[Report 1905] / Medical Officer of Health, Scarborough Borough.

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BOROUGH OF SCARBOROUGH.

ANNUAL REPORT

ON

THE HEALTH SANITARY CONDITION &c.

1905

OF THE

Borough of Scarborough

For the Year 1905

BY

JOHN KNIGHT M.D., D.P.H., Camb.

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Medical Superintendent of the Corporation Sanatorium and Small-Pox Hospital.

Medical Adviser to the Education Committee

BOROUGH OF SCARBOROUGH.

STATISTICAL MEMORANDA FOR 1905.

Area (inclusive of area covered by water	2,562 acres.
Resident Population at Census, 1901	38,161
Resident Population, 1905	40,180
Birth Rate per 1,000 living	20·83
Resident Death Rate	13·38
Corrected Resident Death Rate	**12·78**
Total Zymotic Death Rate	1·09
Infantile Death Rate	100·3
Average number of Persons per Inhabited House .... Census, 1901.	4·4

Health Department,

King Street, Scarborough,

22nd March, 1906.

To the Town Council of the Borough of Scarborough.

Gentlemen,

In submitting to you my First Annual Report on the Health, Sanitary Condition, etc. of the Borough, I would gratefully acknowledge the courteous consideration you have shewn me since my appointment.

My thanks are due to Mr. Bastiman and the Office Staff, and to Miss Pavyer and the Nursing Staff, for the loyal and able assistance they have rendered during the year.

I have the honour to be, Gentlemen,

Your obedient Servant,

JOHN KNIGHT.

BOROUGH OF SCARBOROUGH.

ANNUAL REPORT.

VITAL STATISTICS

POPULATION.

The resident population estimated to the middle of the year, forming the basis of the vital statistics, is in round numbers 40,180, shewing an increase of 480 on that of 1904.

The "natural increase," or excess of births over deaths, is 299.

This estimation assumes that the population increases like a sum of money at compound interest; the Census population representing the sum, and the annual rate of increase in the previous inter-censal period, the interest.

While the rate of increase of the whole Town probably conforms closely to this rule, the various Ward populations shew a wide departure from it.

The Central and East Wards are incapable of further expansion, and the other Wards increase at different rates.

Each Ward population is estimated as follows:—To the number of houses in the Ward, as ascertained from the Census, is added the number since certified by the Surveyor. This total is multiplied by the ratio of persons per house, which the Census returns also furnish, and the result gives the population.

males and females born, the number of illegitimate births, and the Ward distribution of the total and illegitimate births :—

NUMBER OF BIRTHS REGISTERED PER MONTH.

Month.	Males.	Females.	Total.	Illegitimate.		
				Males.	Females.	Total.
January	33	37	70	5	3	8
February	28	40	68	6	4	10
March	31	28	59	4	1	5
April	24	30	54	4	2	6
May	35	39	74	6	3	9
June	32	41	73	2	2	4
July	34	32	66	2	9	11
August	29	52	81	1	4	5
September	30	38	68	2	8	10
October	42	48	90	3	3	6
November	33	40	73	2	1	3
December	34	27	61	3	1	4
Totals	385	452	837	40	41	81

WARD DISTEIBUTION OF BIRTHS, 1905.

Whole Town.	N.W	N.	C	E.	W.	S.
837.	245	123	106	184	145	34

ILLEGITIMATE BIRTHS.

Whole Town.	N.W.	N.	C.	E.	W.	S.
81	33	12	8	16	11	1

Total Births ... ... = 837
Total deaths under 1 year ... ... = 84
Infantile death-rate ... ... = 100·3 per 1000 births.
Birth-rate ... ... = 20·83 per 1000.
Percentage of Illegitimate to Total Births ... = 9·6%

MARRIAGES.

There were 314 marriages registered during the year, as compared with 363 in 1904. The marriage-rate is therefore 15·6 per 1,000, as compared with 18·2 in the previous year.

DEATHS.

The total number of deaths registered in the Borough during 1905 was 556.

From this number 24 non-resident deaths have to be deducted, and 6 deaths of residents in the Sanatorium have to be added, making the nett resident deaths 538. The crude death-rate is therefore 13·38 per 1,000 compared with 14·68 in the two preceding years.. By the application of the "factor of correction" previously alluded to, the "corrected" resident death-rate is found to be 12·78 per 1,000.

In the last column of Table I of the returns of the Local Government Board, the nett resident death-rate is given as 13·66.

For the purposes of this Table, however, only the deaths of non-residents in Institutions have to be deducted, while in calculating the nett death-rate of the Borough I have followed the uniform practice of my predecessors

Of the nett deaths, 288 were females and 250 males, the respective death-rates per 1,000 living of each sex being 12·4 and 14·7. The subjoined Table shews the number of deaths at the various age-periods in 1904 and 1905.

DEATHS AT VARIOUS AGE-PERIODS.

	Under 5 years.	5 to 15 years.	15 to 25 years.	25 to 65 years.	65 years and upwards.	All Ages.
1904	155	20	21	177	210	583
1905	109	7	26	178	218	538
	−46	−13	+5	+1	+8	−45

It will be observed that the saving of life during 1905 has been chiefly effected at the earlier ages.

QUARTERLY DEATHS ARRANGED IN AGE-PERIODS.

Of the total deaths (556) registered in the Borough, 157 occurred in the first quarter, 120 in the second, 148 in the third, and 131 in the fourth.

The deaths under 1 year were least in the first quarter, and greatest in the third the diarrhoeal period.

The deaths at advanced ages chiefly occurred in the colder months, *i.e.* first and fourth quarters.

DEATHS IN EACH QUARTER, 1905.

	All Ages.	Under 1 year.	1 to 5 years.	5 to 15 years.	15 to 25 years.	25 to 65 years.	65 years and over.
1st Quarter..	157	14	9	5	7	49	73
2nd ,,	120	18	7	1	9	42	43
3rd ,,	148	29	3	0	1	59	46
4th ,,	131	22	5	2	2	40	60
	556	83	24	8	29	190	222

WARD DISTRIBUTION OF DEATHS.

The deaths occurring in the Workhouse and its Infirmary in the North West Ward, and in the Hospital in the Central Ward, unduly inflate the death returns of these Wards, and unduly diminish those of the other Wards. In the subjoined Table the corrected death returns for each Ward are given, the correction being made as follows. From the total resident deaths in the N.W. and C. Wards the resident deaths in public institutions are deducted. Each of the deaths so deducted is assigned to the Ward in which the previous home of the deceased was situated.

The changes produced by this correction may be seen from the following Table.

DEATHS IN WARDS.

	N.W,	N.	C.	E.	W.	S.
Uncorrected.....	152	72	101	86	84	43
Corrected	121	88	82	114	89	44
Correction	− 31	+ 16	− 19	+ 28	+ 5	+ 1

This method of correction has been described at some length, as it has not been carried out in previous years.

INFANTILE MORTALITY.

There were 84 deaths of children under 1 year of age, in or belonging to the Borough, as compared with 120 in 1904. The infantile death rate, *i.e.*, the deaths of children under 1 year of age, per 1,000 births registered, is 100·3, by far the lowest rate ever recorded in the Borough.

WARD DISTRIBUTION OF INFANTILE DRATHS.

Whole Town.	N.W.	N.	C.	E.	W.	S.
84	17	7	18	19	17	6

Of the 84 deaths, 17 occurred within the first week of life, 30 within the first month, 57 within the first six months, and 27 beyond the age of six months. Thus more deaths occurred within a month of birth than during the second quarter, or the second half of the first year of life.

The principal causes of the infantile mortality were as follows :—

Premature births	17	21
Congenital Defects	4	
Atrophy, Debility	13	
Diarrhœa	12	
Convulsions	7	
Enteritis	5	

Eight of the infantile deaths were the subject of an inquest.

The question of the Infantile Mortality will form the subject of a special report, so that it need not be enlarged upon here.

Deaths at Higher Ages.—Of the 538 resident deaths no less than 218, or 40·5%, occurred at the age of 65 and upwards, compared with 36·4% in 1904.

The numbers living at these higher ages, constitute about 6·3% of the whole population, and this small proportion furnished nearly one-half of the total deaths.

Eighty-six deaths occurred between the ages of 65 and 75, 108 between 75 and 85, and 24 above 85.

DEATHS AT HIGHER AGES.

65 to 75 years	86
75 to 85 ,, ...	108
Above 85 ,, ...	24

Deaths over 85 Years

85 years	8
86 ,, ...	6
87 ,, ...	3
88 ,, ...	3
89 ,, ...	2
90 ,, ...	1
92 ,, ...	1
	24

THE PRINCIPAL CAUSES OF DEATH.

The principal causes of Death during the year were Diseases of the Heart, Cancer, Phthisis, Old Age, Bronchitis, Pneumonia, Diarrhœal Diseases.

Diseases of the Heart.—There were 90 deaths due to the different varieties of heart disease. These deaths occurred chiefly at the higher ages of life.

Cancer.—45 deaths were ascribed to this cause, giving a death-rate of 1.1 per 1,000.

This unduly high rate is largely owing to the excessive proportion of the population living at the higher age-periods. Cancer affects chiefly the decline of life, as the following table shews:—

Deaths from Cancer.

35 to 45 years.	Under 55 years.	Under 65 years.	Under 75 years.	Under 85 years.	Over 85 years.
8	7	9	12	7	2

Phthisis.—39 residents died from this disease, which claims its victims chiefly at the period of full vital activity, thus differing markedly from Cancer.

Deaths from Phthisis.

15 to 25 years.	Under 35 years.	Under 45 years.	Under 55 years.	Under 65 years.	Under 75 years.	Under 85 years.
8	9	9	7	3	2	1

OLD AGE.—32 of the deaths over 65 years were ascribed solely to this cause.

BRONCHITIS caused 29 deaths, which occurred almost entirely in infancy and old age.

PNEUMONIA accounted for 28 deaths, which shewed a similar distribution to those from Bronchitis, although the limitation to the extremes of life was not so marked.

DIARRHŒAL DISEASES.—The deaths from this cause are practically limited to the first year of life, and the decrease in the infantile death-rate this year, is largely due to the diminished prevalence of diarrhœa. 22 deaths occurred, compared with 41 in 1904. Of these, 16 occurred under 1 year, compared with 35 in 1904.

DEATHS IN INSTITUTIONS.—Seventy-two Residents died in public institutions during the year, namely, 42 in the Workhouse, 24 in the General Hospital, and 6 in the Sanatorium.

ZYMOTIC DEATHS.—There were in all 44 deaths from Zymotic Diseases, of which 8 were from Notifiable, and 36 from non-notifiable Zymotics.

Notifiable Zymotics.		Non-Notifiable Zymotics.	
Scarlet Fever	3	Measles	1
Diphtheria	2	Whooping Cough	6
Enteric Fever	1	Diarrhoeal Diseases	22
Puerperal Fever	1	Influenza	7
Erysipelas	1		
	8		36

The total Zymotic death-rate is therefore 1·09 per 1,000, compared with 1·43 in 1904.

The Zymotic death-rate proper, *i.e.*, the death-rate from the Seven Principal Zymotics (Smallpox, Scarlet Fever, Diphtheria, Enteric Fever, Measles, Whooping Cough, and Diarrhœa), is ·86 per 1,000, a very low rate.

PHTHISIS DEATH-RATE.—There were 39 deaths from Phthisis (Consumption) during the year, the same number as in 1904.

The Phthisis Death-rate is ·96 per 1,000, compared with ·98 in 1904, and is a very low one for an Urban District.

INQUESTS.

Inquests were held regarding 31 deaths, to which Visitors contributed 5. The causes of death may be classified as follows:—

	Total.	Visitors.
Syncope	7	2
Other Heart Diseases	5	0
Suicide	2	0
Drowning	2	1
Accidents	7	1
Other Causes	8	1
	31	5

INFECTIOUS DISEASES.

Ninety-nine Certificates of Infectious Disease, under the Notification Act, were received during the year, as compared with 152 in 1904; a highly satisfactory decrease. The number of each disease notified in 1904 and 1905, was as follows :—

Year.	Scarlet.	Diphtheria.	Enteric.	Erysipelas.	Puerperal Fever.
1904	93	16	16	24	1
1905	54	14	10	20	1
Decrease	39	2	6	4	0

The distribution of the cases in the various Wards is shewn in the following Table :—

NOTIFICATIONS OF INFECTIOUS DISEASE.

Disease.	Whole Town.	N.W.	N.	C.	E.	W.	S.
Scarlet Fever (Four imported).	54	11	12	16	6	6	3
Enteric Fever (3 imported).	10	...	1	5	2	...	2
Puerperal Fever	1	1	...	...	...	..	...
Diphtheria	14	5	3	2	...	2	2
Erysipelas	20	5	5	2	5	3	...
Totals	99	22	21	25	13	11	7

The periods of life at which the various diseases occurred are shewn below :—

Disease.	All Ages.	Under 1 year.	1 to 5 years.	5 to 15 years.	15 to 25 years.	25 to 65 years.	Above 65 years.
Scarlet Fever	54	...	15	27	9	3	...
Enteric Fever	10	...	1	3	2	4	...
Puerperal Fever	1	...	...	...	1	...	...
Diphtheria	14	1	1	9	3	...	...
Erysipelas	20	2	..	2	3	12	1
Totals	99	3	17	41	18	19	1

SCARLET FEVER.—The diminution of infectious disease during 1905 is largely due to the lessened prevalence of Scarlet Fever, 54 cases having been notified compared with 93 in 1904.

Four of the cases were imported, 47 or 87% of the total cases were removed to the Sanatorium, where three deaths occurred.

No cases were attributed to infected milk or school influence.

ENTERIC FEVER.—There were 10 cases of Enteric Fever notified, of which 3 were imported. Seven or 70% of the total were removed to the Sanatorium, and 2 deaths occurred. There was no evident association between the cases.

DIPHTHERIA.—Fourteen cases of Diphtheria were notified, compared with 16 in 1904. Six of these were connected with the infant department of a school.

Eleven cases or 78% were removed to the Sanatorium, where 2 deaths occurred.

In this, as in other infectious diseases, the chief agent in spreading infection is the mild unrecognised case.

NON-NOTIFIABLE INFECTIOUS DISEASE.

A complete return of this class of disease is unattainable, but the following numbers were notified by the School Authorities during the year :—

Chickenpox.	Measles.	Whooping Cough.	Mumps.
85	45	23	3

In practically all these diseases the infant department of a school is the one chiefly affected. A definite, though limited, outbreak of Measles occurred in one school

NOTIFICATION OF PHTHISIS PULMONALIS, 1905.

It is much to be regretted that the Voluntary Notification of Consumption, instituted at the beginning of 1904, is making no headway.

Only 12 notifications have been received during 1905, compared with 25 in 1904.

Disinfection after a death from this cause is the very minimum precaution that can be taken, yet the prejudice against this procedure is evident from the following Table :—

TOTAL DEATHS FROM PHTHISIS, 40.

All information refused	5
Disinfection declined	21
Rooms and clothing disinfected	9
Rooms disinfected privately	5
	40

REMOVALS TO THE SANATORIUM.

Disease.	Whole Town.	N.W.	N.	C.	E.	W.	S.
Scarlet Fever	47	11	11	15	5	2	3
Enteric Fever	7	...	1	4	1	...	1
Diphtheria	11	3	3	1	...	2	2

BACTERIOLOGICAL EXAMINATIONS.

This voluntary branch of work continues to be of service in facilitating the early and correct diagnosis of certain infectious diseases.

The total number of examinations in 1905 was 145, compared with 127 in 1904.

Disease.	Positive.	Negative.	Total.
Diphtheria	11	88	99
Enteric Fever	6	15	21
Tubercle	12	13	25
			145

CLEANSING AND SCAVENGING.

This important branch of sanitary work is carried out by a staff, which varied in number from 92 in the winter to 135 in the summer.

The work naturally falls into the two divisions of (1) street cleansing and (2) removal of refuse.

STREET CLEANSING.—Forty-two miles of street are swept weekly: the main thoroughfares being cleansed twice daily in the winter, and four times in the summer; the side streets three times a week in the winter, and daily in the summer.

The Sands are kept free from broken glass, waster paper, &c., in the summer, by a man specially told off for this purpose.

In the winter they are attended to as occasion requires.

During the year, 9,067 loads of street sweepings, 219 loads of snow, and 1,336 loads of gulley refuse, were removed from the streets.

590 loads of sand, 137 loads of gravel, and 21,750 loads, or 5,682,320 gallons of water, were put on the streets during the year.

REMOVAL OF REFUSE.—The refuse dealt with comprises (1) dry or ashpit refuse, (2) wet or privy refuse, and (3) fish refuse.

During the winter the refuse is collected from every house once a week, and in summer twice.

In the case of the hotels and boarding-houses, the refuse is removed 4 times weekly, or oftener as required.

DISPOSAL OF REFUSE.—(1). The dry refuse is utilised in the making of new roads on the Corporation Estate. Care is taken to have each load carefully covered with earth so as to obviate nuisance.

(2). The wet refuse is despatched by rail to farmers in the district, who employ it as manure.

(3). The fish refuse is mixed at the depôts with the street sweepings, and finds a ready sale as manure.

WATER SUPPLY.

The water supply of Scarborough is derived from Corallian rocks which rest on the Oxford clay. These strata are tapped by deep wells at Irton and Osgodby and by adits in the cliff at Cayton Bay. The waters from these sources present similar characters, and are remarkably constant in chemical composition. The Scarborough water is pure and moderately hard, the hardness being largely "temporary."

Some trouble has been annually experienced with the open reservoir at Osgodby, owing to the growth of algae in the hot months. By the co-operation of the Water Engineer and the Medical Officer of Health, a method was tried which dealt successfully with this difficulty. As a result the reservoir became available at a time when the demand for water was at its maximum.

GENERAL SANITARY WORK.

Cowsheds.—The 28 cowsheds in the Borough were regularly inspected, and were found generally to be kept fairly clean. Overcrowding to a slight extent was found in connection with three cowsheds. Any defects noticed were dealt with by written or verbal notice, but no legal proceedings regarding cowsheds were taken during the year.

Bakehouses.—There are 55 bakehouses on the register, compared with 53 in the previous year. Eleven bakehouses are underground. All were found in a very clean condition, although in two instances the half-yearly whitewashing had been somewhat delayed. The defects found were not of a serious nature, and were remedied when attention was called to them by written or verbal notice.

Private Slaughter-Houses.—On the instruction of the Sanitary Committee a special examination of, and report upon, the private slaughter-houses were made, of which the following is the summary:

(1) Of the seven private slaughter-houses, six were established prior to the Local Government Act of 1858.

(2) All the private slaughter-houses were found in a very clean condition.

(3) In each case the situation is objectionable, owing to the close proximity of dwelling-houses.

(4) By their number and distribution throughout the Borough, efficient inspection of meat is hindered.

(5) In the interests of the public health the private slaughter-houses should be abolished, and a public one established by the Local Authority.

Offensive Trades.—An application for permission to establish a tripe-boiling business was made during the year, and the requisite permission was granted, subject to certain structural alterations being carried out to the satisfaction of the Medical Officer of Health.

Conversion of Privies.—Fifty-four notices under the Scarborough Order, 1897, were issued during 1905, compared with 170 in 1904, while 60 privies were converted into water-closets voluntarily.

FACTORIES, WORKSHOPS, LAUNDRIES, WORKPLACES & HOMEWORK.

FACTORY AND WORKSHOP ACT, 1901

By the 132nd Section of this Act, the Medical Officer is required to report upon the administration of the Act as regards Workshops and Workplaces. A copy of such report has to be sent to the Secretary of State.

As is to be expected in a non-manufacturing town, the number of workshops is comparatively small. The most numerous class of workshop is that devoted to dressmaking, millinery, &c.

Generally speaking, the workshops are kept in a satisfactory condition, and no cases of infectious disease occurred in connection with any during the year.

The subjoined Table gives the details of the inspection.

1.—INSPECTION.

INCLUDING INSPECTIONS MADE BY SANITARY INSPECTORS OR INSPECTORS OF NUISANCES.

Premises.	Number of		
	Inspections.	Written Notices.	Prosecutions.
Factories (Including Factory Laundries.)	8	2	...
Workshops (Including Workshop Laundries.)	910	83	...
Workplaces	69	5	...
Homeworkers' Premises	63	...	..
Total	1050	90	...

2.—DEFECTS FOUND.

Particulars.	Number of Defects.			Number of Prosecutions.
	Found.	Remedied.	Referred to H.M. Inspector.	
Nuisances under the Public Health Acts:—				
Want of cleanliness	17	17	...	...
Want of ventilation	...	...	...	...
Overcrowding	...	...	...	...
Want of drainage of floors	...	...	...	...
Other nuisances	54	54	...	...
Sanitary accommodation — insufficient	6	6	...	...
Sanitary accommodation — unsuitable or defective	3	3	...	..
Sanitary accommodation — not separate for sexes	...	..	...	..
Offences under the Factory and Workshop Act:—				
Illegal occupation of underground bakehouse (s. 101)	...	...	...	...
Breach of special sanitary requirements for bakehouses (ss. 97 to 100)	3	3	...	..
Failure as regards lists of outworkers (s. 107)	...	...	..	..
Giving out work to be done in premises which are — unwholesome (s. 108)	...	...	...	...
Giving out work to be done in premises which are — infected (s. 110)	...	...	...	...
Allowing wearing apparel to be made in premises infected by scarlet fever or small-pox (s. 109)	...	..	...	...
Other offences	...	...	...	...
Total	83	83	...	...

3.—OTHER MATTERS.

Class.		Number.	
Matters notified to H.M. Inspectors of Factories :—		12	
Failure to affix Abstract of the Factory and Workshop Act (s. 133)		...	
Action taken in matters referred by H.M. Inspectors as remediable under under the Public Health Acts, but not under the Factory Act (s. 5)	Notified by H.M. Inspectors		
	Reports (of action taken) sent to H.M. Inspectors		
Other		1	
Underground Bakehouses (s. 101) :—			
Certificates granted during year		...	
In use at the end of the year		11	
		Number of	
Homework ;—		Lists.	Outworkers.
Lists of Outworkers (s. 107) :—			
Lists received		39	71
Addresses of outworkers ...	forwarded to other Authorities	1	1
	received from other Authorities	...	..
		Wearing Apparel.	Other.
Homework in unwholesome or infected premises :—			
Notices prohibiting homework in unwholesome premises (s. 108)		...	...
Cases of infectious disease notified in homeworkers' premises		...	...
Orders prohibiting homework in infected premises (s. 110)		...	...
Workshops on the Register (s 131) at the end of the year		—	
Important classes of workshop, such as workshop bakehouses, may be enumerated here.	Laundries	16	
	Bakehouses	55	
	Dressmaking, tailoring and millinery, &c.	120	
	Upholstering and cabinet making	34	
	Other workshops	218	
Total number of workshops on Register		443	

TABLE I.—Vital Statistics of Whole District during 1905 and Previous Years.

Year.	Population estimated to middle of each year.	Births.		Total Deaths Registered in the District.				Total Deaths in Public Institutions in the District.	Death of Non-residents registered in Public Institutions in District.	Deaths of Residents registered in Public Institutions beyond District.	Nett Deaths at all Ages belonging to the District.	
				Under 1 Year of Age.		At all Ages.						
		Number.	Rate.	Number.	Rate per 1000 Births registered	Number.	Rate.				Number.	Rate.
1895	35,574	930	26·1	181	194·6	734	20·6	71	17	..	717	20·1
1896	36,010	946	26·3	125	132·1	583	16·2	54	23	...	560	15·5
1897	36,453	942	25·8	148	157·1	624	17·1	52	22	...	602	16·5
1898	36,900	992	26·9	141	142·1	686	18·6	61	24	..	662	17·9
1899	37,354	959	25·7	157	163·6	724	19·4	87	41	...	683	18·3
1900	37,812	958	25·3	141	147·2	684	18·1	75	20	...	664	17·6
1901	38,277	902	23·6	137	151·9	647	16·9	79	15	...	632	16·5
1902	38,746	884	22·8	112	126·7	626	16·1	83	6	...	620	16·0
1903	39,220	879	22·4	109	124·0	592	15·09	60	18	2	576	14·68
1904	39,700	901	22·6	120	133·1	587	14·78	72	3	4	583	14·68
Averages for years 1895-1904.	37,604	929	24.75	137	147.2	648	17·28	69	19	(6)	630	16.77
1905	40,180	837	20·83	83	99·1	556	13·83	79	13	6	549	13·66

TABLE II.—Vital Statistics of Separate Localities in 1905 and Previous Years.

Year.	Whole Town.				North-West Ward.				North Ward.				Central Ward.				East Ward.				West Ward.				South Ward.			
	Population estimated to middle of each year.	Births registered.	Deaths at all Ages.	Deaths under 1 year.	Population estimated to middle of each year.	Births registered.	Deaths at all Ages.	Deaths under 1 year.	Population estimated to middle of each year.	Births registered.	Deaths at all Ages.	Deaths under 1 year.	Population estimated to middle of each year.	Births registered.	Deaths at all Ages.	Deaths under 1 year.	Population estimated to middle of each year.	Births registered.	Deaths at all Ages.	Deaths under 1 year.	Population estimated to middle of each year.	Births registered.	Deaths at all Ages.	Deaths under 1 year.	Population estimated to middle of each year.	Births registered.	Deaths at all Ages.	Deaths under 1 year.
1895	35574	930	717	174	8204	275	203	46	4935	136	108	28	6346	113	127	18	6460	215	105	37	5145	158	128	43	4484	33	46	2
1896	36010	946	560	119	8463	293	134	27	4952	110	86	19	6372	131	104	20	6375	209	100	31	5230	163	90	21	4618	42	46	1
1897	36453	942	602	151	8726	286	163	41	4972	127	80	21	6398	126	110	25	6290	209	106	34	5315	164	100	27	4752	30	43	3
1898	36900	992	662	139	8990	296	186	38	4989	122	87	16	6424	145	131	25	6205	225	113	33	5400	163	101	23	4892	41	44	4
1899	37354	959	683	151	9250	281	191	43	5010	123	101	24	6453	123	131	28	6120	221	130	31	5485	163	79	24	5036	48	51	1
1900	37812	958	664	140	9516	271	166	32	5030	146	102	25	6485	120	146	30	6035	197	110	33	5570	184	104	17	5176	40	36	3
1901	38277	902	632	131	9790	260	160	31	5050	130	112	21	6516	112	110	21	5960	195	95	31	5655	171	97	23	5316	34	58	4
1902	38746	884	620	103	9920	250	185	28	5166	112	90	10	6460	112	106	12	5990	186	97	23	5760	178	89	23	5450	46	53	7
1903	39220	879	576	109	9980	251	159	25	5360	117	94	22	6470	126	95	13	5980	196	102	28	5880	163	84	18	5550	26	42	3
1904	39700	901	583	120	10000	270	140	26	5570	163	91	16	6470	104	125	32	5990	148	71	19	6000	167	99	23	5670	43	57	4
Averages of Years 1895 to 1904.	37604	929	630	137	9284	274	169	34	5103	129	95	20	6439	121	118	22	5140	200	103	30	5544	167	97	24	5094	38	48	3
1905	40180	837	549	84	10034	245	152	17	5973	123	76	7	6450	106	102	18	5972	184	89	19	6018	145	84	17	5733	34	46	6

TABLE III.—Cases of Infectious Disease Notified during the Year 1905.

Notifiable Disease.	Cases Notified in Whole District.							Total Cases Notified in Each Locality. (Wards.)						No. of Cases Removed to Hospital from Each Locality. (Wards.)						
	At all Ages.	Under 1.	1 to 5.	5 to 15.	15 to 25.	25 to 65.	65 and upwards.	(W.) N.W.	N.	C.	E.	W.	S.	Whole Town.	(W.) N.W.	N.	C.	E.	W.	S.
Smallpox	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	..
Cholera	...	...	...	...	..	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Diphtheria	14	1	1	9	3	...	...	5	3	2	...	2	2	11	3	3	1	...	2	2
Membranous Croup.	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Erysipelas	20	2	...	2	3	12	1	5	5	2	5	3	...		...	...	...	...	...	...
Scarlet Fever	54	...	15	27	9	3	...	11	12	16	6	6	3	47	11	11	15	5	2	3
Typhus Fever	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Enteric Fever	10	...	...1	3	2	4	...	...	1	5	2	...	2	7	...	1	4	1	...	1
Relapsing Fever	...	...	...	...	...	...	...	...	...	...	...	...	...	..	...	...	...	...	...	...
Continued Fever	...	..	...	...	..	...	...	...	...	...	...	...	...	..	...	...	...	...	...	...
Puerperal Fever	1	...	...	...	1	...	..	1	...	...	...	...	...	...	...	..	..	...	...	...
Plague	...	...	...	...	..	...	...	...	...	...	..	...	...	...	...	...	...	...	...	...
Phthisis (Voluntary)	12	...	...	...	5	7	...	3	2	1	4	2	...	...	...	..	...	...	...	...
Totals	111	3	17	41	23	26	1	25	23	26	17	13	7	65	14	15	20	6	4	6

TABLE IV.—Causes of, and Ages at, Death during Year 1905.

Causes of Death.	Deaths at the subjoined ages of "Residents" whether occurring in or beyond the District.							Deaths at all ages of "Residents" belonging to Localities, whether occurring in or beyond the District.							Total Deaths whether of Residents or "non Residents" in Public Institutions in the District.
	All Ages.	Under 1 year.	1 and nuder 5.	5 and under 15.	15 and under 25.	25 and under 65.	65 and upwards.	Whole Town.	N.W.	N.	C.	E.	W.	S.	
Small-pox	...	..	...	..	...	...	...	...	...	...	...	...	...	..	...
Measles	1	1	..	...	...	...	...	1	...	...	1	..	.	...	...
Scarlet Fever	3	...	2	1	...	...	...	3	2	...	1	...	...	...	...
Whooping-cough	6	3	3	...	..	...	...	6	...	3	..	2	1	...	...
Diphtheria and Membranous Croup	2	1	...	1	..	...	...	2	...	2	...	..	...	...	...
Croup	...	...	...	...	...	...	..	...	...	..	...	...	..	..	..
Chicken-pox	2	2	...	...	.	...	...	2	1	...	1	...	..	...	...
Fever (Typhus)	...	...	...	...	...	...	...	...	...	...	...	..	...	...	...
Fever (Enteric)	1	...	...	...	...	1	...	1	...	...	1	...	...	...	...
Fever (Other continued)	..	...	...	..	...	...	...	..	...	...	...	...	...	...	...
Epidemic Influenza	7	...	...	...	...	4	3	7	1	2	...	2	2	..	...
Cholera	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Plague	..	...	...	...	...	...	..	.	...	...	...	...	..	...	...
Diarrhœa	12	11	...	...	...	...	1	12	4	1	2	3	2	..	...
Enteritis	10	5	2	...	1	...	2	10	3	1	1	3	2	...	1
Puerperal Fever	1	...	...	...	1	...	...	1	1	...	...	...	...	...	...
Erysipelas	1	1	..	...	...	...	...	1	1	..	...	...	...	...	...
Other Septic Diseases	3	...	..	...	..	...	3	3	1	...	...	2	...	..	1
Phthisis, (Pulmonary Tuberculosis)	39	...	...	...	9	27	3	39	11	7	9	5	6	1	4
Other Tubercular Diseases	8	...	1	...	4	3	...	8	1	...	4	2	..	1	3
Cancer, malignant disease	45	...	..	...	...	24	21	45	7	10	11	5	4	8	5
Bronchitis	29	5	3	...	...	6	15	29	12	4	7	3	3	..	6
Pneumonia	28	3	6	2	...	6	11	28	7	3	8	4	6	..	5
Pleurisy	3	..	...	...	...	1	2	3	1	...	..	1	...	1	...
Other Diseases of Respiratory Organs	5	1	...	...	...	3	1	5	2	...	...	2	...	1	1
Alcoholism / Cirrhosis of Liver	14	...	...	...	...	8	6	14	4	4	2	...	2	2	...
Venereal Diseases	5	2	1	...	...	2	...	5	3	...	...	2	...	...	2
Premature Birth	17	17	...	...	...	...	...	17	1	2	4	3	3	4	...
Diseases and Accidents of Parturition	5	...	...	...	...	5	...	5	1	1	..	1	2	...	...
Heart Diseases	92	..	...	...	4	37	51	92	27	14	14	14	15	8	5
Accidents	8	1	...	1	1	4	1	8	1	...	4	1	1	1	3
Suicides	2	..	...	...	1	1	...	2	1	.	...	...	...	1	1
Marasmus	11	10	1	..	...	...	...	11	2	...	5	2	2	...	4
Meningitis	10	2	5	1	1	1	...	10	2	2	...	3	3	...	...
Diseases of Blood Vessels	8	..	...	...	...	1	7	8	2	2	...	1	...	3	2
Old Age	32	...	...	...	...	...	32	32	19	4	1	4	4	...	12
All other causes	141	19	3	1	7	51	60	141	35	14	27	24	26	15	24
All causes	549	84	27	7	28	185	218	549	152	76	102	89	84	46	79

TABLE V.—Infantile Mortality during the Year 1905.

Deaths from stated Causes in Weeks and Months under One Year of Age.

CAUSE OF DEATH.		Under 1 week.	1-2 Weeks.	2-3 Weeks.	3-4 Weeks.	Total under 1 Month.	1-2 Months.	2-3 Months.	3-4 Months.	4-5 Months.	5-6 Months.	6-7 Months.	7-8 Months.	8-9 Months.	9-10 Months.	10-11 Months.	11-12 Months.	Total Deaths under One Year.
All Causes.	Certified	16	4	2	5	27	3	5	7	4	5	4	6	3	2	10	...	76
	Uncertified	1	..	1	1	3	1	...	1	1	...	1	...	...	1	...	...	8
Common Infectious Diseases.	Small-pox	...	...	...	...	...	...	...	...	...	...	..	...	..	...	...	...	..
	Chicken-pox	..	...	...	...	...	...	...	1	...	..	...	...	..	...	1	..	2
	Measles	...	..	...	...	...	...	..	...	1	...	...	...	...	...	...	...	1
	Scarlet Fever	...	...	...	...	...	..	..	...	...	...	...	...	...	..	..	...	...
	Diphtheria: Croup	...	..	...	...	...	...	...	...	...	...	...	...	..	...	1	...	1
	Whooping Cough	...	...	...	..	...	...	...	...	...	...	...	..	1	...	2	...	3
Diarrhœal Diseases.	Diarrhœa, all forms	..	..	...	1	1	1	...	2	...	2	2	1	2	...	1	...	12
	Enteritis (*not Tuberculous*)	...	...	1	1	2	...	...	1	...	1	...	1	...	...	...	...	5
	Gastritis, Gastro-intestinal Catarrh	...	...	...	...	...	...	...	...	...	...	...	...	..	..	..	...	...
Wasting Diseases.	Premature Birth	15	...	...	1	16	...	1	...	...	...	...	...	...	...	...	...	17
	Congenital Defects	1	1	1	...	3	...	1	..	...	...	...	...	..	...	...	...	4
	Injury at Birth	...	...	...	...	...	.	...	...	...	...	..	...	...	...		...	...
	Want of Breast milk	...	...	...	...	...	...	...	..	..	...	...	...	..	..	..	...	...
	Atrophy, Debility, Marasmus	1	1	1	...	3	2	2	3	...	2	...	..	...	...	1	...	13
Tuberculous Diseases.	Tuberculous Meningitis	...	.	...	...	...	...	...	...	...	...	...	...	...	..	...	...	...
	Tuberculous Peritonitis: Tabes Mesenterica	...	...	...	..	...	...	..	..	...	...	...	...	...	...	...	...	...
	Other Tuberculous Diseases	...	...	...	...	..	...	...	...	...	...	..	..	...	..	...	...	...
	Erysipelas	...	...	...	...	..	...	...	...	...	..	...	1	...	...	...	...	1
	Syphilis	...	..	.	1	1	1	...	...	...	...	...	...	...	..	...	...	2
	Rickets	...	..	...	...	..	...	...	...	...	..	...	...	...	. .	1	...	1
	Meningitis (*not Tuberculous*)	...	...	...	...	...	...	...	...	...	...	. .	1	...	...	1	...	2
	Convulsions	...	1	...	1	2	...	...	1	2	...	2	...	..	...	...	..	7
	Bronchitis	...	...	...	...	...	...	...	...	1	...	...	...	...	1	2	...	4
	Laryngitis	...	...	...	..	...	...	...	...	...	...	...	...	...	...	...	...	...
	Pneumonia	..	...	...	...	...	..	1	..	1	...	...	1	...	...	...	...	3
	Suffocation, overlaying	...	...	...	...	...	...	..	...	...	...	...	...	..	...	...	...	...
	Other Causes	...	1	...	1	2	..	...	...	...	...		1	...	2	...	...	6
		17	4	3	6	30	4	5	8	5	5	5	6	3	3	10	...	84

METEOROLOGICAL REPORT.

Mr. W. W. Larkin, the Borough Meteorologist, has kindly furnished me with the following report on the weather of the past year:—

The observations are taken each day at 9 a.m. and 9 p.m.

The instruments in use have all been verified at KEW OBSERVATORY, and at each observation they are corrected for all errors.

The SCARBOROUGH OBSERVATORY is a STATION of the ROYAL METEOROLOGICAL SOCIETY.

The height of the Barometer Cistern above Mean Sea-Level is 126·86 feet.

The readings of the Barometer are reduced to 32° Fahrenheit and to Mean Sea-level.

The RAIN GAUGE is 5 inches in diameter and 1 foot above the ground Its rim is 63 feet above Mean Sea-level. And all rain that falls, in quantity, equal to or exceeding 0·1, is carefully measured.

The instrument in use for registering the amount of SUNSHINE is a Stoke's Sunshine Recorder. **The sun must not only shine, but it must shine with a sufficient brightness to burn the card.**

The force of the Wind is estimated in accordance with Beaufort's Scale:—from 0 (calm) to 12 (hurricane).

TIME OF HIGH WATER and HEIGHT OF TIDES with SET OF TIDAL STREAMS, are carefully computed, and may be accepted as strictly reliable. These particulars appear in the "Daily Meteorological Report" and also in the "Scarborough Evening News."

TIME OF SUNRISE and SUNSET, with LENGTH OF DAY and LENGTH OF NIGHT at Scarborough is computed by the formula:—

$$\frac{\text{Tangent of Latitude} \times \text{Tangent Declination.}}{\text{Radius.}} = \text{Co-sine of X.}$$

Then X is corrected for Longitude and increased length of Apparent Day over the Astronomical Day. This also appears in the "Daily Reports," and also in the "Evening News."

The EARTH THERMOMETER is read every morning (9 a.m.), and is 3 feet below the surface.

Month.	Average height of Barometer in inches.	Average Temperature of the Air.	Average Temperature Wet Bulb.	Average Dew Point.	Average Humidity of the Atmosphere.	Elastic Force of the Atmosphere.	Average Maximum in Screen.	Average Minimum in Screen.	Average Earth Theremometer 3 feet.	Average height of Black Bulb.	Average height of Bright Bulb.	Average Force of the Wind.	Average Amount of Clouds.	Total Amount of Sunshine.	Total Amount of Rain in Inches.
	A.M.	A.M.	A.M.	A.M.	A.M.	A.M.	P.M.	P.M.	P.M.	P.M.	P.M.	A.M.	A.M.	H.M.	
January ...	30·166	38·8	36·8	34·1	84	·199	45·6	35·1	40·9	59	50	3·7	6·5	62·39	·62
February ...	30·050	39·7	37·5	34·4	82	·204	46·3	35·8	40·6	69	54	3·6	6·5	70·44	1·30
March	29·616	43·5	41·4	38·9	85	·239	50·3	38·5	41·6	89	64	3·2	6·6	148·13	1·86
April	29·819	44·8	42·2	39·3	82	·245	50·2	38·2	44·2	92	65	3·8	7·6	109·53	1·62
May	30.105	52·0	48·2	44·5	77	·298	57·5	44·1	48·0	103	75	3·5	6·7	180·54	1·00
June	29.974	56·4	53·6	50·3	81	·372	62·4	49·8	53·9	112	80	3·8	7·4	195·24	·56
July	29·99	64·8	58·9	53·6	69	427	70·2	55·4	59·1	121	85	2·9	6·4	228·54	·78
August ...	29·829	59·7	55·5	51·8	76	·388	65·1	52·7	59·6	111	81	3·3	7·7	156·36	2·71
September ...	29.935	56·9	53·0	49·5	77	·356	61·7	50·4	57·0	104	76	3·1	7·3	132·46	1·31
October ...	29·962	46·3	43·7	40·8	81	·259	52·5	40·6	52·7	83	63	3·6	7·7	89·51	3·23
November ..	29·659	41·7	40·3	38·6	90	·239	47·1	38·8	46·8	65	53	4·0	7·3	59·48	4·22
December ...	30·142	41·6	40·1	38·2	88	·233	45·9	37·9	43·0	57	49	3·4	7·8	37·40	·39
Mean for Year	29·938	48·9	45·9	42·8	81	·288	54·6	43·1	48·9	89	66	3·5	7·1	1473·22	19·60

The Highest Barometer Reading was on December 12th—30·853.

The Lowest Barometer Reading was on November 26th—28·801.

The Hottest Day (Daily Mean) was July 12th—70·2.

The Coldest Day (Daily Mean) was February 12th—32·9.

The Greatest Rainfall was on November 28th—.92.

WIND.—The prevailing wind of the year has been as usual from S.W. to N.W., which is always a fine weather wind for Scarborough.

SUNSHINE.—There has been 56 hours 29 minutes more sunshine this year than there was in 1904. In this respect Scarborough has been very highly favoured.

RAINFALL.—There has been ·20 inches less rainfall than in the previous year. Two important factors connected with the fall of rain, is the direction of the wind; and the elevation of the land, for the greater the space through which the rain-drops pass, the greater will be those drops when they reach the ground; hence the necessity of knowing the height of the rain gauge above Mean Sea Level.

And to the prevalence of the Westerly Winds we may also, to some extent, attribute the light fall of rain, for as those winds passed over the high lands which lie to our West, they would no doubt lose a great portion of their moisture.

When the air is saturated with moisture and twe masses of clouds of different temperatures meet, then a violent agitation of the atmosphere takes place and we have rain. Hence when we see clouds moving in the opposite directions we may be sure of rain.

MEAN TEMPERATURE OE THE YEAR.—The Mean Temperature for the whole year has just been two tenths higher than the previous year, the Mean Temperature for 1904 being 48·6 and for the year 1905, 48·8.

EQUABLE TEMPERATURE.—I do not believe there is a place in the British Isles that can boast of such an equable temperature as Scarborough. The mean average for the last three years has not differed more than one degree and a half.

OUR CLIMATE.—The equable temperature of England has become proverbial; the factors which produce this blessed result are numerous. Situated as we are in a cold northern latitude, yet we are never so cold as some of the Southern States of America. Neither in the summer time are we as hot as many of the cities of Europe. One factor that helps to produce this modified temperature is our insulated position; the ocean is never as hot as the land in summer, ne ther is it as cold in the winter. Under similar conditions many flowers, fruits and vegetables may be grown earlier near the sea than inland.

W. W. LARKIN,
Borough Meteorologist.

39, Aberdeen Walk,
Scarborough.

THE INSPECTOR'S REPORT, 1905.

(MR. JAMES BASTIMAN, Assoc. Royal San. Inst.)

To the Medical Officer of Health.

Sir,

I have the honour of submitting my Twenty-second Annual Report, giving details of the work done in the abatement of Nuisances, &c.

As in former years, a systematic inspection of Yards, Courts, Passages, Quays, Bolts and Staithes, within the Borough, has been made, and every means taken to keep them in a good sanitary condition.

Wherever nuisances were found to exist, notices were served upon the responsible parties for their abatement.

One thousand and seventy-seven notices were served to abate nuisances, and for improvement in the sanitary conditon of dwelling-houses generally.

Of this number, 617 were preliminary, and 460 legal, whilst of the latter 54 were notices to provide suitable and sufficient water-closet accommodation to dwelling-houses under the Scarborough Order, 1897.

The following Table shews the classification of nuisances dealt with by formal notice :—

TABLE I.

Nature of Nuisanc .	Preliminary.	Legal.	Still on Books.	
			Preliminary.	Legal.
Choked Drains	66	11	..	...
ective Drains	68	14	1	1
,, Water closets	6	...	1	...
,, Soil pipes to water closets	4	1	...	...
,, Ventilation to W.C. soilpipes	1	...	...	...
Soilpipe not ventilated	1	..	...	..
Inadequate ventilation of W.C. soilpipes	4	7	...	4
Water closet not ventilated	1	...	..	...
Defective flushing apparatus to W.C.'s	7	1	...	...
Want of ,, ,, ,,	...	2	..	...
Fallspout connected with drain	1	...	...	...
Defective slopstone and other wastes	6	1	...	...
Defective house roofs	5	4	...	...
,, house flooring	5	4	...	...
,, cellar flooring	1	...	...	...
,, Eave spouts and fallspouts	68	46	2	7
,, Privies	69	33	2	10
,, Ashpits	3	3	...	1
,, Yard or court pavements	101	91	7	11
,, Passage pavements	96	156	7	1
Passage not paved	3	...	...	...
Want of ventilation to dwelling-house	1	1	...	1
Want of sufficient closet accommodation to dwelling-houses	...	60	...	25
Want of sufficient ashpits or dustbins	31	4	11	..
Want of proper manure pits	5	2	.	...
Defective manure pit	1	...	...	...
Accumulations of manure and other refuse	11	2	...	...
Animals so kept as to be a nuisance	7	2	..	...
Sanitary defects in bakehouses	6	2	2	1
Dirty bakehouse	1	...	...	...
,, workshop	6	..	...	...
Foul water closets in workshops	5	...	...	...
Foul water closets	3	...	...	...
,, privies	4	...	...	..
Workshops not properly ventilated	2	...	...	...
Foul Urinal	1	...	...	...
Defective urinal	...	1	..	...
Old rain water cistern abolished	1	1	...	...
Smoke nuisances	...	7	...	...
Premises in such a state as to be a nuisance	16	4	...	..
	617	460	33	62

Grand Total - - 1077.

In eight instances only was it found necessary to institute summary proceedings against persons for contravention of the Public Health Acts, and the Sale of Food and Drugs Acts.

There were two convictions; two cases were dismissed, and four cases were withdrawn. In one case the nuisance had been abated after the issue of summons.

Unsound Meat, Fish, Poultry, and Fruit, Condemned and Destroyed as Unfit for Human Food.

During the year thirty-six seizures of unsound and diseased food were made, which comprised 467 stones of Beef, 10 stones of Mutton, 23 stones 2lbs. of Pork, 10 stones of Ling, 20 stones of Haddock, 21lbs. of Salmon, 20 Ducks, 20 Chickens, 8 stones of Plums and 20lbs. of Black Currants.

Twenty-two Magistrates' Orders were made to destroy the articles seized, whilst in 14 instances the articles seized were destroyed with the consent of the owners.

The number of complaints received during the year of alleged nuisance was 248. There were also 127 requests made to have houses examined for Sanitary Certificates during the same period.

Common Lodging-Houses.

There are nine Common Lodging-Houses on the Register. One application was received during the year from a person to be registered as the keeper of a Common Lodging-House.

This was granted by the Local Authority after the usual certificate as to character of fitness, &c., had been produced, as required by the Public Health Act, 1875.

Table II. shews the distribution of the inmates namely, Males, Females, and Children under the age of 10 years, for any one week during the period under review.

Children under 10 years of age are included in the totals of Males and Females.

The total number of persons passing the night in such Lodging Houses during the year was 64,873, a decrease of 6,072 as compared with the corresponding period last year.

It is also worthy of record that not a single case of Infectious Disease was notified in any of the Common Lodging Houses during the year.

TABLE II.

Date—1905.	Males.	Females	Chldn.	Total.
January 7	905	117	7	1022
,, 14	1013	122	7	1135
,, 21	988	93	7	1081
,, 28	962	116	7	1078
Feb. 4	958	124	14	1082
,, 11	825	93	7	918
,, 18	881	130	7	1011
,, 25	879	130	7	1009
March 4	830	131	15	961
,, 11	878	77	21	955
,, 18	910	103	28	1013
,, 25	1006	121	16	1127
April 1	903	105	14	1008
,, 8	1025	131	21	1156
,, 15	1034	131	35	1165
,, 22	1054	118	9	1172
,, 29	1050	96	7	1146
May 6	1149	122	7	1271
,, 13	1093	134	—	1227
,, 20	1055	116	8	1171
,, 27	1042	125	14	1167
June 3	1142	116	18	1258
,, 10	1260	129	28	1389
,, 17	1401	143	16	1544
,, 24	1341	149	28	1490
July 1	1422	140	14	1562
,, 8	1494	141	14	1635
July 15	1516	139	28	1655
,, 22	1575	136	9	1711
,, 29	1590	141	10	1731
August 5	1634	149	21	1783
,, 12	1623	173	35	1796
,, 19	1611	166	14	1777
,, 26	1616	82	10	1698
Sept. 2	1582	137	21	1719
,, 9	1569	119	32	1688
,, 16	1546	120	7	1666
,, 23	1169	141	28	1310
,, 30	1202	106	14	1308
Oct. 7	1080	114	14	1194
,, 14	861	96	14	957
,, 21	890	88	16	978
,, 28	904	100	7	1004
Nov. 4	922	102	5	1024
,, 11	899	73	10	972
,, 18	932	86	—	1018
,, 25	1003	84	4	1087
Dec. 2	894	77	10	971
,, 9	966	79	7	1045
,, 16	939	77	3	1016
,, 23	910	84	21	994
,, 30	923	95	24	1018
Totals ..	58856	6017	740	64873

Offensive Trades.

Periodical inspections of the premises in which offensive trades are carried on, have been made during the year. Occasional complaints have been made, but on inspection no nuisance of a serious nature was found, and any defect was remedied under advice of the Medical Officer and myself. Such businesses are carried on, as a rule, on the best sanitary rules, as far as is practicable.

One application was made to the Local Authority during the year to establish a tripe-boiling business, which was granted.

In this case a similar business had been carried on on the same premises by another person.

Fish Market.

A regular inspection has been made of the Fish Market during the year.

During the busy Herring Season the inspection is more frequent. I am pleased to note that no drastic measures have been called for.

The premises are generally kept in a good sanitary condition considering the nature of the business.

Unfortunately the process of carting through the main thoroughfares of the town in the busiest part of the Scarborough season is found somewhat unsightly, and from a sanitary point of view, objectionable.

The landing of a large catch causes all varieties of vehicles to be employed in the carting of the fish to the station.

Some of these are objectionable in permitting a constant dripping on the streets.

Fish Curing Houses.

These premises are constantly inspected during the Herring Season and every means taken to keep them in a clean state. One special feature is the frequent removal of refuse that arises from the gutting process, and, keeping of the drains clear of blockage. Other requirements, such as sanitary conveniences for both sexes, have had my special attention.

Public Slaughter Houses.

A constant inspection is made of the Public Slaughter-houses, these being visited daily or even more frequently. In only one instance during the year has there been any infringement of the Public Health Act or of Bye-Laws under it, for the regulation of Slaughter-houses.

Private Slaughter Houses.

There are seven private Slaughter-houses within the Borough, and with but one exception these were established prior to the adoption of the Local Government Act, 1858.

Frequent complaints were made from owners of property adjoining or in close proximity to them, of noises from the lowing and bleating of animals fasting at night, also of offensive odours arising from the removal of garbage, &c. There is no doubt whatever that this latter nuisance is most objectionable from a health point of view.

It is hoped, however, that some means will be speedily devised for abolishing it

Sanitary Certificates.

Sixty Certificates have been granted as to the sanitary condition of hotels, villas, boarding-houses, and private dwelling-houses in the Borough.

Single Private Drains.

In five instances written complaints have been made to the Local Authority of nuisances arising from drains of two or more houses belonging to different owners, being in such a state as to be a nuisance or injurious to health, and requiring alteration and amendment under Section 41 of the Public Health Act, 1875, and Section 19 of the Public Health Act Amendment Act, 1890.

Correspondence.

Six hundred and eighty-three letters have been written on the business of the Department.

New Buildings.

During the year 144 new houses have been inspected after completion, being a decrease of two as compared with last year.

A few minor defects were found to exist, and were reported to the Borough Surveyor to be remedied, prior to the granting of the usual Certificate of fitness for occupation.

Dairies, Cowsheds, and Milkshops.

There are 28 Cowsheds in the Borough. 57 inspections have been made, and where any contravention of the Bye-laws were found to exist, verbal notices in the first instances were given to the occupiers.

Those recommendations were complied with in all cases. There are 151 Purveyors of Milk on the register. These premises have all been inspected during the year.

In 39 instances the businesses have been discontinued.

In several instances Milk was found exposed for sale in bowls without any covers on shop counters, and in all cases recommendations were made to provide suitable covers for such vessels.

Ice Cream Shops.

There are 36 Ice Cream shops on the register. Forty-eight inspections have been made during the year. In 12 instances the businesses have been discontinued, while eight have been added to the list.

In one instance the premises were found in a most insanitary condition and formal Notice to Abate was served. With this exception, all the premises were found in a satisfactory condition.

Factory and Workshops' Act.

910 inspections of workshops have been made. Of this number 842 were found in a satisfactory condition, whilst the following defects herein enumerated were found to exist, namely :—

Workshops in a dirty state	17
Want of sufficient closet accommodation	4
Defective flushing apparatus to W.C's.	3
Choked drains	2
Dirty Water Closets	5
Accumulation of Refuse	1
Defective Privies	1
Want of Ashpit	1
Defective Floors	4
,, Ceilings	2
,, Spouts	3
,, Yard Pavements	7
,, Soilpipe	1
Abstracts not affixed	12
Old Well and other sanitary defects in Bakehouse	1
Defective Drainage	1
Breach of Factory Act (ironing stoves in room)	7

Eighteen Workshops were found to have been discontinued.

Bakehouses.

There are 55 bakehouses on the register. Of this number 11 are underground, and seven others having mechanical power in force, are defined under the Factory and Workshops Act as Factories. The last named are under the administration of the Factory Inspector for the district generally, with the exception of certain sanitary measures, which are carried out by the officers of the Local Authority.

One hundred and thirty-three inspections were made during the year, where the following defects were found to exist, namely :—

Breach of Factory and Workshops' Act.

Requiring Limewashing	3
Defective Floors	5
,, Ceiling	2
,, Drainage	1
Want of W.C. accommodation	2
Dirty Water-Closets	2
,, Bake-houses	2
Want of Ashpit	1
Old well, &c. in Bakehouse	1
Notification to Factory Inspector where young persons are employed	5

Outworkers.

During the first quarter of the year 22 firms notified the employment of 33 outworkers. Again during the third quarter 17 firms notified the employment of 30 outworkers. It is obvious that a repetition would take place from these returns, both in the number of firms and outworkers. I have, therefore, taken the averages for the whole year, namely, 19 firms of employers of labour and 32 outworkers.

In all 63 inspections were made at the homes in which work was given out. All these were found in a good sanitary condition.

TABLE III.

List of Cases in which it was found necessary to adopt Magisterial Proceedings.

Particulars of Complaint.	No. of Cases.	How disposed of.	Penalties Imposed. £ s. d.
Premises in such a state as to be a nuisance or injurious to health	1	Case dismissed, work done after the issue of the Summons.	...
Being in possession of diseased Meat deposited for the purpose of Preparation for Sale	1	Fined £2 including costs.	2 0 0
Food and Drugs' Acts	6	One fined 17/6 and 2/6 costs, one case dismissed, and four cases withdrawn.	1 0 0
...	8	...	£3 0 0

TABLE IV.

Number of Cases removed to the Sanatorium and number of Rooms and Clothing Disinfected in 1905.

Cases of Infectious Disease removed to the Sanatorium	65
Rooms disinfected	155
Beds	37
Mattresses	14
Pillows and Bolsters	247
Blankets	157
Sheets	140
Counterpanes	53
Rugs	60
Curtains	27
Carpets	7
Personal Clothing	647
Sundries	550
Total	2159

FOOD AND DRUGS ACTS, 1875 to 1899.

Ninety-three samples of Food and Drugs have been submitted for Analysis during the year 1905. Of this number 15 were certified by the Public Analyst to be adulterated, being 16·12 per cent. of the total. In two instances the articles were of poor quality. Whilst in four instances Vendors were cautioned for selling adulterated milk.

The following Tables shew the nature of the articles submitted for Analysis, result of Analysis, specified in Analyst's Certificates, also the result of proceedings taken before the Justices.

FIRST QUARTER.

Nature of Article.	No. of Samples taken.	Genuine.	Adulterated.	Result of Analysis specified in Analyst's Certificates. Adulterated.	Observations.	Result of Proceedings taken before the Justices.
Milk	12	12	...	...	Two milks were rather poor in solids not fat, being 8·28 and 8·29 per cent.	None.
Cheese	1	1	...	..	...	
Brandy	10	5	5	Absolute alcohol by weight, 40·85% Water extractions, &c., 59·15 per cent., including Ethers, 0·01936 per cent.	It is deficient in Ethers to the extent of at least 40 per cent., and is therefore not a sample of genuine Brandy.	Summons withdrawn.
				Absolute alcohol by weight 37·50%. Water extractions, &c., 62·50 per cent. including Ethers, 0·02024 per cent.	It is deficient in Ethers to the extent of at least 44 per cent., and is therefore not a sample of genuine Brandy.	Summons withdrawn.
				Absolute alcohol by weight, 38·50%. Water extractions, &c., 61·50 per cent., including Ethers, 0·01936 per cent.	It is deficient in Ethers to the extent of at least 47 per cent., and is therefore not a sample of genuine Brandy.	Summons withdrawn.
				Absolute alcohol by weight, 38·06%. Water extractions, &c., 61·94, containing Ethers, 0 0176 per cent.	It is deficient in Ethers to the extent of at least 61 per cent., and is therefore not a sample of genuine Brandy.	Case dismissed.
				It contains 35·1 per cent. of absolute alcohol by weight, and is therefore of a strength of 26·48 degrees under proof, or 1·48 degrees below the legal standard of 25 degrees under proof, fixed by the Sale of Food and Drugs Amendment Act, 1879.	...	None.
Beer	6	6	...		I am of opinion that the same are samples of genuine Beer. They were free from any trace of Arsenic, and the acidity was well within the limits of genuine Beers.	...
Milk of Sulphur.	2	2	...	..		...
Cream of Tartar...	2	2	...	...		...
Pepper	2	2	...	...		...
Total ...	35	30	5	...	...	...

SECOND QUARTER.

Nature of Article.	No. of Samples taken.	Genuine.	Adulterated.	Result of Analysis specified in Analyst's Certificates. Adulterated.	Observations.	Result of Proceedings taken before the Justices.
Milk	8	5	3	Solids not Fat ... 7·55 Fat ... . 2·70 Water ... ... 89·75 100·00 Having regard to the Sale of Milk Regulations, 1901, it is adulterated with 11·18 per cent. of added water; it is also deficient in Milk Fat to the extent of 10 per cent.	No change had taken place in the constitution of the sample that would interfere with the analysis. On the advice of the Town Clerk no proceedings were taken.	None.
				Solids not Fat ... 7·58 Fat ... . 3·30 Water ... .. 89·12 100·00 Having regard to the Sale of Milk Regulations, 1901, it is adulterated with 10·82 per cent. of added water.	No change had taken place in the constitution of the sample that would interfere with the analysis. On the advice of the Town Clerk no proceedings were taken.	None.
				Solids not Fat ... 7·17 Fat ... ... 2·70 Water ... ... 90·13 100·00 Having regard to the Sale of Milk Regulations, 1901, it is adulterated with 15·65 per cent. of added water; it is also deficient in Milk Fat to the extent of 10 per cent.	No change had taken place in the constitution of the sample that would interfere with the analysis. On the advice of the Town Clerk no proceedings were taken.	None.
Butter	3	3	...	..	...	...
Cheese	3	3	...	...	...	...
...	14	11	3	...	...	...

Nature of Article.	No. of Samples taken.	Genuine.	Adulterated.	Result of analysis specified in Analyst's Certificate. Adulterated.	Observations.	Result of Proceedings taken before the Justices.
Milk	19	13	6	Solids not fat ... 8·37 Fat ... ... 2·77 Water ... ... 88·86 100·00 Having regard to the Sale of Milk Regulations, 1901, it is adulterated with 1·53 per cent. of added water; it is also deficient in milk fat to the extent of 7·67%.	Vendor cautioned. No change had taken place in the constitution of the sample that would interfere with the analysis.	
				Solids not Fat ... 8·45 Fat ... ... 2·65 Water .. ... 88·90 100·00 Having regard to the Sale of Milk Regulations, 1901, it is deficient in milk fat to the extent of 11·7 per cent.	Vendor cautioned. Do.	
				Solids not fat ... 7·89 Fat ... . 2·49 Water ... ... 89·62 100·00 Having regard to the Sale of Milk Regulations, 1901, it is adulterated with 7·2 per cent. of added water, it is also deficient in milk fat to the extent of 17 per cent.	In this case the Vendor requested a sample to be taken from the farmer in course of delivery at the Railway Station. Do. See subsequent remarks.	
				Solids not Fat .. 8·42 Fat ... ... 2·55 Water ... ... 89.03 100·00 Having regard to the Sale of Milk Regulations, 1891, it is deficient in milk fat to the extent of 15 per cent.	No change had taken place in the constitution of the sample that would interfere with the analysis.	Fined 17/6 and 2/6 costs.
				Solids not Fat ... 7·39 Fat ... ... 3·18 Water ... .. 89·43 100·00 Having regard to the Sale of Milk Regulations 1901, it is adulterated with 13·10 per cent. of added water.	Vendor cautioned. Do.	
				Solids not Fat .. 7·80 Fat ... ... 2·30 Water ... ... 89·90 100·00 Having regard to the Sale of Milk Regulations, 1901, it is adulterated wtth 8·24 per cent. of added water, it is also deficient in milk fat to the extent of 23·34 per cent.	Summons withdrawn on a point of law, on the advice of the Town Clerk. Do.	
Butter	6	6	...	..	...	
Cheese	3	3	...	..	...	
Turpentine ..	1	1	...	...	...	
...	29	23	6	...	...	...

FOURTH QUARTER.

Nature of Article.	No. of Samples taken.	Genuine.	Adulterated.	Result of Analysis specified in Analyst's Certificates. Adulterated.	Observations.	Result of Proceedings taken before the Justices.
Condensed Milk...	2	2	...	...	...	..
Coffee	2	1	1	It consists of 75 parts Chicory and 15 parts of Coffee.	Facts disclosed by writing in ink on the parcel, "Chicory and Coffee."	None.
Olive Oil... ..	2	2	...	..	...	...
Pepper	1	1	...	...	..	...
Sweet Nitre ...	1	1	...	...	...	...
Soda Water ...	2	2	...	...	The samples are free from metallic substances, but are merely water containing Carbonic Acid Gas and do not contain any alkali. As there is no recognised standard for soda water, I doubt whether, if a prosecution were instituted, a conviction could be obtained.	...
Whiskey	2	2	...	...	...	...
Vinegar	3	3	...	...	..	...
...	15	14	1	..	...	...

FOOD AND DRUGS' ACTS, 1875-1899.

SUMMARY OF SAMPLES PROCURED FOR ANALYSIS, AND HOW DISPOSED OF DURING THE YEAR 1905.

Nature of Article.	No. of Samples taken.	Genuine.	Adulterated.	Convictions.	Dismissed or Summons Withdrawn.	No proceedings taken.	Penalties Imposed.
New Milk	39	30	9	1	1	7	One fined 17/6 and 2/6 costs
Condensed Milk	2	2	...	...	...	...	
Butter	9	9	...	...	...	...	...
Cheese	7	7	...	...	...	...	...
Brandy	10	5	5	...	4	1	...
Beer	6	6	...	...	...	...	...
Whisky	2	2	...	...	...	...	...
Coffee	2	1	1	...	...	1	...
Pepper	3	3	...	...	...	...	...
Sweet Nitre	1	1	...	...	...	...	...
Soda Water	2	2	...	...	...	...	...
Milk of Sulphur	2	2	...	...	...	...	..
Cream of Tartar	2	2	...	...	...	...	...
Vinegar	3	3	...	...	...	...	...
Olive Oil	2	2	...	...	...	...	...
Turpentine	1	1	...	...	...	...	...
...	93	78	15	1	5	9	...

AN ANALYSIS

OF THE

INFANTILE MORTALITY

OF

SCARBOROUGH,

For the Thirty Years, 1876--1905,

WITH

Recommendations.

BY

JOHN KNIGHT, M.D., D.P.H., Camb.,

Medical Officer of Health.

Health Department,

King Street,

Scarborough,

28th January, 1907.

To the Town Council of the Borough of Scarborough.

Gentlemen,

The following Report is based upon the examination of the weekly death-returns for thirty years. Each infantile death has been abstracted and classified according to the new Local Government Board Table issued in 1906.

I have the honour to be,

Gentlemen,

Your obedient Servant,

JOHN KNIGHT.

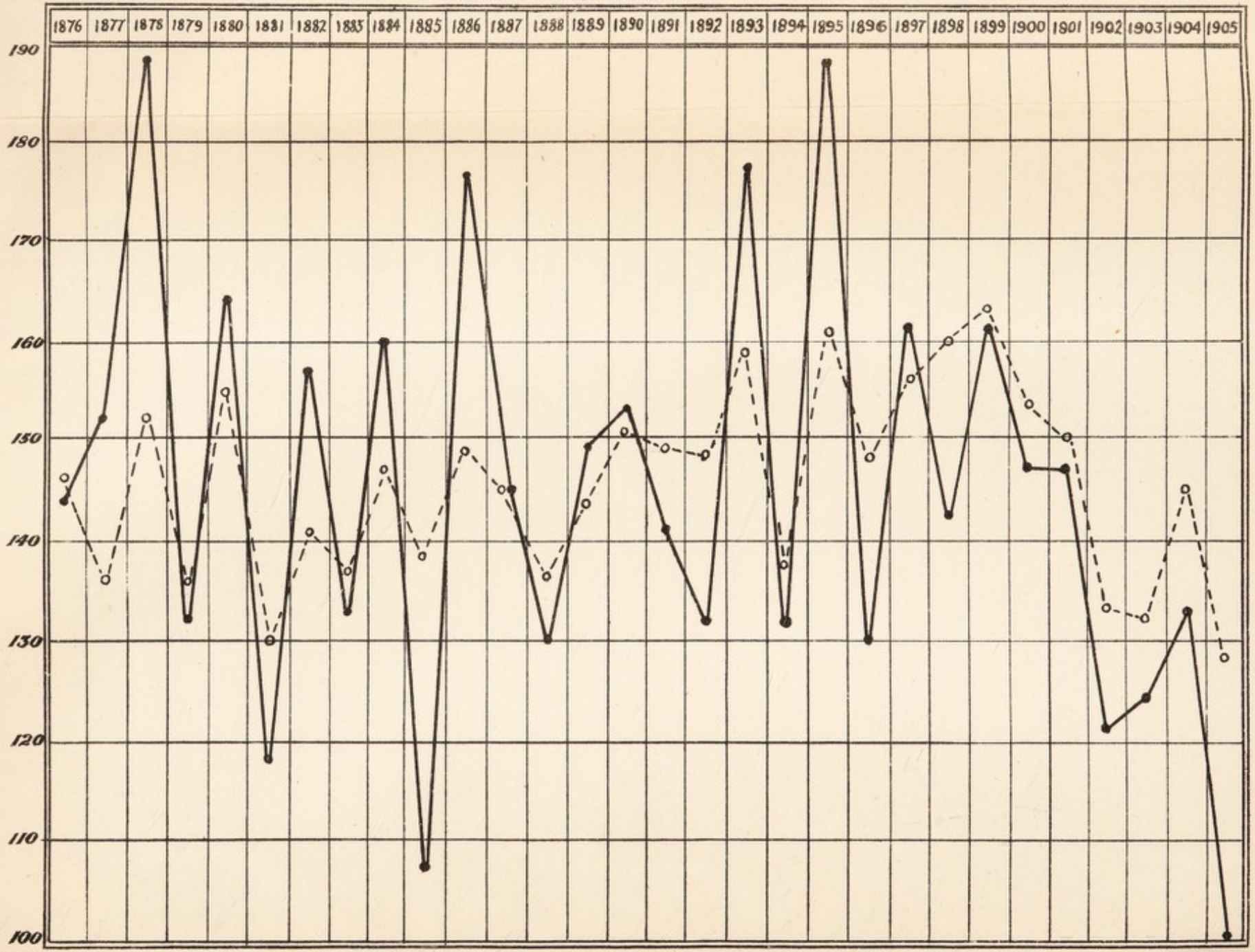
— INFANTILE — DEATH — RATE —

1876 TO 1905 INCLUSIVE

SCARBOROUGH ———

ENGLAND AND WALES - - - - - - -

CHART A.



INFANTILE DEATH-RATES, 1876-1905.

Year.	Scarborough.	England and Wales.
1876	144	146
1877	152	136
1878	188	152
1879	132	135
1880	164	153
1881	118	130
1882	157	141
1883	133	137
1884	160	147
1885	107	138
1886	176	149
1887	145	145
1888	130	136
1889	149	144
1890	153	151
1891	141	149
1892	132	148
1893	177	159
1894	132	137
1895	188	161
1896	130	148
1897	161	156
1898	142	160
1899	161	163
1900	147	154
1901	147	151
1902	121	133
1903	124	132
1904	133	145
1905	100	128

Scarborough—Average 144. England and Wales—Average 145.

REPORT.

The term "infantile mortality" denotes the annual number of deaths, in any community, of children under the age of one year. Such number of deaths, stated as a proportion per thousand births registered, constitutes the "infantile death-rate."

In this connection, the expression, "per thousand births registered," is universally accepted as being practically equivalent to "per thousand living under the age of one year." The rates so calculated have the advantage of being based upon two actually ascertained facts, the number of infantile deaths and of births registered.

Attention has been specially directed of recent years to the infantile mortality largely owing to three considerations :—

(1). During the last thirty years there has been a steady fall in the general death-rate, but the infantile death-rate has remained almost stationary.

(2). The same period has witnessed a marked decline in the birth-rate.

(3). The infantile death-rate is a very high one.

This combination of falling birth-rate and stationary infantile death-rate not only justifies, but urgently calls for an enquiry into the causes of infantile mortality.

In order to thoroughly appreciate the excessive death-rate of infants under one year, comparison must be made with the death-rates at other periods of life.

The general death-rate, *i.e.*, the annual number of deaths per thousand living at all ages, really covers a number of death-rates which vary enormously from one another, as will be seen from the subjoined Table.

In 1904 the general death-rate of England and Wales was 16·2 per 1,000. Analysed into death-rates per thousand living at certain age-periods, it yielded the following results :

Under 5 years.	5 to 10 years.	10 to 15 years.	15 to 20 years.	20 to 25 years.	25 to 35 years.	35 to 45 years.	45 to 55 years.	55 to 65 years.	65 to 75 years.	75 to 85 years.
51·6	3·5	2·1	3·0	3·8	5·3	8·8	15·0	29·2	62·3	131·4

For the same year the infantile death-rate was 145 per thousand, a rate which is not approached at any other age under 75 years, and is many times that prevailing between the ages of 10 and 20 years.

The course pursued by the infantile death-rate of England and Wales, and of Scarborough during the period under review (1876 to 1905) is shown by Chart "A." Two features are specially noticeable :—

(1). The fluctuation of the rate from year to year.

(2). The close correspondence of the local with the general rate the greater variation in the former being due to the much smaller numbers dealt with.

A marked reduction of the rate has taken place in the last 5 year period, but how little real improvement has been made can be seen from the following Table :—

TABLE I.

INFANTILE DEATH-RATES.

SCARBOROUGH.			ENGLAND & WALES.		
1876-1880 .. 156 per 1,000			1876-1880 ... 144 per 1,000		
1881-1885 ... 135 ,,	average 147		1881-1885 ... 138 ,,	average 145	
1886-1890 .. 150 ,,			1886-1890 ... 145 ,,		
1891-1895 .. 154 ,,			1891-1895 .. 150 ,,		
1896-1900 ... 148 ,,	average 142		1896-1960 ... 156 ,,	average 148	
1901-1905 ... 125 ,,			1901-1905 ... 138 ,,		

For the thirty years under review the infantile death-rate of Scarborough is 144 and of England and Wales 145 per 1,000.

Later it will be shown that the fluctuation of the rate from year to year is largely influenced by the relative prevalence of Epidemic Diarrhœa.

Attention may now be directed to the Seasonal Variation in number of the infantile deaths.

Chart "B" represents the infantile deaths for the last 30 years for each week of the year, and Chart "C" collects these into quarters of the year. The greatest number of deaths occur in the third quarter (31·3%), the least in the second (21%); the first (22·3%) and fourth quarters (25·4%) being intermediate.

This yearly distribution of the infantile deaths presents a marked contrast to that of the deaths at all ages. Of the general population, the deaths are most numerous in the first quarter and least at the third. Evidently, therefore, some influences specially inimical to infant life come into play during the third quarter of the year.

Examination of the Weekly Chart shews that the deaths suddenly and markedly increase in the middle of the third quarter, and this increase is maintained into the first part of the fourth quarter.

TOTAL—INFANTILE—DEATHS

IN WEEKLY AND QUARTERLY PERIODS

CHART B.

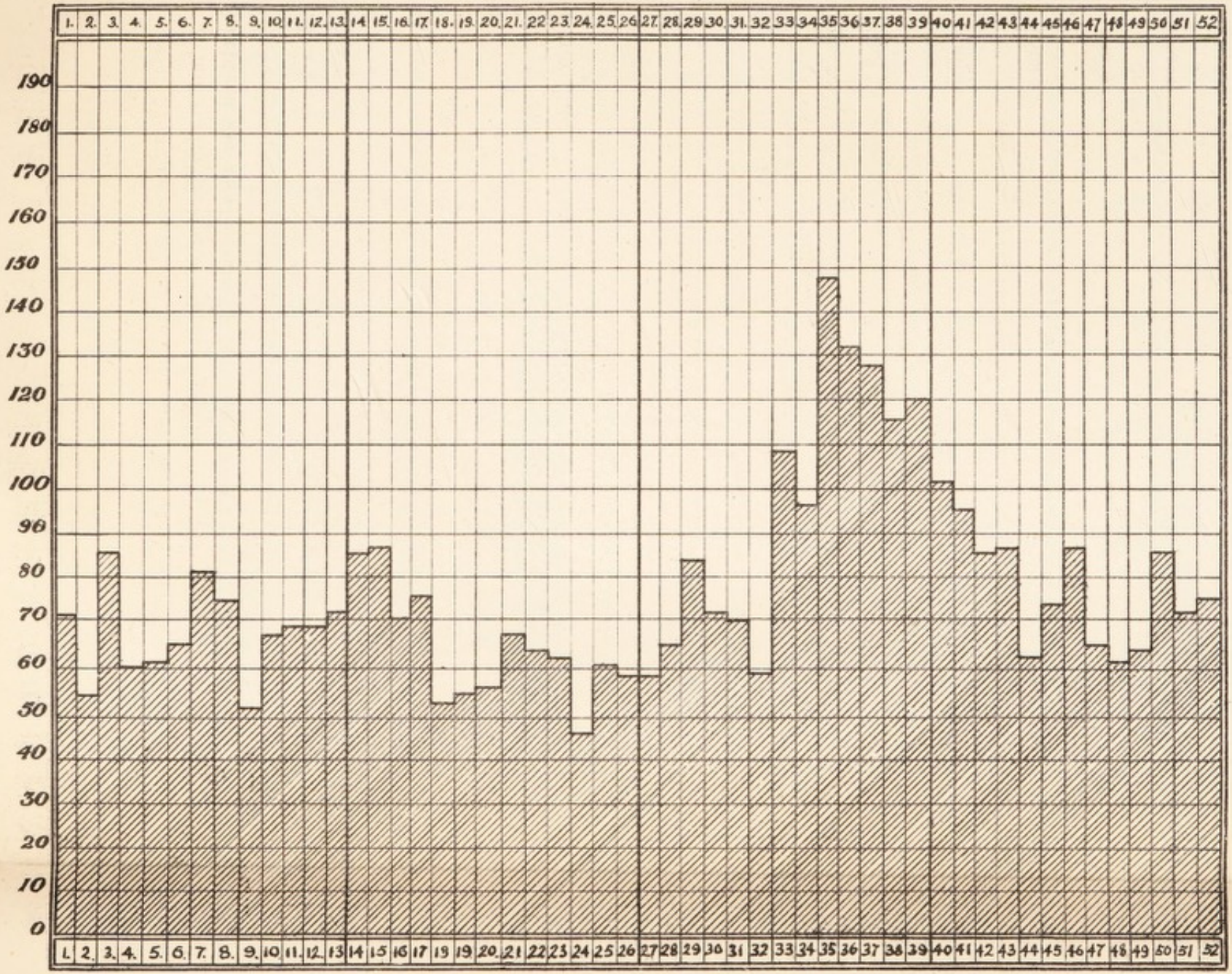
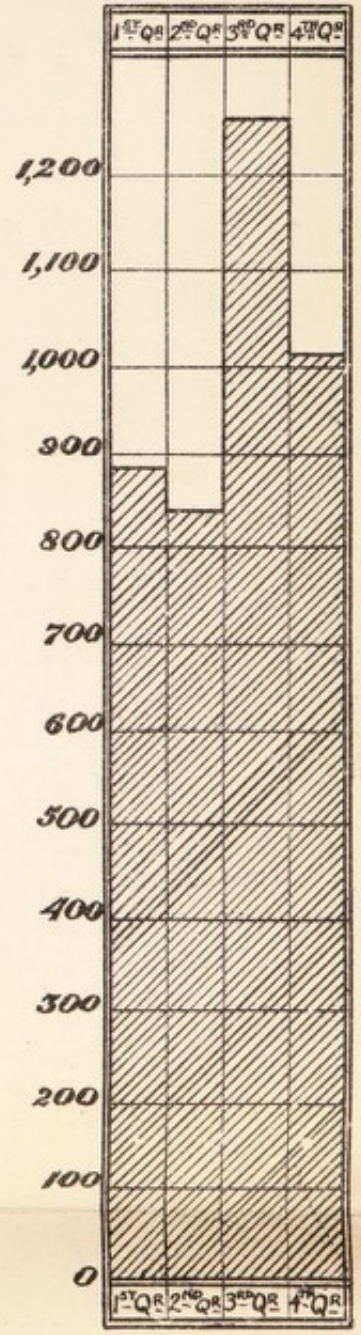
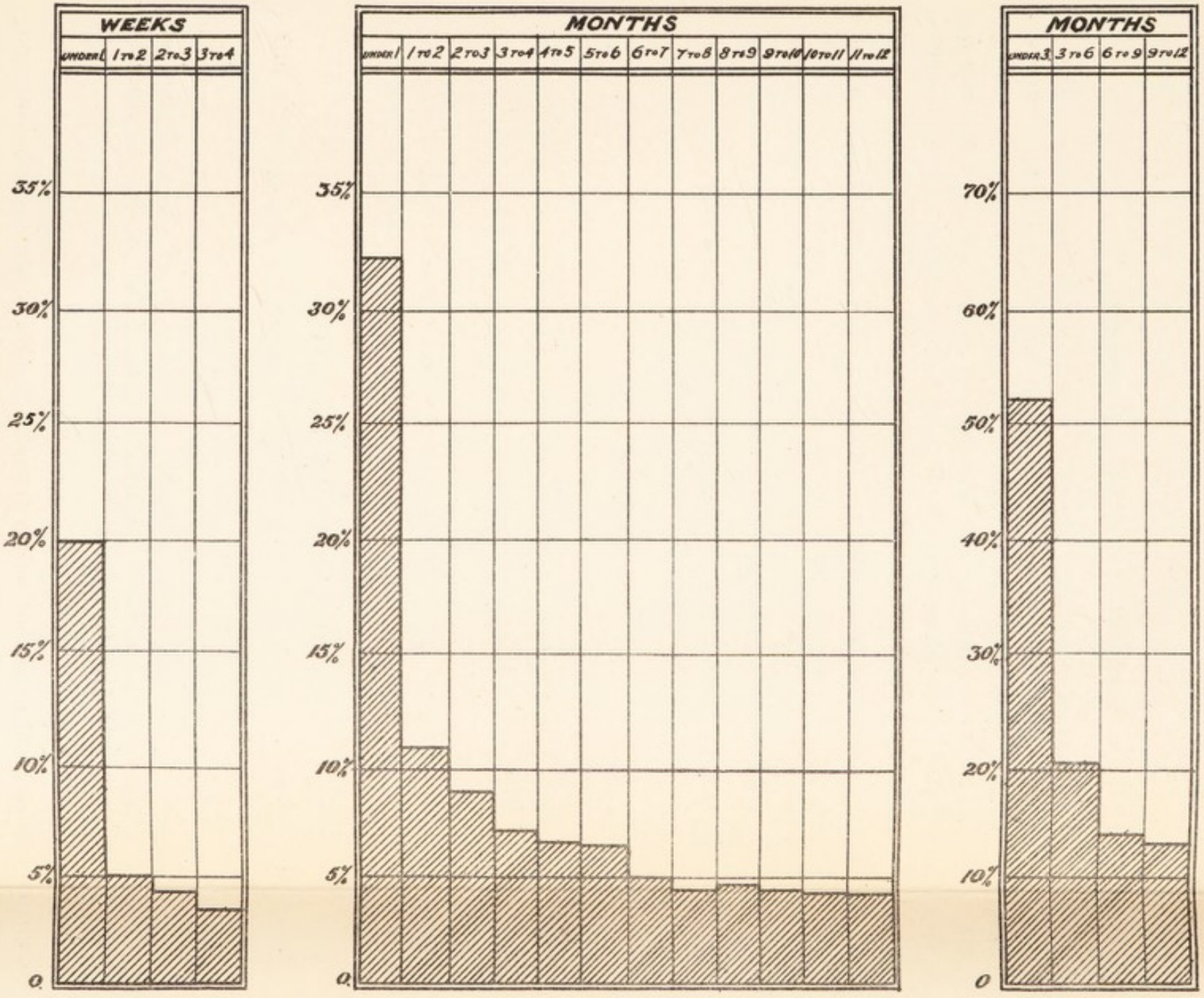


CHART C.



PERCENTAGE-OF-TOTAL-DEATHS
AT AGE PERIODS
CHART D.



When the quarterly charts of the various groups of diseases are studied, it will be found that this characteristic excess of deaths in the third quarter is due to Diarrhœal diseases.

AGES OF INFANTS AT DEATH.

The newly-born infant has but a slender hold upon existence, a hold which, however, becomes increasingly tenacious with every day that the infant survives. The risk of death is greatest on the day of birth, but rapidly decreases during the first week. By the end of the first week the chances of survival are enormously enhanced, and are continually improving, though at a much slower rate, during the first twelve months of life.

In round numbers 20%, or one-fifth, of the deaths occur under the age of one week, 33%, or one-third of the total deaths, under one month, 53%, or more than one-half, under three months, 20% between three and six months, 14% between six and nine months. and 13% between nine and twelve months. (See Chart D.)

The actual number of deaths at each of these age-periods from 1876 to 1905 is as follows:—

TABLE II.

Under 1 week.	1 to 2 weeks.	2 to 3 wks.	3 to 4 wks.	Under 1 month.	1 to 2 months.	2 to 3 m'ths.	3 to 4 m'ths.	4 to 5 m'ths.	5 to 6 m'ths.	6 to 7 m'ths.	7 to 8 m'ths.	8 to 9 m'ths.	9 to 10 m'ths.	10 to 11 m'ths.	11 to 12 m'ths.	Total.
778	202	167	141	1288	442	362	287	266	263	197	181	183	176	174	173	3992

As at almost all other age periods, so under the age of one year, males die in proportionally greater numbers than females, from nearly all the various causes.

INFLUENCE OF ILLEGITIMACY.

Of much greater importance than the influence of sex in determining a high mortality, is the influence of illegitimacy.

The unfavourable conditions under which these unfortunate infants come into the world are so obvious as to need little comment. Not only do a large proportion of these infants begin life handicapped with hereditary disease, but it may be said generally that in the rearing of them neglect reaches its maximum.

These facts are so thoroughly appreciated that it is customary to reckon the deaths of legitimate and illegitimate infants separately. The deaths of legitimate and illegitimate infants are stated as proportions per 1,000 legitimate and illegitimate births respectively.

During the thirty years now dealt with the average infantile death-rate of Scarborough was 144 per 1,000. But while the death-rate among legitimate infants was only 133 per 1,000, that of illegitimates was 280 per 1,000, or more than double.

No matter what communities be selected for examination, the death-rate of illegitimate infants is always much greater than that of legitimate.

It will thus be apparent that in districts with a high proportion of illegitimate births, the infantile death-rate will be correspondingly high, other conditions being equal.

Unfortunately, the amount of illegitimacy in Scarborough is very great. The proportion of illegitimate to total births during the last thirty years is 91 per 1,000, or more than double the rate (44) of England and Wales for the same period.

Had all the births been legitimate, or rather, had illegitimate infants only died at the same rate as legitimate, there would have been 3,661 infantile deaths instead of 3,992—a saving of fully 8%.

The influence of illegitimacy in determining the cause of death will be considered later, when the principal diseases of which infants die are dealt with.

INFANTILE DEATH-RATES OF WARDS.

As great differences frequently exist between the death-rates of various divisions of a town as between those of several towns. The infantile death-rate shews this variation to a marked degree. The subjoined Table gives the total infantile death-rate, those of legitimate and illegitimate infants, in the different Wards, expressed to the nearest whole number.

TABLE III.

	N.W.	N.	C.	E.	W.	S.	Whole Town.
Total Infantile Death-rate... ..	123	166	162	156	143	90	144
Death-rate of Legitimate Infants	113	149	145	143	131	86	133
Death-rate of Illegitimate Infants	197	326	357	335	316	190	280

It will be noted that the total rate is highest in the North Ward and lowest in the South, as is also that of legitimate infants.

The death-rate of illegitimate infants is highest in the Central Ward and lowest in the South.

Further, in the North, Central, East, and West Wards practically 1 of every 3 illegitimate children born dies within the first year of life.

Whether the best or worst Ward, as regards infantile mortality, be taken, illegitimate infants die at twice the rate of legitimate.

DISEASES CAUSING INFANTILE DEATHS.

The Reports of Medical Officers of Health for the year 1905 contained a new Local Government Board form in which the infantile deaths were tabulated according to the fatal disease and the age at death. This Table (No. 4) has been made the basis of the present report, all the infantile deaths during the last thirty years in the Borough having been classified according to it.

Examination of Table 4 and Chart E shews that the chief causes of death in infants are, in descending order of importance:—Wasting Diseases, Diarrhœal Diseases, Convulsions, Respiratory Diseases, Common Infectious Diseases, and Tuberculous Diseases. Together these account for 89·6% of the total deaths.

Wasting Diseases	34·3%
Diarrhœal Diseases	17·1%
Convulsions	14·8%
Respiratory Diseases	14·4%
Common Infectious Diseases	4·6%
Tuberculous Diseases	4·4%
	89·6%

In studying Chart "A" attention was called to the remarkable fluctuation of the infantile death-rate from year to year.

The six groups of diseases indicated above being the chief factors in the infantile mortality, it may now be asked which of them mainly contribute to raise the death-rate above the average. To answer this question the deaths from these causes in the five years with the highest, and the five years with the lowest death-rates, have been calculated with the result shewn by Chart "F.'

TABLE IV.

TABLE V. OF LOCAL GOVERNMENT BOARD. BOROUGH OF SCARBOROUGH.

INFANTILE MORTALITY DURING THE YEARS 1876 TO 1905 INCLUSIVE.

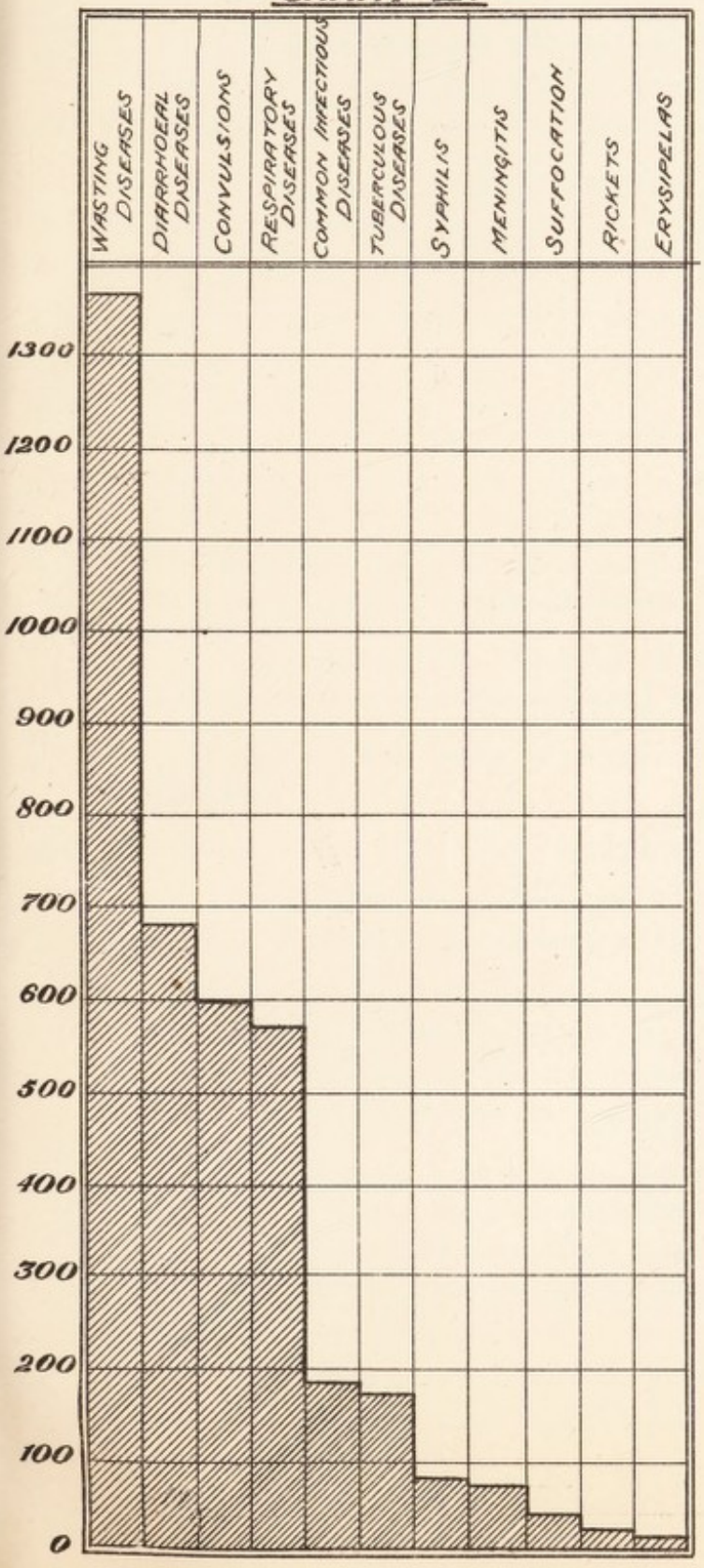
Deaths from stated Causes in Weeks and Months under One Year of Age.

CAUSE OF DEATH.		Under 1 Week.	1-2 Weeks.	2-3 Weeks.	3-4 Weeks.	Total under 1 Month.	1-2 Months.	2-3 Months.	3-4 Months.	4-5 Months.	5-6 Months.	6-7 Months.	7-8 Months.	8-9 Months.	9-10 Months.	10-11 Months.	11-12 Months.	Total Deaths under One Year.
Common Infectious Diseases.	Small Pox	...	...	...	...	..	...	...	1	..	...	..	...	...	1	...	..	2
	Chicken Pox	...	...	...	...	..	...	..	2	...	1	...	...	...	...	1	...	4
	Measles	...	...	...	1	1	...	...	1	3	2	1	4	3	11	7	11	44
	Scarlet Fever	...	...	...	..	...	...	1	...	1	..	2	1	...	...	...	2	7
	Diphtheria : Croup	...	...	..	..	..	2	1	...	1	...	...	..	3	1	6	2	16
	Whooping Cough	..	...	2	.	2	7	16	8	4	10	8	11	7	8	14	16	111
Total		...	...	2	1	3	9	18	12	9	13	11	16	13	21	28	31	184
Diarrhœal Diseases.	Diarrhœa, all forms	...	4	14	11	29	53	71	70	45	52	37	33	27	34	17	22	490
	Enteritis *not Tuberculous*	3	8	10	4	25	19	12	22	12	17	12	8	8	5	2	3	145
	Gastritis, Gastro-intestinal Catarrh	...	2	2	2	6	13	14	6	1	3	3	1	1	1	0	1	50
Total		3	14	26	17	60	85	97	98	58	72	52	42	36	40	19	26	685
Wasting Diseases.	Premature Birth	441	46	37	33	557	42	13	10	2	2	.	.	1	...	1	1	629
	Congenital Defects	134	37	30	25	226	55	26	14	14	8	10	6	2	1	4	2	368
	Injury at Birth	14	...	1	...	15	...	...	...	...	...	..	...	..	..	...	...	15
	Want of Breast Milk	..	..	...	...	...	1	...	...	.	2	..	...	...	...	..	...	3
	Atrophy, Debility, Marasmus	42	19	27	15	103	52	52	33	34	24	14	14	13	9	5	3	356
Total		631	102	95	73	901	150	91	57	50	36	24	20	16	10	10	6	1371
Tuberculous Diseases.	Tuberculous Meningitis	...	...	...	...	...	1	3	3	4	6	4	3	4	2	6	4	40
	Tuberculous Peritonitis: Tabes Mesenterica	1	1	1	...	3	7	10	6	12	12	10	7	2	7	5	10	91
	Other Tuberculous Diseases	...	...	...	1	1	5	...	2	3	7	5	3	5	4	7	5	47
Total		1	1	1	1	4	13	13	11	19	25	19	13	11	13	18	19	178
Erysipelas		1	2	..	2	5	4	1	1	1	1	1	1	1	..	...	..	16
Syphilis		3	3		8	16	15	17	6	12	6	2	...	3	...	1	1	79
Rickets		...	...	...	1	1	2	1	2	1	1	...	1	...	4	5	3	21
Meningitis (*not tuberculous*)		1	1	...	1	3	5	4	4	6	4	11	8	4	6	9	5	69
Convulsions		101	63	27	25	216	76	44	30	37	36	22	23	28	32	24	25	593
Respiratory Diseases.	Bronchitis	5	4	4	3	16	49	39	31	46	38	27	31	33	29	37	22	398
	Laryngitis	..	...	...	...	...	..	1	...	1	2	2	...	2	...	2	2	12
	Pneumonia	...	2	1	1	4	13	16	14	14	12	17	13	19	12	18	14	166
Total		5	6	5	4	20	62	56	45	61	52	46	44	54	41	57	38	576
Suffocation, overlaying		8	2	1	0	11	6	6	4	..	3	1	1	3	..	...	5	40
Other Causes		21	11	8	8	48	16	15	16	12	13	8	12	14	9	6	11	180
		778	202	167	141	1288	442	362	287	266	263	197	181	183	176	174	173	3992

INFANTILE DEATHS IN SCARBOROUGH
FROM PRINCIPAL DISEASES

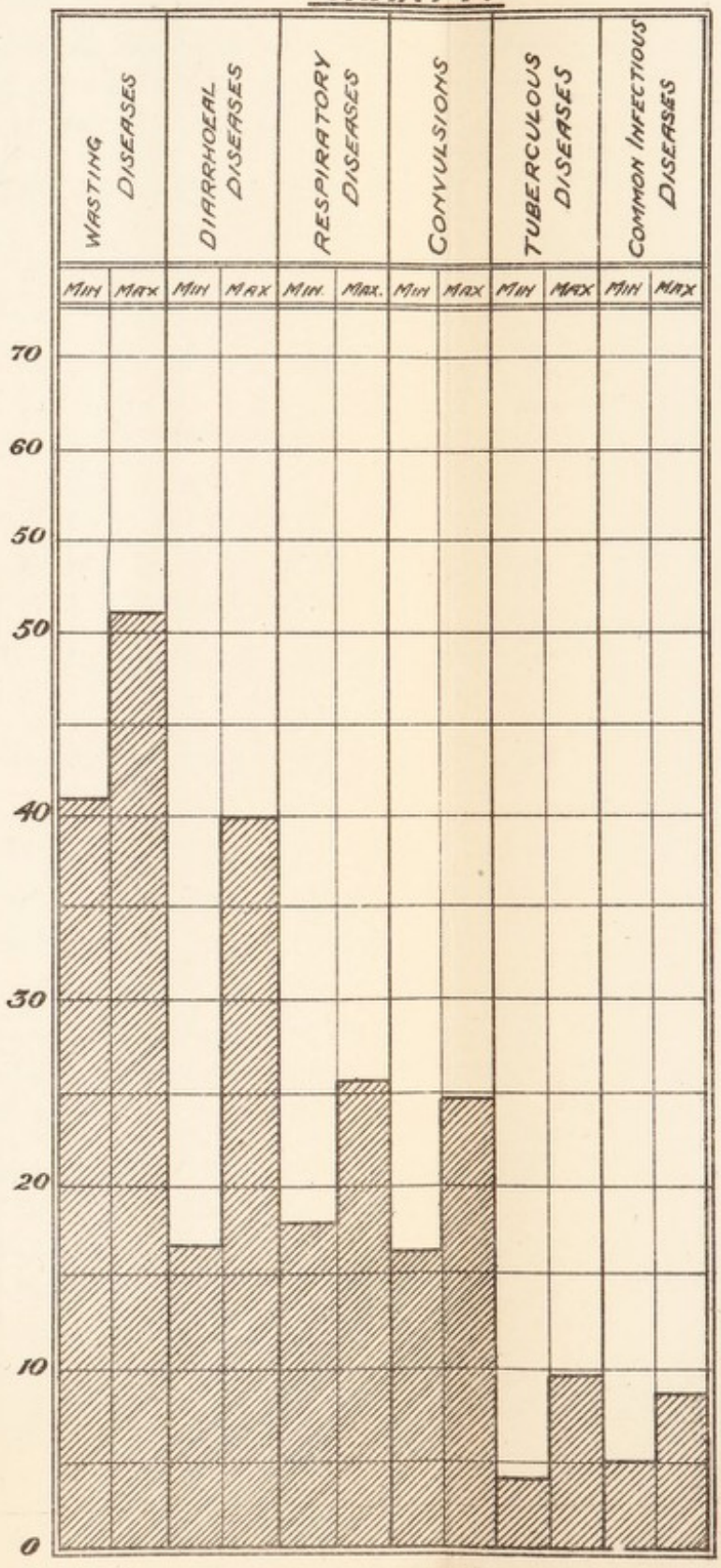
1876 TO 1905 INCLUSIVE

CHART E.



5 YRS OF HIGHEST AND
5 YRS OF LOWEST DEATH RATE

CHART F.



It should be noted that the proportion of deaths furnished by these six groups of diseases is practically the same in the maximal and minimal periods of death-rate, being 89·9% in the former and 88·5% in the latter. Hence it is evident that the influence of the remaining diseases in altering the death-rate may be excluded.

It will be observed that the years of maximal death-rate are characterised by an increase in the deaths from all these groups of diseases, but the increase is proportionally much greater in some of the groups than in others.

INFANTILE DEATH-RATES FROM PRINCIPAL DISEASES.

	Common Infectious Disease.	Diarrhœal.	Wasting.	Tuberculous.	Convulsions.	Respiratory.
Maximal 5 years	8·5	40·2	51·4	9·8	24·8	25·7
Minimal 5 years	4·9	16·4	41·1	4·0	16·4	18·0
Increase	3·6	23·8	10·3	5·8	8·4	7·7

The chief cause of the increase is thus found to be Diarrhœal Diseases which are followed, but at a considerable interval, by Wasting Diseases.

The death-rate from Diarrhœal Diseases in the maximal 5 years is two and a half times as great as in the minimal 5 years.

The principal causes of infantile death may now be considered in order of importance.

WASTING DISEASES.

These comprise—(1) Premature Birth, (2) Congenital Defects, (3) Injury at Birth, (4) Want of Breast Milk, (5) Atrophy, Debility, Marasmus.

This group is not very happily named, as "wasting," may not be marked, except in sub-group 5, and is often a prominent feature in other diseases. The vast majority of the deaths in this class are due to causes which, operating previous to birth, interfere with the proper development and vitality of the child.

The sub-group 5 Atrophy, &c., includes deaths due to feeble vitality at birth, and therefore caused by pre-natal influences, but many of the deaths under this heading, and more especially those which occur several months after birth are, in reality, due to the neglect, injudicious feeding, &c., of infants who were normally developed at birth.

Although only three deaths are definitely ascribed to Want of Breast Milk, there can be no doubt that many classified under Atrophy, &c., actually belong to this class.

Of the 1371 deaths from Wasting Diseases, 629 were from Premature Birth, 368 from Congenital Defects, 15 from Injury at Birth, 3 from want of Breast Milk, and 356 from Atrophy, &c.

The marked revolution in the mode of life (for life begins at conception, not at birth), which takes place at Birth, suddenly throws upon the organism a severe strain, which can only be met with complete success by the infant of normal development and vitality. Hence it is that infants ushered prematurely into the world, or exhibiting structural defect or feeble vitality, rapidly succumb within a few hours, days, or weeks of birth.

As the great majority of deaths from Wasting Diseases are of such infants, it is not surprising to find that 46%, or almost one half of them, occur under the age of one week, 65% under one month, and 83% under three months.

The sub-group Atrophy, etc., containing a large proportion of deaths not due to pre-natal causes, we should expect to find a difference in the age-incidence of the sub-group, compared with that of the remainder of deaths from Wasting Diseases.

Such is actually found to be the case, as an examination of the charts will shew.

In chart H the age-incidence of deaths from sub-groups (1), (2), (3) and (4), and sub-group (5) respectively, of Wasting Diseases, is shewn.

In the former class the deaths under three months are in enormous excess, constituting, indeed, 92% of the total deaths. The extended chart shews that this excess is largely accounted for by the deaths under one month, and those again by the deaths under one week.

The chart of sub-group (5) however does not indicate anything like the same predominance of the deaths under three months, nor do the deaths under one month, or under one week, form nearly so large a proportion of the total.

The actual proportions are as follows:—

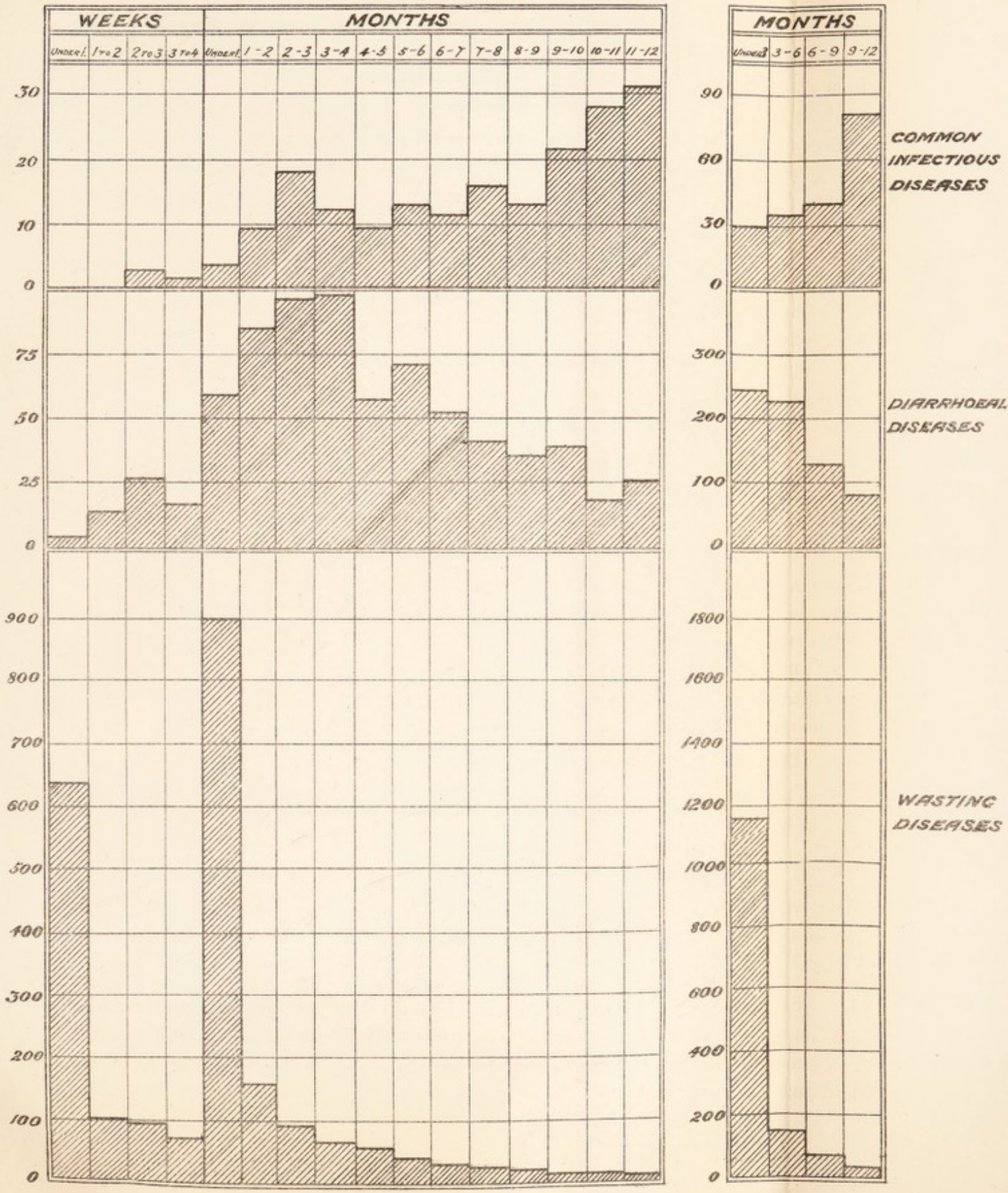
SUB-GROUPS 1, 2, 3 and 4.		SUB-GROUP 5.	
Deaths under three months ...	92%	Deaths under three months ...	55%
„ „ one month ...	78%	„ „ one month ...	28%
„ „ one week ...	58%	„ „ one week ...	11%

Of the total infantile deaths occurring within one week of birth, Wasting Diseases furnish 81%, of those within one month 69%, and of those within three months 54%.

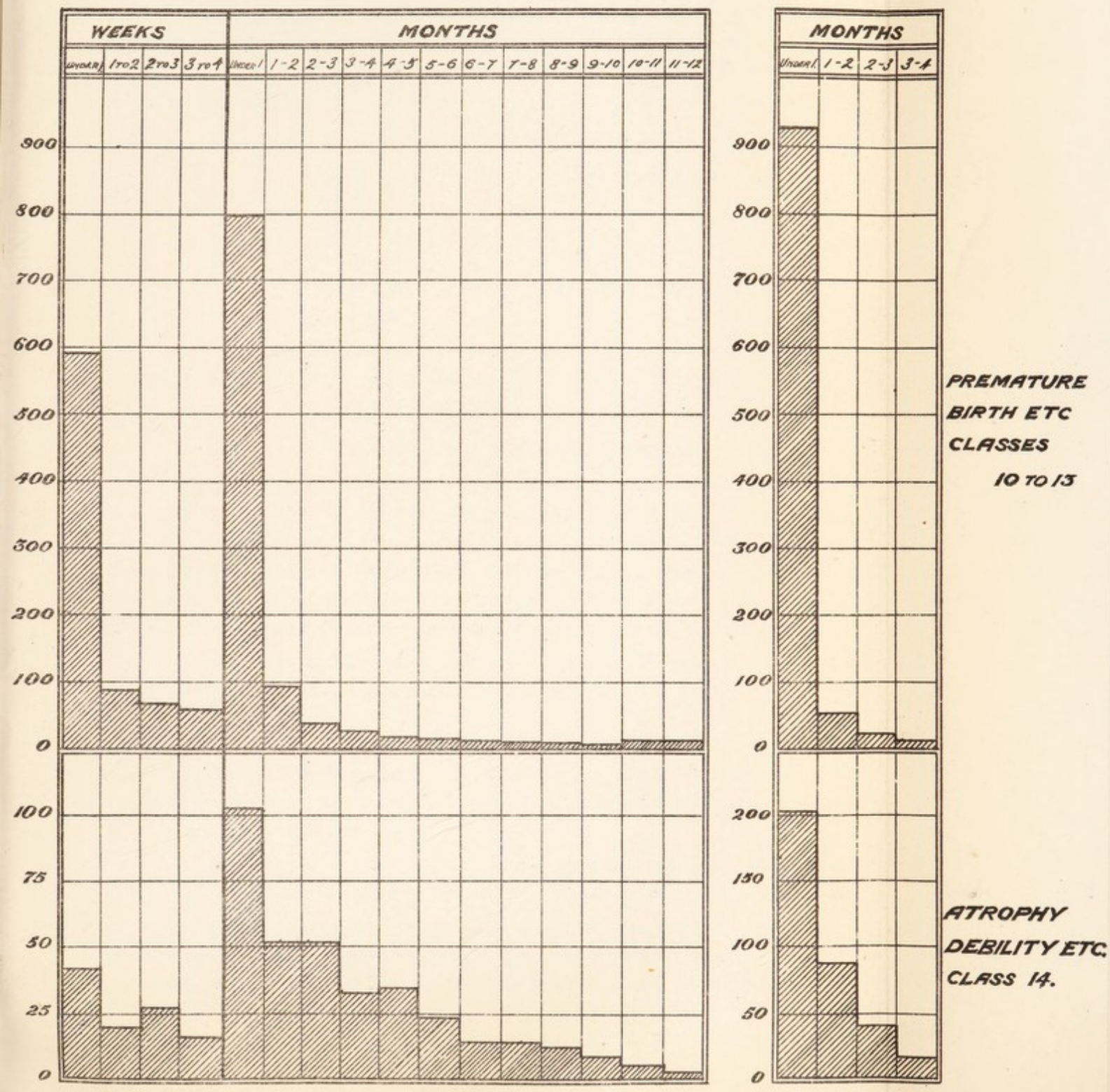
SEASONAL VARIATION.

The number of deaths from Wasting Diseases does not shew any great variation with the seasons of the year, thereby presenting a marked contrast to Diarrhœal Diseases. 23·4% of the deaths occurred in the first quarter, 22·4% in the second, 26·7% in the third, and 27·5% in the fourth.

AGE INCIDENCE OF DEATHS
FROM PRINCIPAL DISEASES
CHART G.



ACE INCIDENCE OF DEATHS
FROM PRINCIPAL DISEASES.
CHART H.



The infantile death-rate caused by this group of diseases during the period 1876-1905 is practically 50 (49·9) per 1000—the death-rate of legitimate infants being 45, and of illegitimate 102.

The death-rates from Wasting Diseases in the successive 5-year periods is shewn below. It will be noted that the later periods shew an increased rate compared with the earlier ones, but there is not that progressive increase which examination of the rates for England and Wales reveals.

INFANTILE DEATH-RATES FROM WASTING DISEASES.

1901-1905	...	...	52·6 per 1,000.
1896-1900	...	...	53.1 ,,
1891-1895	...	...	57·1 ,,
1886-1890	...	...	49·7 ,,
1881-1885	...	...	42·4 ,,
1876-1880	...	...	44·8 ,,

The death-rates from these diseases in the various Wards of the Borough were:—North-West Ward, 46·5. North Ward, 52·2. Central Ward, 52·6. East Ward, 52. West Ward, 49·6. South Ward, 40·1.

CAUSES OF WASTING DISEASES.

Wasting diseases being largely pre-natal in origin their causes must be sought in the physical condition of the parents prior to the birth of the infant. The health of the prospective mother is of special importance in this regard. Syphilis, alcoholism, and debility in either parent, Tuberculosis, infectious disease, physical strain, mental shock, defective nutrition, unhygienic surroundings, in the case of the mother, may be regarded as the chief causes of premature birth and congenital defects.

Deaths from Atrophy, etc., may also be due to these causes, but many of these undoubtedly arise from improper feeding and neglect of the infant.

DIARRHŒAL DISEASES.

Diarrhœal Diseases, comprising Epidemic or Summer Diarrhœa, Enteritis and Gastritis, are various inflammatory diseases of the stomach and bowels, of which Diarrhœa is generally a prominent symptom.

Of these, by far the most important is Epidemic Diarrhœa, which accounted for 490 out of 685 deaths from this class, while Enteritis caused 145 and Gastritis 80.

Seasonal Variation.—In no other group of diseases is the influence of season so well marked as in Diarrhœal Diseases. While deaths from these diseases may occur in any week of the year, they become specially numerous at a certain period. On referring to Chart (K) it will be noted that the deaths perceptibly increase at the beginning of the third quarter, but about the middle, a relatively enormous increase rapidly occurs

which gradually diminishes in the earlier part of the fourth quarter of the year. So largely, at this period, do deaths from Diarrhœal Diseases predominate over those from all other causes, that they make a marked impression upon the annual course of the infantile mortality—a fact which is clearly brought out on comparing Charts (B) and (K).

7·5% of the deaths occur in the first quarter, 9% in the second, 65% in the third, and 18·5% in the fourth.

AGE-INCIDENCE.—Diarrhœal Diseases proved most fatal in the earlier months of life, especially during the second, third and fourth.

35·4% of the deaths occurred within three months of birth, 33·2% between three and six months, 19% between six and nine months, and 12·4% between nine and twelve months.

During the thirty years under consideration, Diarrhœal Diseases gave rise to an annual infantile death-rate of 24·9 per 1,000; the rate amongst legitimate infants was 21·8, and amongst illegitimate 59·1, or more than double that of the legitimate infants.

The death-rates in the different Wards were as follows:—

N.W.	N.	C.	E.	W.	S.
19·8	31·2	25·9	22·5	31·0	20·0

That Diarrhœal Diseases are proving increasingly fatal is shewn by the death-rates from these diseases in the successive five-year periods.

DEATH-RATES FROM DIARRHŒAL DISEASES.

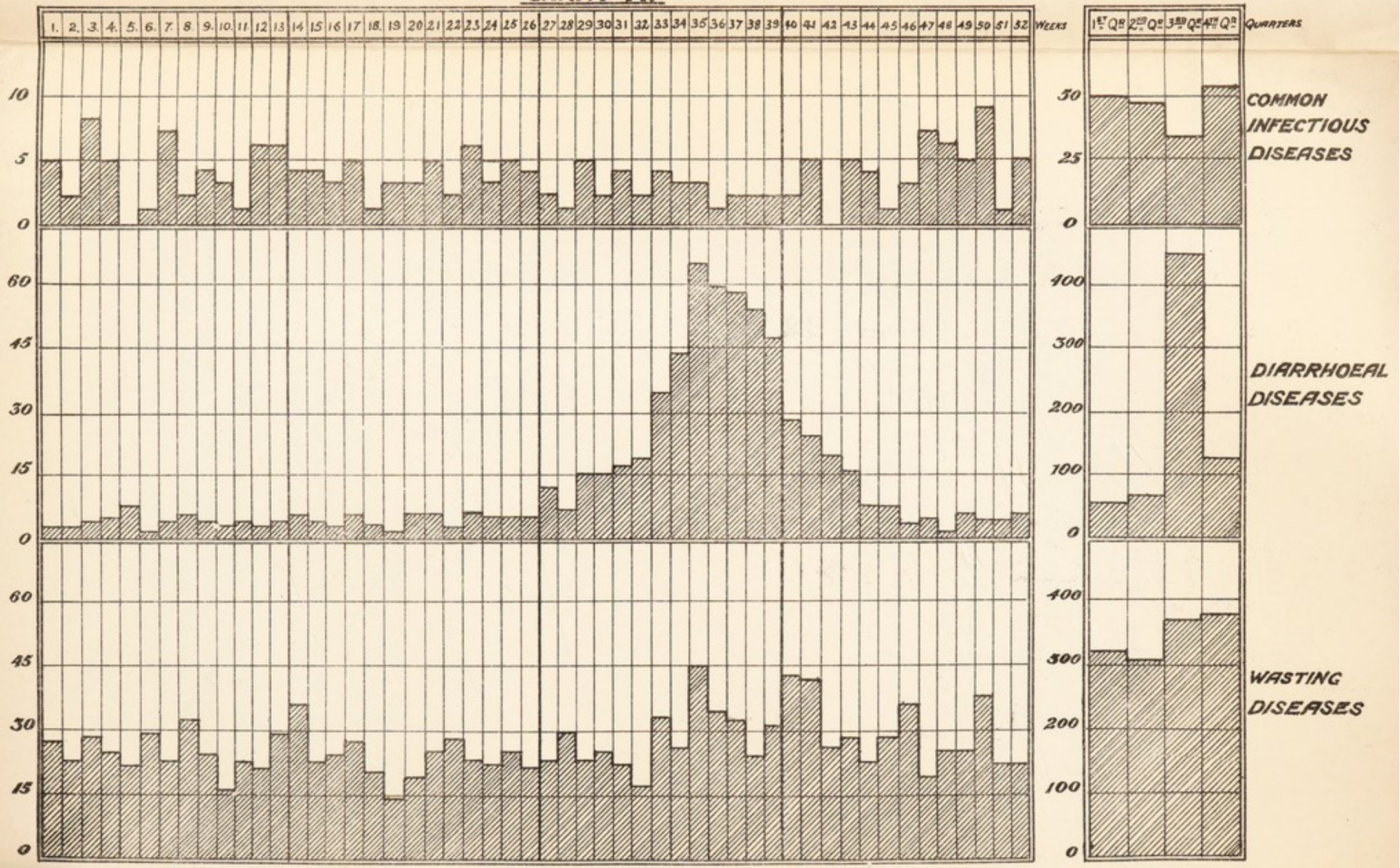
1901 1905	24·3 per 1,000	Average 30·1.
1896-1900	34·5 „	
1891-1895	31·7 „	
1886-1890	16·2 „	Average 19·5
1881-1885	20·0 „	
1876-1880	22·5 „	

THE CAUSES OF EPIDEMIC DIARRHŒA.

In any community, the variation from year to year, of the infantile mortality from this disease is largely governed by meteorological conditions. Diarrhœa is most prevalent and fatal during the hottest months of the year, and especially so in those years in which the summer has been unusually hot and dry.

This connection between diarrhœal diseases and hot dry weather, although marked, is not a simple one. Generally, it may be said that the increased prevalence and fatality of diarrhœal disease are more related to the temperature of the soil, than that of the air.

SEASONAL VARIATION OF DEATHS
FROM PRINCIPAL DISEASES
CHART K.



Formerly it was stated that the summer rise of the diarrhœal mortality did not begin until the temperature of the 4 ft. soil thermometer registered 56° F.; that the greatest mortality occurred in the week in which the earth temperature attained its maximum, and that the fall in the mortality coincided with that of the earth temperature.

To this general rule numerous exceptions have been noted. Thus, a rise in the soil temperature, early in the summer, above the limit indicated, has not been followed by an increased mortality from Diarrhœa. Similarly with respect to drought, a general connection between it and increased Diarrhœal mortality has been noted, but the exact relation has not been defined.

That heat and drought are not direct causes of Diarrhœa is evident from other considerations. Thus, the different parts of a town or district, subjected to precisely the same meteorological conditions may, and frequently do, shew widely different death-rates from Diarrhœa.

Further, Diarrhœa is closely associated with the existence of insanitary conditions Towns with water closets, and a proper system of sewers have, as a rule, lower Diarrhœa death rates than those with privies and other insanitary conveniences. Similarly, districts in which cleansing of streets, passages and yards is imperfectly carried out, and organic refuse of all kinds allowed to accumulate, have a high infantile death-rate from Diarrhœa.

Briefly, it may be said that Diarrhœa is a filth disease, due to the ingestion of food contaminated with germs of excremental origin. The insanitary conditions referred to favour the accumulation of filth, in which these germs abound, in and around dwelling houses. Heat and drought not only vigorously promote the multiplication of such germs, but favour their dissemination by the formation of dust. This germ-laden dust may be carried by the wind, and gain entrance to vessels containing food, but there are strong reasons for believing that the house-fly acts frequently as the carrier. Flies are most common during the Diarrhœal season; they abound in organic refuse, on which they feed and in which their eggs are hatched. Experiment has shown that flies and other insects can carry germs, and it is to be remembered that the fiy which is on the manure-heap one moment may be in the milk jug the next. Milk forms an excellent medium in which germs can multiply with inconceivable rapidity.

That germ-contaminated food plays the chief part in the production of Diarrhœa is suggested by other circum-tances.

Diarrhœa is very largely a disease of the hand-fed infant. The breast-fed infant not only receives the nutriment best adapted to his requirements, and heated to the proper degree, but the mother's milk is practically germ-free. There being no perfectly satisfactory substitute for the milk of the healthy mother, the hand-fed infant's wants are not completely met.

Substitutes for human milk may prove injurious from three causes :—

(1) By defective chemical composition they may be inferior in nutritive qualities on the one hand, and may set up irritation of the digestive organs on the other.

(2) The temperature at which the infant receives them is entirely at the discretion of the nurse.

(3) At all stages in their production, storage, and preparation, they may be exposed to contamination.

There can be little doubt that the increasing diarrhœal mortality of infants is largely due to the decline in the practice of breast-feeding.

CONVULSIONS.

"Convulsions" is a symptom of many diseases, and is thus a very unsatisfactory clsssification of infantile deaths. 593 deaths, or about 15 % of the total infantile mortality, were ascribed to this cause.

Seasonal Variation.—Although the deaths were most numerous in the first quarter of the year, and least in the fourth, season does not appear to have any marked influence.

Age-Incidence.—"Convulsions" proved especially fatal in the earlier months of life, 36·4 % or more than one third of the deaths occurred within one month of birth, and 56·6 % or more than one half within three months.

The total death-rate from "Convulsions" was 21·6 per 1,000; the rate among legitimate infants being 19·5, and among illegitimate 43·5 per 1,000.

The Ward death-rates were the following :—

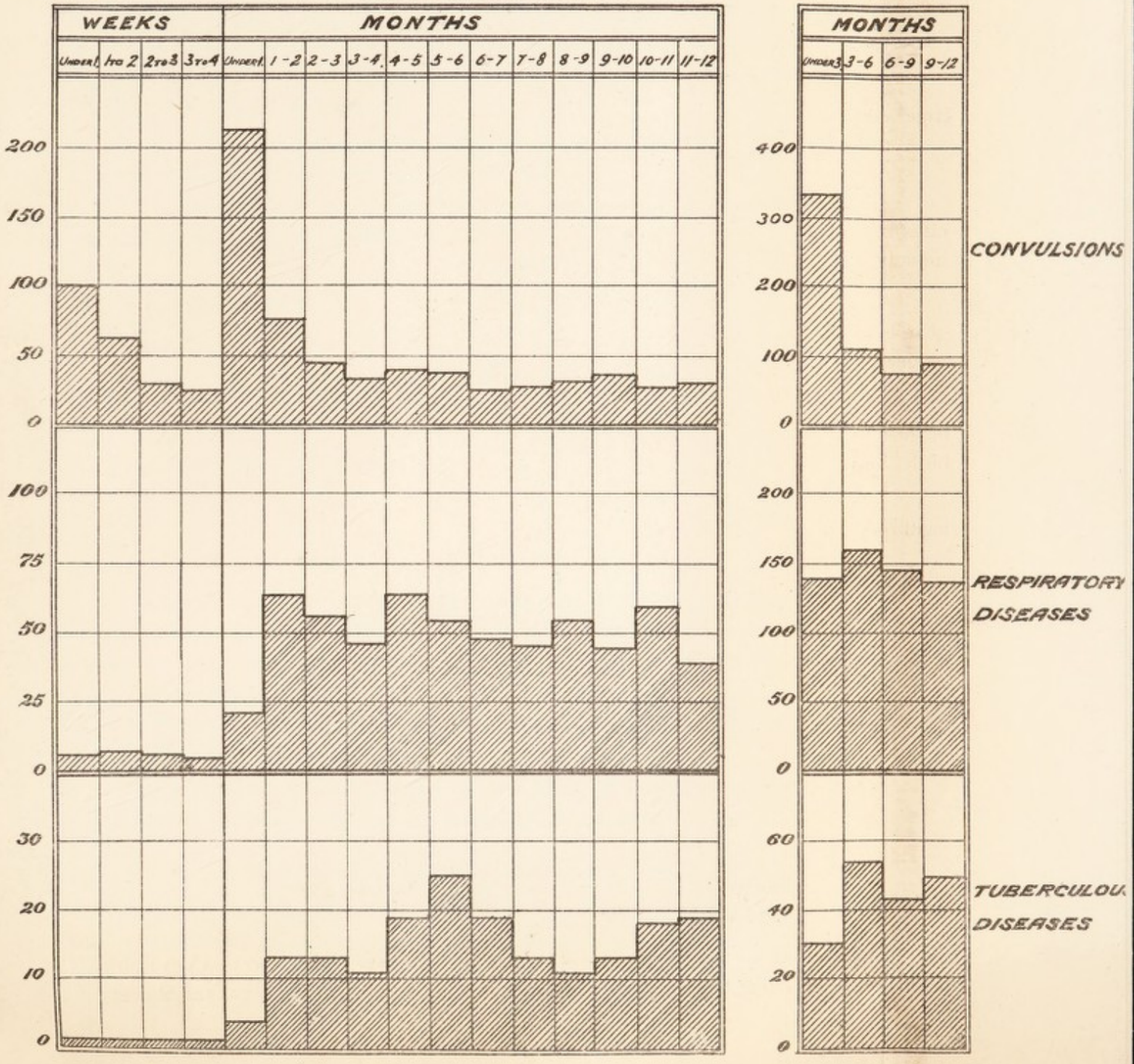
N.W.	N.	C.	E.	W.	S.
13·3.	26·8.	27·1.	25·1.	22·2.	7·6.

As will be seen from the following Table "Convulsions" is diminishing as a certified cause of death.

1901-1905	11·5 per 1,000	}	Average 14·8.
1896-1900	15·0 ,,		
1891-1895	18·0 ,,		
1886-1890	29·3 ,,	}	Average 28·2.
1881-1885	27·2 ,,		
1876-1880	28·2 ,,		

The Causes of Convulsions.—The principal diseases giving rise to Convulsions in infancy are Wasting Diseases, Diarrhœal Diseases, Meningitis, Tuberculosis and Rickets.

AGE INCIDENCE OF DEATHS
FROM PRINCIPAL DISEASES
CHART J.



RESPIRATORY DISEASES.

Respiratory Diseases caused 576 deaths, of which 398 were ascribed to Bronchitis, 166 to Pneumonia, and 12 Laryngitis.

SEASONAL VARIATION.—The deaths were most numerous in the colder months, and were least in the third quarter of the year.

AGE-INCIDENCE.—The liability of infants under the age of one month to death from Respiratory Diseases is very slight. Beyond this limit, however, the susceptibility increased, and deaths were most numerous between the ages of three and six months, after which age-period, they gradually declined.

Respiratory Diseases caused a death-rate of 20·9 per 1,000; the rate among legitimate infants being 19·9, and among illegitimate 32·1.

Examination of the death-rates from this cause in the successive quinquennia shews a marked decline in recent years.

1901-1905	14·7	Average 16·7.
1896-1900	17·0	
1891-1895	18·4	
1886-1890	27·3	Average 25·2.
1881-1885	23·6	
1876-1880	24 7	

The various Ward death-rates were;—

N.W.	N.	C.	E.	W.	S.
16.8.	21·9.	22·3.	26·0.	20·4.	8·5.

CAUSES OF RESPIRATORY DISEASES.—Infants are remarkably sensitive to extremes and changes of temperature, and are therefore specially liable to diseases associated with exposure to cold. Respiratory diseases are unusually prevalent and fatal in districts where overcrowding and other insanitary conditions exist. Life, in close, ill-ventilated and dirty houses, aided by conditions of general neglect, powerfully predisposes the infant to fatal respiratory disorders.

Further, diseases such as Rickets, Measles, and Whooping Cough are liable to terminate fatally in inflammation of the lungs and air passages.

COMMON INFECTIOUS DISEASES.

This group of diseases only gave rise to 184, or rather less than 5% of the total infantile deaths during the thirty years under consideration. The most fatal infectious disease in infancy is Whooping Cough, which caused 111 deaths. Next in order of importance is Measles, which accounted for 44 deaths.

SEASONAL VARIATION.—This largely resolves itself into the seasonal variation of Whooping Cough and Measles, which diseases are most common and fatal in the colder months. The deaths, therefore, were most numerous in the fourth quarter and least in the third.

AGE-INCIDENCE.—Unlike those from other groups of diseases, the deaths from Common Infectious Diseases become more numerous towards the end of the first year of life. The deaths within one month of birth are negligible, while between the ninth and twelfth month they are by far the most numerous.

The Common Infectious Diseases caused a death-rate during the years 1876-1905 of 6·7 per 1,000. In this group—and in this one only—is the death-rate greater among legitimate than illegitimate infants. Legitimate infants being much more numerous than illegitimate, are more exposed to infection.

The death-rates in the successive quinquennia were :—

1901-1905	...	5·6	Average 7·2.
1896-1900	...	8·3	
1891-1895	...	7·8	
1886-1890	...	7·3	Average 6·0
1881-1885	...	3·5	
1876-1880	...	7·4	

and in the several Wards :—

N.W.	N.	C.	E.	W.	S.
4·4.	6·5.	10·0.	8·9.	5·1.	0·95.

TUBERCULOUS DISEASES.

This group caused 178 deaths, of which 91 were due to abdominal Tuberculosis, 40 to Tubercular Meningitis, and 47 to other forms.

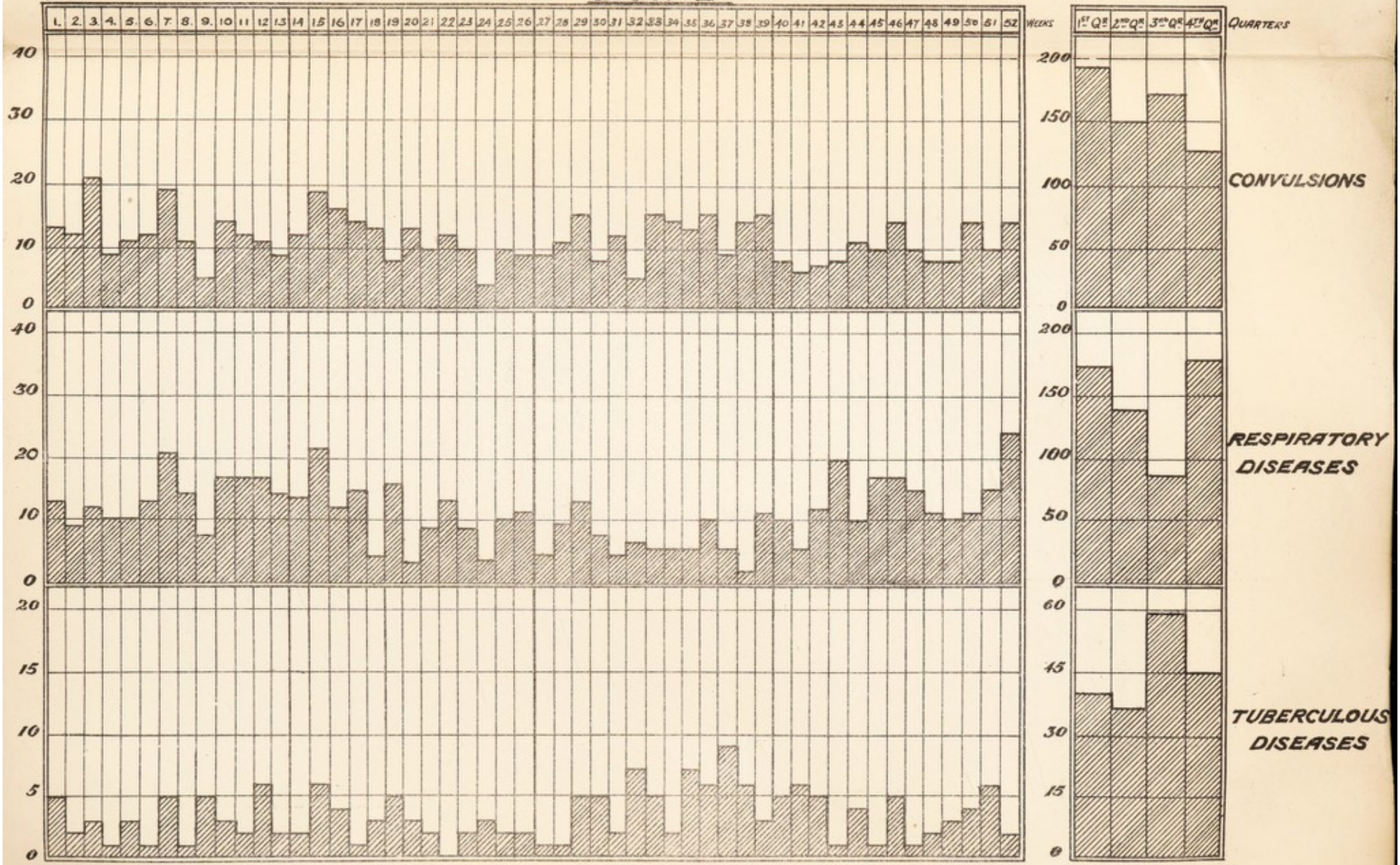
SEASONAL VARIATION.—Deaths from Tuberculosis were most numerous during the third quarter of the year, and least during the second.

AGE INCIDENCE.—The mortality under the age of one month was neglible, and under three months slight. The deaths were most numerous between the ages of three and six months, but did not markedly predominate over those at subsequent age periods.

Tuberculosis caused a death-rate of 6·4 per 1,000; that of legitimate infants being 6·0, and of illegitimate 10·8 per 1,000.

During the thirty years 1876-1905, there has been a considerable diminution in the infantile death-rate from Tuberculosis, as the following figures shew :—

SEASONAL VARIATION OF DEATHS
FROM PRINCIPAL DISEASES
CHART L.



1901-1905	2·7	
1896-1900	6·2	Average 5·3.
1891-1895	7·1	
1886-1890	6·4	
1881-1885	7·5	Average 7·4.
1876-1880	8·5	

The Ward death-rates were :—

N.W.	N.	C.	E.	W.	S.
8·4.	6·8.	5·9.	7·2.	3·2.	2·8.

THE CAUSES OF TUBERCULOUS DISEASES.

Tubercle is very rarely, if ever, transmitted from parent to child, but it is none the less clear that a marked predisposition to the disease is frequently inherited. The comparative frequency of abdominal forms of Tuberculosis in infancy and early childhood suggest the likelihood of the germs having been conveyed by milk.

As at higher ages, deaths from Tuberculosis in infancy are associated with insanitary conditions, poverty and neglect.

SYPHILIS.

Although only 79 deaths were certified as due to Syphilis, it cannot be doubted that this insignificant number by no means adequately indicates the full effects of Syphilis upon the infantile mortality.

Syphilis is a prolific cause of premature birth, atrophy, and debility, and many of the deaths under these headings would have been properly assigned to this class.

Syphilis is thus not only an immediate cause of death, but by producing great constitutional enfeeblement, it predisposes to death from other diseases.

The influence upon pre-natal life is specially marked, a large proportion of still births being due to it. These, however, do not come within the scope of infantile mortality.

Syphilis is a contagious and entirely preventible disease, for the dissemination of which immorality is largely responsible. The disease is directly transmitted from either parent to the unfortunate offspring.

The apparent death-rate from this cause was 2·8 per 1,000, but there was a very marked difference between the death-rates of legitimate and illegitimate infants, the former being 1·9 and the latter being 12·6.

In no other class of deaths is the mortality of illegitimate infants so markedly in excess.

RICKETS.

This disease generally begins in the first year of life, but being chronic in duration, it may not terminate fatally until after that period. Hence its injurious influence upon the young cannot be estimated from the very few deaths (21), under one year, actually ascribed to it.

Rickets is a constitutional disease, the most obvious effects of which are noticeable in alterations and distortion of the bones. It is essentially an expression of defective nutrition, and is therefore almost entirely met with in the hand-fed infant. Unhygienic condition of life markedly favour its production. Rickety infants evince but feeble resisting power to injurious influences, and they are especially prone to death from Diarrhœa, Convulsions and Respiratory Disorders.

THE EFFECTS OF ILLEGITIMACY.

The malign influence which illegitimacy exerts upon infant life has been already shewn in the excessive death-rate from all causes of illegitimate as compared with legitimate infants.

Having now considered the principal causes of death, we are in a position to note the effects of illegitimacy upon the death-rate from each of these groups of disease.

The six principal groups of disease contribute practically the same proportion of the total deaths in each class of infants, so that the remaining diseases need not be considered in comparing the two classes. In five of the principal groups the death-rates of illegitimate infants are greater, in varying degrees, than those of legitimate. The exception formed by the group of Common Infectious Diseases is more apparent than real. The higher death-rate of legitimate infants from this class is simply due to the fact that legitimate infants are several times more numerous than illegitimate, and therefore present many more points of contact with infection. If the death-rate of legitimate infants from each of the five principal causes be represented by 1, then the corresponding death-rates of illegitimates are as follows:—

	Legitimate.		Illegitimate.
Diarrhœal Diseases	1	...	2·7
Wasting Diseases	1	...	2·2
Convulsions	1	...	2·2
Tuberculous Diseases	1	...	1·8
Respiratory Diseases	1	...	1·6

If the death-rates from Syphilis, however, be compared, the ratio is

1 ... 6·6.

CONCLUSION.

The mortality of infants stands in a close relation to the social condition of the parents, the death-rates being highest among the poorest classes, and lowest in the well-to-do sections of the community.

Poverty involves a low standard of housing, food, clothing, and education, and may be accompanied by carelessness, intemperance, and other forms of vice. The injurious effects on infant life of vice, ignorance, and neglect, find their maximum expression in the excessive death-rate of illegitimate infants.

Illegitimate infants die from precisely the same diseases as legitimate, but at much higher rates.

RECOMMENDATIONS.

The study of the foregoing pages will have made it apparent that the causes of infantile mortality are both numerous and varied, and that no single measure can therefore be relied upon to effect a marked reduction in the waste of infant life.

The problem must be attacked from all sides, and every agency which will prevent disease, protect feebleness, and promote health, must be called into play.

The severe handicap which illegitimacy places upon the infant in the struggle for existence has been amply demonstrated in the preceding pages.

The reduction of illegitimacy itself lies outwith the scope of the Sanitary Authority, and must be left to religious, moral and social influences; but the Sanitary Authority may do much to mitigate the conditions which affect injuriously the health of illegitimate and legitimate infants. Briefly, the activities of the Sanitary Authority will find ample outlet in promoting a higher standard of sanitation throughout the town, and more especially in those districts with high infantile death-rates.

Two improvements are clearly indicated: (1) the systematic reduction in number, and as soon as practicable, the abolition of privies. (2) The more frequent removal, and more efficient disposal of house and street refuse.

The pollution of the soil which has been seen to play an important part in the causation of diarrhœa, may be lessened by the abolition of privies, more frequent cleansing, and proper paving of yards and passages.

The purity of the milk supply is of the highest importance, and this should be ensured by more stringent bye-laws for the regulation of dairies and cowsheds, and by a rigorous application of the Food and Drugs Acts which deal with adulteration.

These recommendations are all covered by the powers already at the disposa of the Corporation, but other measures are of no less importance. General measures, however, must be supplemented by action regarding the particular infant.

Before any procedure respecting the individual infant can be instituted, the Sanitary Authority must be aware of the infant's existence, and in this respect the present law is gravely defective.

It has already been noted that one-third of the infantile deaths occur under the age of one month. But the law allows 42 days or six weeks to elapse before a birth need be registered.

In the case of infants dying under this age, birth and death are registered at the same time. Hence it may be said that no control can at present be exercised over the lives of one-third of the infants who die in their first year.

Obviously, a much earlier registration (or rather notification to the Sanitary Authority) of birth is a crying necessity. Several towns have in operation a voluntary scheme whereby a notification within 48 hours of birth is encouraged by the payment of a shilling fee for each notification. In Huddersfield this notification has been made compulsory by a local Act, and other towns are pressing for similar powers.

The voluntary scheme has much to recommend it and the cost involved would be trifling.

But notification of itself is of little use, and must be followed by definite administrative action.

The minimum of such would be the distribution to each person notifying a birth of a card or leaflet containing hints on the feeding and rearing of infants.

A much better plan would be the appointment of a lady health visitor, who would visit the house on receipt of the notification and give personal instruction and aid in care of the infant and domestic hygiene.

Much of the infantile mortality depends, in the last analysis, on the ignorance of parents of the simplest laws of health, and this could be best overcome by instruction from a health visitor. The benefits which would accrue to the community by the appointment of such an official would obviously not be limited to a reduction in the infantile death-rate.

Prevention being better than cure, steps should be taken to ensure that the girls now at school, the great majority of whom will be mothers in the future, receive adequate instruction in the elements of personal and domestic hygiene.

As subsidiary measures, popular lectures on hygiene should be given by the Medical Officer of Health and others to stimulate public interest in these important matters.

With the advent of summer placards should be posted calling attention to the urgent necessity of strict cleanliness being observed in connection with all vessels containing milk or other foods, and of the adequate protection of their contents from dust and flies.