makers	5	36	10
Optician	1	2	1
Organ Builder	1	10	1
Packing Case Makers	4	25	4
Painters and Decorators	5	51	7
Paper Rulers	3	14	3
Perambucot Makers	9	56	13
Picture Frame Makers	3	9	3
Pipe Clay and Pipe Makers	3	13	4
Plated Measure Makers	2	3	3
Plumbers	29	97	34
Provision Curing	3	3	6
Rope and Twine Makers	2	14	3
Sack and Cover Makers	3	10	4
Saddlers	13	75	23
Sauce Manufacturers	3	8	4
Scale Makers	2	6	3
Screw Maker	1	2	1
Sculptors	9	45	13
Setter-up of Lace Machines	1	3	1
Silk Hosiery Makers	4	22	10
Sinker Makers	4	13	5
Size and Glue Makers	2	24	4
Soap Makers	4	41	5
Steel Bar Maker	1	4	1
Stonemasons	7	58	9
Surgical Hosiery Makers	6	43	9
Surgical Appliance Maker	1	3	1
Tailors	104	639	198
Tallow Chandlers	3	14	6

Trade.	Number of Workshops.	Number of Employées.	Number of Visits.
Ticket Writers	4	11	4
Tin Plate Workers	34	75	48
Undertakers	5	13	6
Upholsterers	7	53	7
Venetian Blind Makers	3	10	5
Watch Makers	1	4	1
Warpers	2	2	2
Wheel Maker	1	2	1
Whip Makers	3	14	3
Whitesmiths	10	30	12
Wood Carvers	2	5	2
	1103	5527	2922

Inspection of Workshops in which Females are employed.

Trade.	Number of Workshops.	Number of Employées.	Number of Visits.
Blind Makers	2	3	2
Box Makers	26	274	63
Book Folder	1	20	2
Boot and Shoe Maker	3	4	6
Collar Manufacturer	1	9	3
Confectioner	1	8	2
Corset Maker	1	1	1
Curtain Dresser	1	3	2
Cricket Outfitter	1	2	2
Cap and Cap-shape Makers	7	51	11
Cigar Box Maker	1	19	2
Cork Sock Manufacturer	1	5	3
Curtain Manufacturer	1	17	4
Dressmakers	237	793	443
Embroiderers	2	17	3
Furrier	1	1	1
Hosiery Manufacturers	25	657	61
Hosiery Trimmers	2	9	2
Hair Net Manufacturers	2	12	3
Jam Maker	1	20	2
Lace Menders	21	329	32
Laundresses	20	99	32
Lace Clippers & Chenille Spotters	58	760	108
Lace Manufacturers	177	2080	400
Marine Store Keepers	9	39	22
Makers-up of Hosiery	29	129	36
Milliners	44	145	71
Makers-up of Underclothing	3	26	3

Trade.	Number of Workshops.	Number of Employées.	Number of Visits.
Pneumatic Tyre Maker ..	1 ..	4 ..	1
Paper Bag Makers	2 ..	13 ..	3
Perambucot Makers	3 ..	16 ..	4
Pipe Maker	1 ..	4 ..	2
Shirt Makers	5 ..	20 ..	7
Sleeve Extenders	1 ..	26 ..	4
Surgical Appliance Makers ..	5 ..	83 ..	11
Sun Bonnet, Mob Cap, and Apron Manufacturers	10 ..	113 ..	27
Sugar Boilers	4 ..	40 ..	7
Sweet Exporters	2 ..	8 ..	2
Tailors	61 ..	448 ..	139
Toy Maker	1 ..	10 ..	1
Upholsterers	9 ..	87 ..	23
	783	6404	1553

Bakehouses in Nottingham, 1897.

Bakehouses in use	250
„ underground	82
„ partly underground	20
Underground Bakehouses approached from interior of premises only..	45
„ „ „ from outside only	25
„ „ with entrance from both inside and outside	12

The largest Bakehouse is above ground, and contains a space of 26,000 cubic feet. The average height of this Bakehouse exceeds 11ft., and it is efficiently ventilated at the highest points of the walls.

The smallest Bakehouse contains a space of 450 cubic feet.

The greatest number of men working in any one Bakehouse is 24.

The minimum height of any Bakehouse from floor to ceiling is 6ft. 8in.

APPENDIX.

The following statistics are furnished by Mr. T. R. SWAINE, the Manager of the Sanitary Depôts:—

COLLECTION AND DISPOSAL OF REFUSE.

Number of Pails Collected, 17 Years ending 31st December, 1897.

YEAR.	NOTTM.	BASFORD AND BULWELL.	RADFORD AND LENTON.	TOTAL.	WEEKLY AVERAGE.
1881	1,009,323	168,105	117,432	1,294,860	24,901
1882	1,162,665	301,833	184,107	1,648,605	31,703
1883	1,309,917	407,820	254,667	1,972,404	37,930
1884	1,431,399	480,443	329,057	2,240,899	43,094
1885	1,473,833	513,822	365,211	2,352,866	45,247
1886	1,505,784	541,086	375,270	2,422,140	46,579
1887	1,555,937	535,950	423,885	2,515,772	48,380
1888	1,514,633	532,730	417,186	2,464,549	47,395
1889	1,482,102	535,206	418,806	2,436,114	46,848
1890	1,485,880	547,659	425,586	2,495,125	47,290
1891	1,503,674	560,127	432,324	2,496,125	48,002
1892	1,523,965	580,061	446,687	2,550,713	49,052
1893	1,525,804	587,718	443,960	2,557,482	49,182
1894	1,559,608	605,349	445,606	2,610,563	50,203
1895	1,594,130	631,219	432,450	2,657,799	51,111
1896	1,598,814	636,951	441,126	2,676,891	51,478
1897	1,568,172	636,744	444,859	2,649,775	50,957

Pails in use - - - - - - - -	39,985
Ashpits cleared (exclusive of Basford and Bulwell) -	3,547
Dry-Ash-Tubs in use - - - - - -	6,228
Dry-Ash-Covers in use - - - - - -	1,335

Number of Loads Collected.

	1885	1886	1887	1888	1889	1890	1891	1892	1893	1894	1895	1896	1897
NOTTINGHAM.—Pail Closets	70,182	71,704	74,092	72,125	70,576	70,756	71,603	72,570	72,657	74,267	75,911	76,134	74,675
Night Ashpits ..	5,034	4,116	3,645	3,408	3,056	2,775	2,939	2,896	2,418	2,287	2,460	2,278	2,391
Dry Ashpits and Dry Ash Tubs	7,704	8,153	8,038	7,495	7,588	7,170	7,199	7,463	8,301	8,378	8,820	9,518	10,230
Slaughter House ..	887	858	906	867	884	907	975	973	969	975	975	1,037	1,021
Pot Cart	483	489	490	485	483	499	849	916	1,229	1,286	1,348	1,379	1,390
BASFORD AND BULWELL.— Pail Closets	24,467	25,766	25,521	25,368	25,485	26,079	26,672	27,622	27,986	28,826	30,058	30,331	30,321
RADFORD & LENTON Pail Closets..	17,391	17,870	20,185	19,866	19,943	20,266	20,587	21,271	21,141	21,219	20,593	21,006	21,183
RADFORD & LENTON Night Ashpits	3,324	3,062	2,271	2,206	2,238	2,163	2,182	2,047	1,973	1,967	1,951	2,666	2,844
Totals	129,472	132,018	135,148	131,820	130,253	130,615	133,006	135,758	136,674	139,205	142,116	144,349	144,055
WEEKLY AVERAGES ..	2,489	2,538	2,599	2,535	2,504	2,511	2,557	2,610	2,629	2,677	2,733	2,775	2,770

Disposal of Refuse.

	1883	1884	1885	1886	1887	1888	1889	1890	1891	1892	1893	1894	1895	1896	1897
Number of Wagons sent out ..	3,203	4,022	4,628	4,753	4,940	4,994	4,999	4,342	3,669	3,510	4,481	4,085	4,109	3,134	3,091
Average Weight of Night-soil per Truck			T. c. q. 8·1·2	T. c. 8·2	T. c. q. 7·19·2	T. c. q. 7·17·2	T. c. 7·16	T. c. 7·16	T. c. 8·0	T. c. q. 8·1·1	T. c. q. lbs. 7·17·3·20	T. c. q. lbs. 7·19·0·18	T. c. q. lbs. 7·17·1·17	T. c. q. lbs. 7·18·1·12	T. c. q. lbs. 7·19·2·19
Number of Boats sent out ..	585	646	555	327	371	350	293	278	247	547	320	415	359	574	514
Average Weight of Night-soil per Boat			T. c. 35·10	T. c. 37·0	T. c. 35·10	T. c. q. 38·11·2	T. c. q. 37·10·3	T. c. q. 36·13·1	T. c. q. 35·0·2	T. c. q. 34·10·3	T. c. q. lbs. 32·10·3·21	T. c. q. lbs. 32·6 2·9	T. c. q. lbs. 32·9·3·23	T. c. q lbs. 32·10·0·3	T. c. q. lbs. 32·17·0·6

Report of a Deputation from the Health Committee of the Nottingham Corporation,

AFTER THEIR INSPECTION OF CERTAIN KNACKERY AND ABATTOIR BUILDINGS AND PLANT IN GERMANY.

(Abridged.)

NOVEMBER, 1897.

The Health Committee of the Nottingham Corporation have long felt the necessity of providing some more cleanly, economical, and generally efficient means of dealing with the carcases of horses, with condemned (unwholesome) meat of various kinds, and other refuse animal matter, than has hitherto been afforded by the antiquated knackery establishment still in use at the Eastcroft, and which is (and has been) the only licensed knackery in the City.

In the early part of 1897 the Medical Officer of Health reported to the Committee that a patented German invention was on the market, though not yet sold in this country, for reducing horse carcases, and other refuse flesh and organic material, by the aid of super-heated steam. The Medical Officer of Health was thereupon instructed to obtain what particulars he could, respecting the cost and working of the apparatus, for the information of the Committee.

With the aid of the local agent of the German Patentees, Mr. Richard Simon of Zulla Road, Nottingham, the Medical Officer of Health found that, although there was one installation of the apparatus about to be established at Bristol, there was none in actual work in the United Kingdom. There was however, a considerable amount of reliable information to be obtained, both at home and abroad, from persons who had seen

the apparatus at work, and, this having been laid before the Committee, they finally decided on October 29th, 1897, to send a deputation from their own body to Germany, to inspect the plant in operation.

The deputation consisted of the Chairman, Vice-Chairman, Mr. Alderman Jelley, Mr. Councillor Hunter, and Dr. Boobbyer, the Medical Officer of Health. It was decided that the deputation should proceed to the town of Essen, on the borders of Westphalia and the Rhine Province, where three of the apparatus were stated to be in full work in the public abattoirs of that town. They accordingly started on Tuesday, November 9th, and, travelling *via* Calais and Brussels, reached Essen on Thursday evening, November 11th.

The town of Essen contained, at the census of December, 1890, a population of 78,723, which is now estimated to have increased to close upon 100,000 persons. It is well known as the head-quarters of the celebrated Alfred Krupp, in whose works nearly 50,000 of the inhabitants are said to be employed.

Each apparatus consists, essentially, of a jacketted cylinder 10ft. long by 4ft. 6in. diameter, known as the sterilizer or disinfector, within which is a freely revolving, perforated drum, furnished at its lower part with a heavy iron roller for grinding and expressing and across its cavity with projections for stirring the contents. The cylinder is horizontally suspended on short steel shafts or trunnions, and is either oscillated or turned (as the nature of the work to be done may require) by means of reversing or continuous cogs and an archimedean worm.

Connected with this essential part of the mechanism are closed iron vessels, known as "recipients" and "separators," for receiving and separating the fat and gelatin produced, which is forced into them by steam pressure, also a Lancashire boiler and a small horizontal engine, with the necessary steam piping, shafting, ejectors or suction and pressure pumps (for fumes), condensers, etc. Each apparatus requires about a two horse-power to actuate it.

The apparatus is now made only in two sizes (instead of three, as stated in the original prospectus). The price of each apparatus, less boiler, engine, and other accessories mentioned above, but otherwise complete, fitted up in working order in this country, is:—

No. 1 size, with capacity for 2 tons of raw material, £1084 0s. 0d.

No. 2 size, with capacity for 1 ton of raw material, £882 0s. 0d.

Two apparatus of No. 1 size, when sold together, are quoted at £1925 the pair.

The practical operation of the mechanism is conducted in the following manner:—

A load of flesh, fat, bones, etc., amounting to some 30 or 40 cwt.—*i. e.*, a mass corresponding to the bulk of from 3 to 4 horses—or any lesser quantity that may have to be dealt with, is introduced, either through the manhole on the upper surface of the cylinder, or, when it is necessary to introduce an entire carcase, as in dealing with infected animals, by opening the whole end cover of the cylinder and allowing the carcase to slide down a shoot into its cavity. The inner space is now closed by a slide, and the whole cylinder by means of a clamped and steam-tight cover. Before describing the admission of steam to the jacket and drum, it may be as well to mention that from 45lbs. to 52lbs. steam (3 to 3½ atmospheres) is commonly used, but that 75lbs. steam (5 atmospheres) is sometimes applied—the former when time is no object, the latter when it is. Steam, then, of from 45lbs. to 75lbs. is first admitted into the outer jacket, to warm the cylinder and its contents, the fume ejector* (carrying offensive gases and vapour through a washer to the furnace) is opened, and the cylinder is caused to revolve or oscillate slowly. After the temperature of the interior has been raised about to boiling point (212°), the ejector is shut off, steam is introduced into the cavity of the cylinder, and the process of steam digestion commenced.

* Suction and pressure pumps are now used (in the more recently constructed apparatus) for conveying the fumes to the boiler fire.

After the latter has been continued for some 3 or 4 hours, the fat and gelatin, which are now completely separated, are forced out into their above-mentioned receptacles (recipient and separator) by steam pressure. The steam is then shut off from the interior, and supplied only to the jacket, in order to dry the residual "manure" remaining in the interior, and the fume ejector is opened. After the lapse of from 2 to 5 further hours—the length of this period varying with the temperature of the steam and the mass of material to be dried—the whole of the residuum will have been completely desiccated, and forced by the roller through the perforations in the drum. This stage of the process being satisfactorily completed, the door at the end of the cylinder is opened, and the contents automatically discharged or removed by manual labour.

The fat extracted from the carcases of the horses, and other animals commonly available, is of excellent quality, and fetches from 12/- to 14/- per cwt. The gelatin, chondrin, etc., cannot be used for glue making, on account of the high temperature to which they have been exposed. They can be used only for the making of size. The dry residuum has been spoken of above as manure, but it is stated also to be an excellent, though somewhat rich food for pigs, fowls, and other creatures. It is sold at from 3/- to 4/- per cwt. (sacks included), in sacks measuring, when full, 2ft. 6in. by 1ft. 0in. The material scales almost uniformly 110lbs. to the bushel measure.

In addition to the process here described, there is one by which the offals, abattoir manure and sweepings, with the blood and other organic detritus of the shambles, are reduced to odourless manure, in similar cylinders and by similar methods to those already detailed, except that no "recipients" or "separators" are called into use, there being no fat or gelatin worth mentioning to be obtained from the raw material to be dealt with. The product of this last process is said to be saleable at from 1/- to 2/- per cwt.

The fat produced by the first process is said to contain only about 1½% of water. The residual manure from the first process is reputed to contain:—water 6·0%, nitrogen 6·47%, phosphoric acid 13%.

The manure from the second process seldom contains, it is said, more than 2% of nitrogen, and cannot therefore be of any great value, except perhaps for lightening heavy soils.

To give some idea of the business value of the first process, the following analysis of its actual test operation in a single apparatus of No. 1 size, and the result thereof, during a period of 10 days (comprising 95½ working hours), has been worked out by Dr. Pöbel, of Cassel:—

Weight of flesh, etc., digested.		Description of Animal yielding material.
23,430 lbs.	.....	Horses.
4,510 „	.....	Horned Cattle.
2,145 „	....	Swine.
165 „	.....	Deer.
30,250 lbs.	(= 13 tons 10 cwt.)	

The digestion of this total yielded—

3,739 lbs. fat = 33·4 cwt. (= 1 ton 13 cwt.)
5,896 lbs. guano = 52·6 cwt (= 2 ton 12 cwt.)
? size.

33 cwt. fat	@ 12/-	=	£19	16	0
52 cwt. guano	@ 3/6	=	9	2	0
			28	18	0
58½ cwt. coal used	@ 6d.	=	1	9	3
		Gross	£27	8	9

Disinfection is so completely effected by the process of steam digestion, that (in Germany) the carcases of animals that have suffered from any of the infectious diseases (including glanders) are allowed to be disposed of in this manner.

The Otte plants at Essen are attached to the public abattoirs of that town, and, with the latter, are owned by the Municipality.

Although a large quantity of flesh and other material was in process of digestion in all the apparatus at the time of the deputation's visit, no offensive smell was perceptable at any part of the premises.

While the members of the deputation cannot but feel that the Otte apparatus is one of great value, for the means it affords of disposing innocuously and profitably of material which commonly gives rise to much nuisance, and is certainly not very marketable as yet (as dealt with by us) in this country, they are also of opinion that the purchase of the plant by the Nottingham Corporation at the present time would be altogether premature, for they cannot but realize that it is only when used in conjunction with public abattoirs that its full utility could be manifested. At the same time, if any private person or persons are prepared to establish an installation of such plant, at their own charge and risk, upon a suitable site in this city, the deputation are of opinion that a license for such establishment should be granted.

Although the deputation was specially appointed to visit and report upon the Otte apparatus, they were authorized also to take, and took the opportunity of visiting and inspecting the public abattoirs at Essen and Cologne, the last of which are among the finest in Germany.

* * * * * * * *

A general description only has been given of the Essen abattoirs, because, beyond the fact that they are good plain buildings fulfilling the purpose for which they were erected in a fairly satisfactory manner, there is nothing about them, in design, appointment, or method of administration, calling for special mention. With those of Cologne, however, the case is altogether different. The ancient city of Cologne, the capital of the Rhine Province, situated on the W. bank of the Rhine at a distance as the crow flies of about 150 miles from the North Sea, contained in Dec., 1890, some 280,000 inhabitants. On the outskirts of this city, beyond the old ramparts, and adjoining the state railway between Cologne and Aachen, there has recently been completed

a combined covered cattle market and abattoir establishment, which, so far at any rate as the quality and completeness of its structure and appointments are concerned, leaves nothing to be desired. The buildings are placed upon a rectangular site some 700 yards in length by 250 yards in width, with one of its longer sides abutting upon the railway. The whole available area of this large site, however, is not yet occupied, several spaces being left in convenient situations to allow of future extension. All the buildings are of red brick, and very substantially and even artistically finished. There is a large covered cattle market lighted from the roof (more than 150 yards long by 100 yards in width), and separate markets (each about 100 yards long by 40 yards wide) for sheep and other small animals) and for pigs. There are also, in connection with these, separate and ample covered lairages for cattle, sheep (and other small animals) and pigs. There are two large slaughter-houses (about 100 yards long by 30 yards wide) for horned cattle; one of the same length but one third wider for sheep and the like animals, another of the same length and still greater width (50 yards) for pigs, and yet another and smaller (about 50 yards long by 20 wide) for horses.

All these buildings run north and south, and are of two storeys, the upper floor being used for the storage of hay, straw, and other such material, and the lower, on the ground level, for the slaughtering and dressing of the animals. All these slaughter buildings, and, in fact, all parts of the establishment on the ground level, except the roadways, are paved with strong cement concrete. The floor space inside the slaughter-houses is divided up by galvanized iron railings, and the buildings are fitted with overhead iron travellers, on which the meat is suspended by means of hooks, and by which it is readily transported to different parts of the houses or to the outside.

All animals are rendered insensible before being bled, as at Essen, and again, in most cases, by the use of the same mechanism —an iron and leather mask provided with a brain punch. The methods of bleeding and dressing the animals appear to be very similar to those in use in this country. The systematic, cleanly,

and orderly manner, however, in which the work of slaughtering, of dressing, and of removing the animals is carried on, constitutes an extremely instructive object lesson to those accustomed only to the practice of private slaughter-houses.

On the opposite side of, and facing the roadway running past the northern end of each slaughter-house, are separate cold chambers for the storage of the several kinds of meat prepared in the slaughter-houses. These are entirely above ground, and sunlight is admitted to them through windows formed of blue-green glass, in prismatic blocks, these being designed to dissipate to some extent the heat of the sun's rays.

The meat in the cold stores is not actually frozen, but kept (as in most cases elsewhere) at a uniform temperature slightly above freezing point. Ice is generated in large quantities in the refrigerators adjoining the cold stores, and supplied to the public of the City at a cheap rate.

In addition to the slaughter-houses already described, there are knackeries or slaughter-houses (set apart from the rest of the buildings and provided with steam digesters) for dealing with worn out or damaged horses and other animals, and for the killing and disinfection of animals suffering from infectious diseases or otherwise unwholesome.

The establishment is completed by a large exchange, and other suitable business offices, by engine and boiler houses, repairing workrooms and workshops, microscope and bacteriological rooms, a vaccine-lymph station, isolation stalls for animals, hide and skin, gut cleaning, and fat rendering houses, docks adjoining the railway, and a restaurant for the use of all persons employed or having business at the abattoirs.

All the killing and dressing is carried out by municipal employées. The charges for housing, killing, dressing and storing, are 3/6 to 4/- for each bovine and other large animal, and lesser sums for the smaller—the charges being almost exactly identical with those made at Essen.

The inspection and classification, and subsequent stamping of the meat according to the latter, is also carried out as at Essen by Inspectors of the Municipality.

The removal of the meat from the cold stores to the shops of the butchers is undertaken by a carrying company, and is effected in specially constructed covered carts, in which the carcases, joints, etc., are separately suspended in transit.

It is worthy of note, and possibly a ground of adverse criticism in connection with these establishments, that the lairages in which the various classes of animals are housed are not placed in immediate proximity to the slaughter-houses in which such animals are killed. It would seem at least a more convenient arrangement to place the several lairages and slaughter-houses in proximity, and, so long as the disconnection of the two is complete, there would appear to be no conceivable objection to it.

Herr Musmacher, the resident engineer at the abattoirs, furnished the following particulars regarding their cost, together with certain other business details:—

The entire cost of the establishment was 8,000,000 marks, or £400,000.

The cost of the cattle and other markets was 4,000,000 marks, or £200,000.

Two-thirds of the total sum was expended on buildings and plant, one-third upon lands and roads.

The site alone cost 1,300,000 marks, or £65,000.

The gross revenue derived by the Municipality from the abattoirs amounts to eight per cent. upon the total outlay. The interest upon borrowed capital swallows up three per cent. of this, and allowance for depreciation one per cent. more, leaving four per cent. net profit after paying all expenses.

By dwelling at such length on the subject of abattoirs, the deputation do not mean to imply that these should be at once established in Nottingham, but, having had an opportunity of thoroughly inspecting two sets out of the vast number now in use on the Continent, and one of these certainly a model in almost all

particulars of all that such an establishment should be, they feel that they could not do otherwise than give some description of them, if only to remind the people of Nottingham that in some points of equipment their City still falls considerably short of perfection.

This Report was received and approved by the Health Committee on Friday, November 26th, 1897.

HANDBILLS & LEAFLETS.

City of Nottingham. The Feeding and Care of Infants.

1.—The natural and best food for a young infant is its mother's milk.

2.—The child should be suckled once every two hours during the day, and once every four hours during the night, until it is about three months old, and at gradually lengthening intervals after the lapse of this period.

3.—The child should, if possible, receive no other food than its mother's milk until it is at least 6 or 7 months old.

4.—During the suckling period the mother should take plenty of good, plain, nourishing food, but should avoid alcoholic stimulants and spices.

5.—The mother should wash her nipples each time after suckling. If they become sore she should apply some glycerine or lanoline to them, and, if necessary, use a nipple-shield carefully cleaned with soap and warm water after each time of suckling.

The following instructions may be advantageously followed, at the earlier ages in cases where the mother is unable to suckle her infant, and at the later ages in all cases:—

(*a*) During the first six weeks after birth the child should be fed every two hours throughout the day, reckoned between 4 a.m. and 10 p.m., and once again between these hours in the night. Its food should consist of one part of fresh, pure cow's milk, and two parts of water, mixed and boiled, and, after boiling, sweetened with a small teaspoonful of brown sugar to each pint (of the mixture). Barley water may sometimes with advantage be used instead of plain water, but lime water is better avoided. The mixture should be kept in a clean covered vessel, and in a clean cool place, between meals. The temperature of the food given to a young child should be 95 degrees Fahrenheit, *i.e.*, about the heat of the human hand. One and-a-half ounce (three tablespoonfuls) to two ounces (four tablespoonfuls) should be given to a child each time it is fed.

Two bottles should always be used, each alternately; one being scalded and rinsed, and afterwards left to soak, while the other is in actual use. The bottles should have no tube or neck, but have a mouth large enough to admit the first finger, and this should be fitted with an indiarubber teat only. The teats should be washed inside and out after each time of using with soap and warm water.

(*b*) From six weeks to three months old the child should be fed with a mixture of equal quantities of cow's milk and water, with sugar as above; but two teaspoonfuls of cream may now be advantageously added to each meal. The quantity given at each meal should be about four ounces (eight tablespoonfuls). The interval between meals should now be gradually but continually lengthened.

(*c*) From three months to seven months old the child should have a mixture of two parts of cow's milk to one of water. About four ounces (eight tablespoonfuls) should at first be given at each meal, but, the intervals between meals being still lengthened, a larger quantity than this will soon be required for each meal. The quantity of cream given with each meal may now be increased from 2 to 3 or 4 teaspoonfuls.

The following is a useful working rule for the feeding of a child, with such substitutes for mother's milk as mentioned above, during the period in which liquids should be exclusively used :—

Begin with about 16 oz. a day of 24 hours, as under (*a*). Increase this by the addition of 1 oz. to 2 oz. a week up to the end of the first month. After the first month add 4 oz. a month up to the end of the seventh month. At this period, unless the child is regularly to have some quantity of the farinaceous food mentioned in the next paragraph, its milk should amount to at least 40 oz. a day. At 9 months a milk-fed child should have three pints in the 24 hours.

(*d*) From 7 months to 12 months old the child should be given five meals in a day of 24 hours. The number of meals will thus have been reduced by a little more than one half (from 11 to 5) in the first seven months. Each meal should consist at the first of about 5 or 6 ounces (10 or 12 tablespoonfuls) of undiluted cow's milk, with cream as under (*c*) ; but three of the meals may also each contain about a teaspoonful or more of some whole-meal farinaceous food well boiled and stirred up with the milk. All the meals in this period should be given between 6 or 7 a.m. and 9 or 10 p m.

(*e*) From 12 months to 18 months old the child should still be fed only during the day, and at about the same intervals, on five occasions, between early morning and night. The amount of milk should be about twice as great as given under (*d*), and porridge, bread and milk, bread and gravy, bread and butter, and a lightly boiled egg occasionally, may with advantage be given with, or in place of the milk as time goes on. It must not be forgotten, however, that pure fresh cow's milk, well boiled, is an excellent and sustaining food as well as a palatable drink for human beings at all ages.

The quantities of food given above are those generally suitable, but the capacity of children for food varies much, and signs of indigestion due to overfeeding should not be overlooked because a comparatively moderate amount of food is being taken.

It is unwise for a mother to undertake the medical treatment of her child, except, perhaps, to the extent of giving it a little opening medicine occasionally. She should never give it sleeping or quieting medicine except under medical advice.

A young child should not on any account sleep in the same bed with nurse or parents.

A young child should be warmly but loosely clothed over the whole of its body and limbs, and as few pins as possible should be used in dressing it.

It should be remembered that a young child is exceedingly liable to suck or to swallow anything within its reach which admits of being so treated.

It should also be borne in mind that a young child has no dread of fire or hot things unless or until it is actually burnt.

PHILIP BOOBBYER, M.B.,

Medical Officer of Health, Nottingham.

City of Nottingham. Prevention of Diarrhœa and Cholera.

These diseases may in great measure be avoided by the exercise of common care. Cleanliness of person and surroundings and a judicious diet are the best possible safeguards against them. Their germs enter the system through contaminated air, water, and food; it is most important, therefore, to secure the utmost possible purity of these three vital agents.

All parts of a house should be freely ventilated both by day and night:—there is as a rule much less harm to be apprehended from too much than too little fresh air, whatever its temperature or degree of moisture. No decomposing refuse should be allowed to remain in the house or its neighbourhood; all vegetable refuse should be burnt in the kitchen fire. The floors of all rooms, passages, and stairways should be frequently washed with soap and water, and all private courts, alleys, and yards should be flushed with fresh water as often as possible. All dirty walls should be scraped and limewashed. All drains in the neighbourhood of the house should be flushed at short intervals, and all obstructions to the drainage and faults in the drains, which cannot be dealt with by the tenant, should be reported at once to the Health Department in the Guildhall. It is most important that all house drains should be completely disconnected from the sewers. All other offensive nuisances which are not receiving the necessary attention should also be at once reported.

The Public Water supply of the town is now happily above the suspicion of contamination, but no water even from this source should be allowed to stand before being used for drinking purposes, and all water from private wells or other like sources should invariably be boiled before use.

Only sound and fresh flesh of any kind should be used as food, and this should be well cooked. The same remark applies to cooking vegetables of every kind. Unripe or over-ripe fruit should be rigorously avoided. Infants under nine months of age should receive nothing but milk, or milk and water, well boiled, when the milk is from any other source than the mother's breast. All food utensils, and especially milk vessels and babies' feeding bottles, should be well washed and soaked before use, in clean, and, if possible, boiling water.

A qualified medical man should be at once called in to every case of severe bowel disturbance. It is a wise precaution to disinfect with strong solution of carbolic acid the bowel discharges of all Diarrhœa patients, before placing them in the closet pail. All articles or material soiled with such discharges should be at once soaked and cleansed with the same solution.

After it has been ascertained that a patient is suffering from Asiatic Cholera, it is essential that the strictest isolation should be maintained at home or in hospital, and that all discharges from the patient's body should be disinfected and placed in a separate receptacle, which will be provided and scavenged by the Corporation; and, further, that all articles soiled with such discharges should be promptly disinfected, or destroyed by fire. Persons attending upon Cholera patients should not touch with their hands, their own or other persons' faces, or any food or food utensil

intended for their own, or other unaffected person's use. Any case suspected to be one of Cholera should be at once notified to me at the Health Department in the Guildhall.

Diarrhœa mixture may be obtained without payment, by poor persons, at the Police Stations of the Borough, or in the Health Department of the Guildhall.

PHILIP BOOBBYER,

Guildhall, Nottingham. *Medical Officer of Health.*

City of Nottingham. Prevention of Tubercular Consumption.

This disease is infectious, and liable to spread among persons living in contact with those suffering from it.

Where the lungs are principally affected, the spit of the patients contains most of the poison. This should be received into a vessel containing a strong solution of Carbolic Acid (1 of Carbolic to 20 of Water), and all washing materials and utensils soiled by the patients should be soaked in the same solution before being washed.

Consumptive patients should always sleep alone.

The rooms of consumptive patients should be aired every day, and disinfected and cleaned at least once a month.

In case of the death or removal of any consumptive patient, the Health Department will undertake the disinfection of the infected house and materials.

PHILIP BOOBBYER,

Guildhall, Nottingham. *Medical Officer of Health.*

Nottingham Corporation. Bagthorpe Hospital. Scarlet Fever.

To Parents, Guardians, and others.

Although every care is exercised to prevent the carriage of infection by persons discharged from Bagthorpe Hospital, it is impossible in some instances to insure against such an accident, for no one can say with certainty how long scarlet fever may lurk in the system. Parents and others are warned against allowing recently discharged patients to come into unnecessarily intimate contact with others. No person discharged from a Fever Hospital should be allowed to sleep in the same bed as another until at least a fortnight after discharge. A short holiday in the country, with plenty of fresh air, apart from others, is always desirable after convalescence from scarlet fever. But all persons recovering from scarlet fever should be warmly clothed, and otherwise protected against cold. Any recently discharged person who complains of sore throat, nose, or ears, or who has a breaking out on the skin, should be at once isolated, and placed under the care of a medical man. In any case the Corporation cannot accept responsibility or liability for the outbreak of infection occurring among the companions of persons recently discharged from hospital.

PHILIP BOOBBYER, M.B.,

Medical Superintendent.

Official Notice under the Shop Hours Acts, 1892 to 1895, to amend the Law relating to the Employment of Young Persons in Shops.

NOTICE IS HEREBY GIVEN that, under the above Acts, a young person cannot be employed in or about a shop for a longer period than seventy-four hours, including meal times, in any one week.

A young person cannot, to the knowledge of his employer, be employed in a shop who has been previously on the same day employed in any factory or workshop, as defined by the Factory and Workshop Act 1878, for the number of hours permitted by the said Acts, or for a longer period than will, together with the time during which he has been so previously employed, complete such number of hours.

In every shop in which a young person is employed a notice must be kept exhibited by the employer in a conspicuous place, referring to the provisions of these Acts, and stating the number of hours in the week during which young persons may lawfully be employed therein. If any employer fails to keep exhibited this notice in the manner required, he is liable to a fine not exceeding forty shillings.

Where any young person is employed in or about a shop contrary to the provisions of these Acts, the employer will be liable to a fine not exceeding one pound for each person so employed.

The council of any county or borough, and in the city of London the common council, may appoint such inspectors as they may think necessary for the execution of these Acts within the areas of their respective jurisdictions, and sections 68 and 70 of the Factory and Workshop Act, 1878, shall apply in the case of any such inspector as if he were appointed under that Act, and as if the expression "Workshop," as used in those sections, included any shop within the meaning of these Acts.

In these Acts, unless the context otherwise requires, "Shop" means retail and wholesale shops, markets, stalls, and warehouses, in which assistants are employed for hire, and includes licensed public-houses and refreshment houses of any kind.

"Young person" means a person under the age of eighteen years.

Other words and expressions have the same meanings respectively as in the Factory and Workshop Act, 1878.

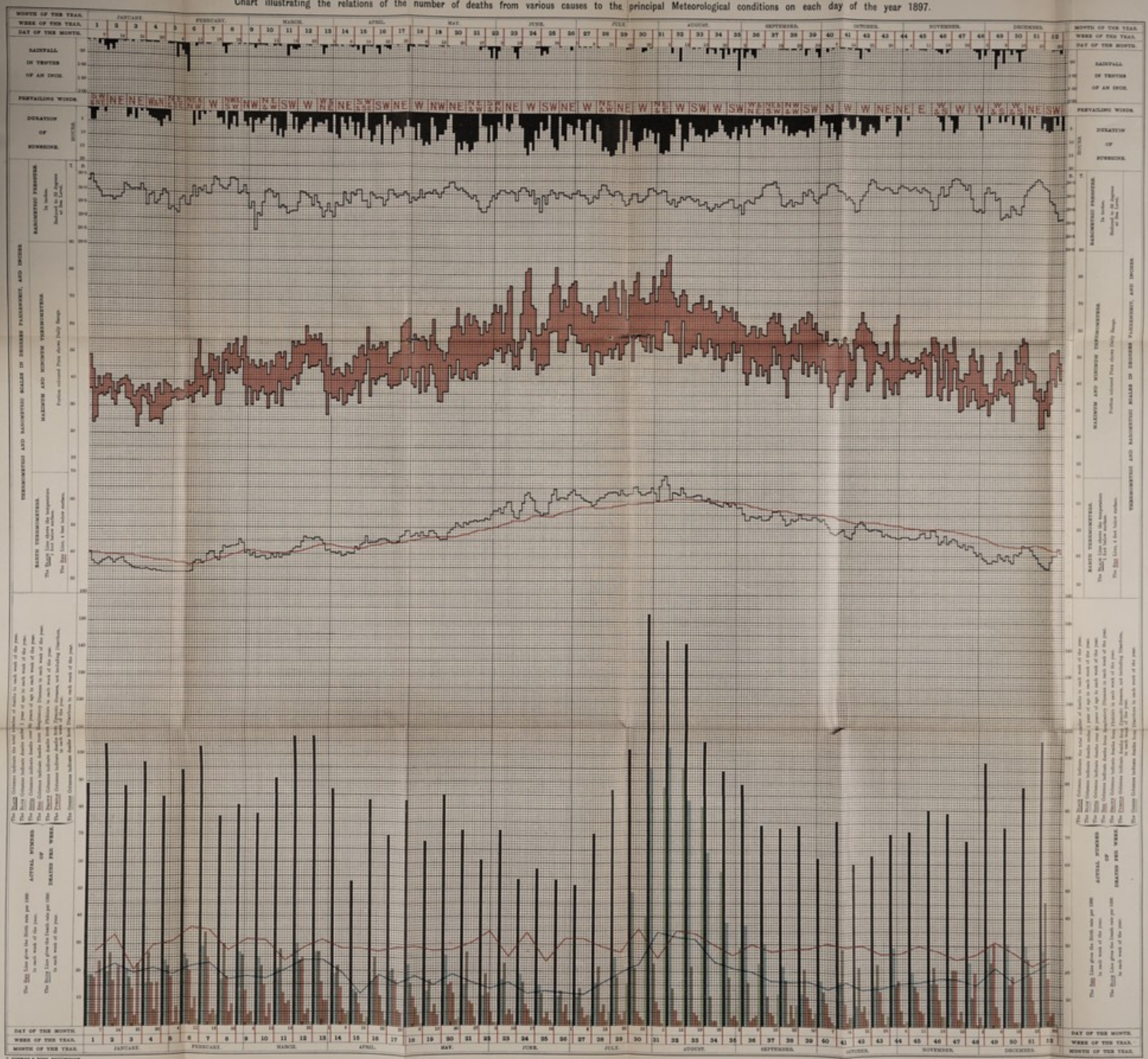
Nothing in these Acts applies to shops where the only persons employed are members of the same family dwelling in the building of which the shop forms part, or to which the shop is attached, or to members of the employer's family so dwelling, or to any person wholly employed as a domestic servant.

And Notice is hereby given that no young person can be employed in or about these premises for a longer period than seventy-four hours, including meal times, in any one week.

CONTENTS.

City of Nottingham.

Chart illustrating the relations of the number of deaths from various causes to the principal Meteorological conditions on each day of the year 1897.



T. FORMAN & SONS, NOTTINGHAM.

The actual number of Deaths from Epidemic Influenza is indicated by a vertical Black Line in the column representing Deaths from Respiratory Diseases.

Estimated Population of the City, middle of 1897, 232,935.
" " " 1896, 231,139.
Area of the City ... 10,935 acres.

Total Births during the year, 6,714.
Birth Rate per 1000 of population per annum, 29·0

Total Deaths, 4,380.
Death Rate per 1000 of population per annum, 19·0.

ARTHUR BROWN, M. Inst. C.E., City Engineer.

PHILIP BOOBBYER, M.B., Medical Officer of Health.