On the effect of migrations in disturbing local rates of mortality, as exemplified in the statistics of London and the surrounding country, for the years 1851-60 : being a paper read before the Institute of Actuaries / by Thomas A. Welton.

12

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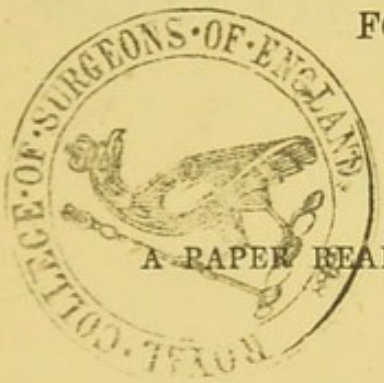

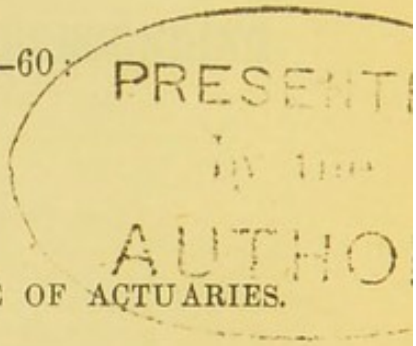

BEING

A PAPER READ BEFORE THE INSTITUTE OF ACTUARIES.

ILLUSTRATED WITH COLOURED DIAGRAMS.

BY

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FOR THE YEARS 1851–60.

Introduction.

I PROPOSE in this paper to deal with a question which has an important bearing upon those calculations as to deathrates, which are now so widely circulated and so generally felt to possess interest.

It has occurred to the Registrar-General, and, as I believe, to other inquirers, to remark that the mortality happening in London is diminished, "because domestic servants, shopwomen and milliners, " who have come from the country, retire when health fails them " to their native air."

It is obvious that the resort of sick persons to country districts would produce an effect on the mortality in such districts of the opposite nature. And I suppose that few would be surprised if it were found that places on the south coast, to which persons suffering from consumption and other ailments are apt to remove, exhibited heavy deathrates. But I do not think that the aggravation of mortality at ages 15–35, which happens in the most obscure districts and amongst the humblest families, has ever

been thoroughly appreciated, or more distinctly pointed to than it is in the paragraph just quoted.

Researches into the comparative mortality occurring in different parts of Lancashire and Cheshire led me to perceive

(1) that a striking depression in the mortality of Liverpool (with its environs*) at ages 10–35 coincided with the circumstance that enormous numbers of immigrants, both from Ireland and from parts of England and Wales, served to sustain the rapid increase of population, for which that unhealthy town is remarkable; and

(2) that in the rural districts of North Lancashire, which lose a portion of the natural increase of their inhabitants by emigration, there was a slight rise in the relative rates of mortality at the same ages:—

Ages.	Deathrates, 1851–60, per 100 Persons.						Per Cent. on English Rates.			
	England and Wales.		Liverpool.		North Lancashire.		Liverpool.		North Lancashire.	
	Males.	Females.	Males.	Females.	Males.	Females.	Males.	Females.	Males.	Females.
0 – 5	7·24	6·27	9·93	9·02	5·26	4·50	137	144	73	72
5 –	·85	·84	1·15	1·11	·82	·87	135	131	97	103
10 –	·49	·51	·54	·52	·54	·52	111	102	110	102
15 –	·67	·74	·72	·64	·69	·81	107	86	103	110
20 –	·88	·85	·98	·79	·96	·99	111	92	109	117
25 –	·96	·99	1·22	1·09	1·01	1·09	128	110	105	110
35 –	1·25	1·21	1·76	1·56	1·24	1·26	141	128	99	104
45 –	1·80	1·52	2·58	2·12	1·66	1·59	144	140	92	105
55 and under 65	3·08	2·70	4·32	3·57	2·84	2·58	140	132	92	96

It will be seen that at ages 0–10 and 45–65 Liverpool is very unhealthy for both males and females. At the same ages North Lancashire is not unhealthy; indeed, at ages 0–5, the mortality there, of both boys and girls, is little more than one-half that observed in Liverpool.

But at ages 15–25, the female deathrates in North Lancashire are much higher than in Liverpool. And at ages 15–65, the female deathrates in Liverpool are depressed as compared with the male deathrates; the contrary being the case in North Lancashire.

The general aspect of the figures is consistent with an idea, that the normal rates of mortality in Liverpool are from 30 to 40

* The Districts of Liverpool, West Derby, Birkenhead, Wirral, Prescot, and Ormskirk.

per cent. higher than the English rates; but that they are depressed, through the operation of some special causes, between ages 10 and 35, and that such causes have a greater influence over the female than the male sex.

There are so many diverse attractions influencing the migrations of natives of Lancashire and Cheshire, that to identify any large district as the principal "recruiting ground" of the population of Liverpool, is out of the question. But the problem as to the effect of migrations on rates of mortality having once been seen to possess great importance, I was led to consider the question, where a better example could be found. And I concluded that the most important instance, and the one which promised to repay the most careful investigation, was that of the Metropolis and the surrounding counties.

The figures for the Metropolitan Division correspond in a remarkable manner with those just given for Liverpool and its neighbourhood:—

Ages.	Per Cent. on English Rates.				Liverpool more than London.	
	London.		Liverpool.			
	Males.	Females.	Males.	Females.	Males.	Females.
0 – 5	115	116	137	144	22	28
5 –	114	109	135	131	21	22
10 –	93	82	111	102	18	20
15 –	93	74	107	86	14	12
20 –	94	76	111	92	17	16
25 –	110	88	128	110	18	22
35 –	131	105	141	128	10	23
45 and under 55	137	119	144	140	7	21

With hardly an exception, these ratios rise and fall together, London being throughout less insalubrious than Liverpool, and both places being apparently most healthful for persons at the age 15–20.

On referring to the observed mortality in the Eastern Counties, whence so many of the working class in London are derived, and where comparatively few persons choose to reside for the benefit of their health, we have the following ratios:—

Ages.	Per Cent. on English Rates.				Eastern Counties compared with London.	
	London.		Eastern Counties.			
	Males.	Females.	Males.	Females.	Males.	Females.
0 – 5	115	116	84	82	– 31	– 34
5 –	114	109	86	92	– 28	– 17
10 –	93	82	94	111	+ 1	+ 29
15 –	93	74	96	115	+ 3	+ 41
20 –	94	76	104	113	+ 10	+ 37
25 –	110	88	92	101	– 18	+ 13
35 –	131	105	81	93	– 50	– 12
45 and under 55	137	119	74	84	– 63	– 35

Anything more thoroughly contrasted cannot well be conceived, and it is no wonder if such results, so near the surface, have put me upon making a more extended inquiry.

Characteristics of the Area of this Inquiry.

The country extending about seventy or eighty miles round London is extremely free from peculiarities in the circumstances or occupations of its people. No manufactures of striking magnitude, no mines, no great seaports are to be met with in that wide circuit. The most remarkable features are the dockyard towns, Portsmouth and Chatham, the camp at Aldershot, the huge watering place, Brighton, and the two Universities. As for Ipswich, Reading, Maidstone, and places of the like character, such third or fourth-rate towns are naturally met with at a moderate distance from one another and from the capital, in fully peopled agricultural districts. Southampton, like Gravesend and Folkestone, owes much of its importance to the Metropolis, which may be said to have, within the district indicated, many dependencies but no rivals.

The principal industry in the outlying parts of this great district is beyond comparison agriculture, and it is a matter of common observation, not only that agriculture offers employment for but limited numbers of the female sex, but that recent improvements tend to diminish the number of male labourers required.

It was therefore natural that in the ten years 1851–61, during which period the number of adult persons employed in agriculture in this country absolutely decreased, there should be a considerable migration from the agricultural districts surrounding the Metropolis; in the Eastern Counties, for example, where the

natural increase by births in excess of deaths would have been about 140,000 persons, only 27,472 were found to have been added to the population enumerated in 1851, in the succeeding 10 years.

The Registration Divisions, numbered II., III. and IV., comprehend the rural districts which surround the Metropolis, and also the County of Norfolk.

The following tables exhibit in a summary form, (1) the birthplaces of the inhabitants of London, the surrounding counties, and the remainder of England and Wales; (2) the computed numbers of persons who removed from the one of these three divisions to either of the others or abroad, during the ten years 1851–61:—

Born in	Living (in 1861) in			
	London.	Divisions II., III. and IV.	The other Divisions.	Totals.
London	1,741,177	205,996	113,920	2,061,093
Divisions II., III. and IV.	526,043	3,754,400	211,015	4,491,458
The other Divisions	326,951	230,473	12,009,975	12,567,399
England and Wales	2,594,171	4,190,869	12,334,910	19,119,950
Scotland, Ireland, and other Countries	209,818	90,606	645,850	946,274
Totals	2,803,989	4,281,475	12,980,760	20,066,224

Migrations in 1851–1861 :—

Birthplaces of those who Removed.	Where they Removed to.				
	London.	Divisions II., III. and IV.	The other Divisions.	Other Countries.	Totals.
London	..	94,782	43,291	31,267	169,340
Divisions II., III. and IV.	160,545	..	82,404	199,097	442,046
The other Divisions	90,993	93,897	..	432,214	617,104
England and Wales	251,538	188,679	125,695	662,578	1,228,490
Scotland	10,952	8,375	45,958		
Ireland	22,529	19,887	164,539		
Islands in the British Seas	1,698	1,623	4,204		
Other Countries	31,486	12,968	36,039		
Totals	318,203	231,532	376,435		

The natural increase in London being about 292,890 persons, was raised by these migrations to 441,753. The natural increase in the surrounding counties, being about 519,381, was reduced by migration to 308,867.

Partly through the immigration of rather greater numbers of women than of men, but chiefly through the emigration of more men than women, and the excessive mortality among males, the numbers of the sexes in London are very unequal, the females exceeding the males, in 1861, by more than 188,000. But there is no great excess of female population in the surrounding counties; in fact, there is in many places rather a deficiency.

The following were the numbers of each sex enumerated in the divisions mentioned, in 1861 :—

Ages.	London.		Divisions II., III. and IV.	
	Males.	Females.	Males.	Females.
0 – 10	330,228	332,327	537,689	532,667
10 – 20	250,748	272,756	447,126	432,665
20 – 35	336,971	417,220	457,951	499,304
35 – 45	170,434	195,983	238,947	254,339
45 – 55	114,279	132,639	183,609	191,221
55 and upwards	105,121	145,283	247,692	262,528
Totals . .	1,307,781	1,496,208	2,113,014	2,172,724

The disparity in numbers at particular ages will appear on examination of the following statement :—

Ages.	Females to 100 Males.		
	London.	Divisions II., III. and IV.	England and Wales.
0 – 10	100·6	99·1	99·6
10 – 20	108·8	96·8	100·1
20 – 35	123·8	109·0	112·1
35 – 45	115·0	106·4	106·7
45 – 55	116·1	104·1	105·5
55 and upwards	138·2	106·0	112·9

The proportions returned at several ages are shown in the next table :—

Ages.	To 1,000 Inhabitants.					
	London.		Divisions II., III. and IV.		England and Wales.	
	Males.	Females.	Males.	Females.	Males.	Females.
0 – 10	118	119	125	124	126	125
10 – 20	89	97	104	101	101	101
20 – 35	120	149	107	117	112	126
35 – 45	61	70	56	59	57	61
45 – 55	41	47	43	45	42	44
55 and upwards	37	52	58	61	49	56

It thus appears that in London there are relatively few persons under 20 years of age, and many aged 20 to 45. At 55 and upwards there is a deficiency of males, and in a less degree, of females. In the surrounding counties the numbers aged 20–35 are small, but there is an excess of persons aged 55 and upwards.

The ages of the immigrants into London can only be matter of conjecture. But the age and sex of inhabitants not natives enumerated in 1861 being known, viz.:—

Natives of	Males.		Females.	
	Under 20.	20 and upwards.	Under 20.	20 and upwards.
Other English Divisions ..	74,652	309,051	84,900	384,391
Scotland	2,708	17,399	2,799	12,827
Ireland.....	6,845	40,740	7,195	52,097
Other Countries	8,940	30,219	8,224	19,825

and the computed *net* immigration in the preceding ten years being—

From other English Divisions . .	251,538
„ Scotland	10,952
„ Ireland	22,529
„ other Countries . . .	33,184
In all	318,203 persons,

it may fairly be inferred that a considerable majority of the immigrants were under 20 years of age. If, for example, 2,000 persons had annually immigrated at each year of age between 10 and 20, this would have amounted to an immigration of 200,000 persons under 20 within the 10 years, which number, at the end of that term, would have been represented by not more than 108,000 persons, under 20 years of age, and not less than 85,000 persons,

aged 20 years and upwards. But there were as many as 196,263 immigrants enumerated in 1861 at ages under 20. And although I do not forget the circumstance that a number of children under 10 are brought to London by their parents, I cannot but think that the remaining 88,000 should be deemed to be more than sufficient to represent the survivors of such children, and that we are consequently at liberty to infer a net immigration of at least 200,000, but more probably 250,000 persons, at ages under 20, within the 10 years.

It is not to be lost sight of, that, through the reflux of some of the immigrants (of course at rather higher ages than those of the bulk of persons who arrive) the *net* result comprises a greater proportion of young persons than does the gross immigration. For instance, the immigrants in a particular year might number

25,000, aged 0–20,
10,000, aged 20 and upwards;

but if there were a reflux of

5,000, aged 0–20,
5,000, aged 20 and upwards;

the net result would show, instead of 71 per cent., 80 per cent. under 20 years of age.

On referring to the Census of Occupations, I find that the principal employments for inhabitants of London aged 10–20 and 20–35, are as under :—

	Males.	
	Aged 10–20.	Aged 20–35.
Domestic Servant	7,946	15,447
Messenger, Porter, Errand Boy	15,844	6,714
Warehouseman	1,144	2,776
Commercial Clerk	6,268	10,200
Law Clerk	1,764	2,728
Seaman (Merchant Service)	2,488	7,218
Dock Servant, Labourer	1,139	4,470
Railway Official, Servant	,984	3,543
Carman, Carrier, Carter, Drayman	1,748	6,791
Labourer	6,555	18,300
Building Trades (Sub. Order 14)	9,078	33,752
Blacksmith	1,517	4,079
Engine and Machine Maker	1,869	5,171
Printer	3,852	5,393
Baker	1,747	4,801
Butcher	2,357	4,383
Grocer	1,758	3,850
Draper, Mercer	2,341	5,059
Tailor	2,003	7,842
Shoemaker, Bootmaker	4,573	12,005
Cabinet Maker, Upholsterer	1,610	4,747
Soldier	1,222	8,083

	Females.	
	Aged 10–20.	Aged 20–35.
Domestic Servant	60,328	92,776
Governess	,674	3,433
General Teacher	1,413	,728
Milliner, Dressmaker	10,648	28,179
Shirtmaker, Seamstress	4,126	9,741
Tailoress	2,376	5,426
Shoemaker, Bootmaker	1,794	3,813
Artificial Flower-maker	1,782	1,780
Bookbinder	1,532	1,682
Laundress	2,646	11,753
Silk manufacture	1,028	1,859

The numbers of women employed as domestic servants being so large, and a very considerable proportion of the female immigrants being unskilled poor persons, it is likely that many of the 153,000 female servants aged 10–35 were immigrants. Girls brought up in London are, I understand, for the most part inclined to betake themselves to other occupations, and for doing so they have many opportunities. At all events, a great proportion of the female immigrants, whether employed as servants or as milliners, are so circumstanced that in case of serious illness they have almost no choice but to return to the home of their parents. They are as little attached to the place as it is possible they could be. Such a remark, I believe, applies to a much smaller proportion of the male immigrants; indeed, it is probable that of those above 25 years of age, the majority have married and established themselves in town.

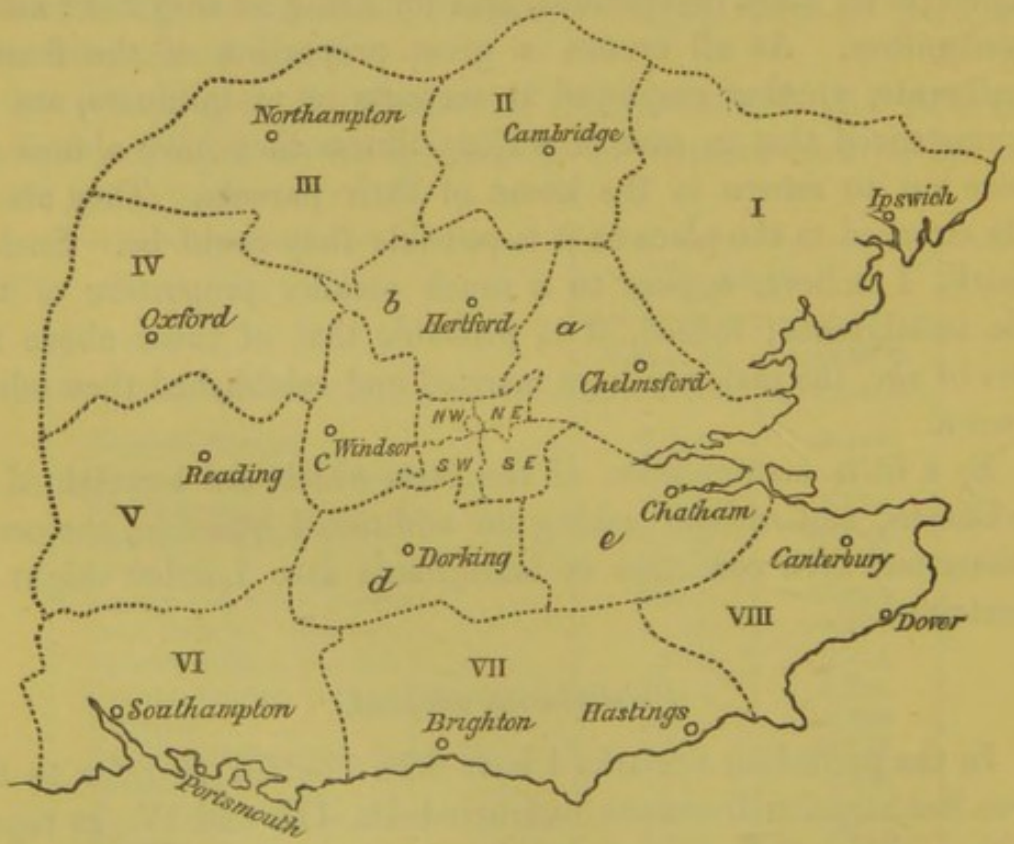
By a little manipulation of the facts which are ascertained at the Census, and without asking an additional question, the occupations and civil condition of immigrants into London might be ascertained.

Subdivisions adopted.

In the preceding remarks I have been content to refer to the three Registration Divisions numbered II., III. and IV., as representing with sufficient accuracy the country round London. But on approaching the subject of deathrates it becomes necessary to discriminate more carefully.

The following map will show, better than anything else, the plan I have adopted, for the ascertainment of the facts most interesting and important in connection with this inquiry, viz. :—

1. What are the rates of mortality amongst males and females at different ages in the great district having London for its centre and extending 70 or 80 miles around?
2. What are the rates in the central parts of London* which are built over or otherwise occupied so that no material increase of the existing house accommodation is possible?
3. What are the rates in the remainder of London and its suburbs, dividing the same into four quarters for the sake of discovering local variations?
4. What are the rates in a belt of country, just outside the suburbs, in which many families connected with London reside, such belt being again divided into several parts?
5. What are the rates in the outer belt of country, where not so many natives of London reside, and where towns of some magnitude are met with? By allotting separate areas to certain important towns, eight subdivisions of this Outer Belt have been made.



The names of the Registration Districts comprised in each subdivision are shown in Appendix A.

* In determining this question I have been obliged to exclude many districts whereof part but not the whole would answer this description: the data being given for entire Registration Districts only.

Mortality: Principal Results.

The average rate of mortality within the great circle delineated on the map appears to have been in 1851–60, 21·5 per thousand. The national rate was 22·2 per thousand, and the average rate in all parts of England beyond the circle in question was 22·5 per thousand.*

The rates of mortality at particular ages, distinguishing the sexes, were as under:—

Ages.	London (Great Circle).		Rest of England and Wales.		England and Wales.	
	Males.	Females.	Males.	Females.	Males.	Females.
0 –	68·0	58·8	74·4	64·6	72·4	62·7
5 –	8·1	8·0	8·7	8·6	8·5	8·4
10 –	4·3	4·8	5·1	5·2	4·9	5·1
15 –	6·1	6·8	7·0	7·7	6·7	7·4
20 –	8·6	7·9	8·9	8·9	8·8	8·5
25 –	10·0	9·3	9·4	10·2	9·6	9·9
35 –	13·7	12·1	11·9	12·2	12·5	12·1
45 –	19·2	15·7	17·4	15·0	18·0	15·2
55 –	32·1	28·0	30·3	26·5	30·8	27·0
65 –	67·2	60·9	64·5	57·6	65·3	58·7
75 and upwards	168·8	158·6	163·9	154·0	165·4	155·5
All Ages..	22·6	20·5	23·3	21·7	23·0	21·3

From the above table we gather, first, that the absolute death-rates were lower in the London Circle than in the remainder of the country at ages

0–25 among males,
0–45 „ females,

but that the reverse was the case at all higher ages. Next, that the deathrates among females were comparatively depressed in the London Circle at ages 20–45, and in a less degree at ages 45–55; thus:—

Ages.	Female Deathrate compared with Male Rate.	
	London Circle.	Rest of England.
20 –	91 per cent.	100 per cent.
25 –	93 „	109 „
35 –	88 „	103 „
45 –	81 „	86 „
55 –	87 „	87 „

* In all the tables, and throughout the rest of this paper, the rates of mortality shown are averages for the ten years 1851–60 per thousand persons of the age and sex mentioned. The age is written thus: 0 – signifies 0 and under 5, 25 – means 25 and under 35; the range of ages is always from the figure mentioned to the next higher age.

Having regard to facts which are yet to be explained in detail, I am inclined to believe that the female deathrates in the London Circle are depressed through the departure of sick persons who eventually die beyond the borders of that circle, as well as by the constant immigration of healthy persons. But I by no means assert that if all the facts could be ascertained and proper allowances made, the true loss by death (in London and the surrounding districts) would appear to be at ages 20–45 as considerable amongst females as amongst males. The national averages at ages 20–25 and 35–45 shew lower deathrates amongst females than males, and although I anticipate that it would be necessary to transfer part of the deaths which happen in counties beyond the circular limit to the account of the Metropolis, thus abating the female deathrates in those counties, I see no reason to imagine that the London rates would be so much altered thereby, as to bring them up to the level of the mortality there observed amongst males. This remark applies with especial force to the ages 35–45. At ages 25–35 the national averages shew that females are less healthy than males; and although the London mortality would require to be augmented by fully seven per cent., in order to bring the female deaths up to the male standard, I am unable to say that such an augmentation is altogether unlikely to be justified by facts, when I consider that some invalids from the London Districts die abroad.

In any case, we may rest assured that the female mortality at ages 25–45 is really much heavier (as compared with that amongst males) in the further parts of the country than in the London Circle. Thus:—

	Female Mortality as compared with Male.	
	Age 25–35.	Age 35–45.
London Circle	93 per cent.	88 per cent.
Norfolk and adjacent Districts	110 „	110 „
South-Western Counties	95 „	93 „
West Midland Counties	106 „	99 „
North Midland Counties	133 „	121 „
Yorkshire	122 „	107 „
North-Western Counties	108 „	99 „
Northern Counties	113 „	103 „
Wales	99 „	105 „

It may be that the female mortality at these ages is aggravated in the manufacturing districts by reason of the employment of

women in unhealthy occupations. In the Manchester District (comprehending a very large part of the North-western Counties) the ratios were (in the same period 1851–60) :—

Age 25–35 . 115 per cent.
„ 35–45 . 104 „

although there was a large immigration of females into that district. But to pursue this investigation would carry me far beyond the limits of the present inquiry. It is enough that I have pointed to the want of regularity in the proportions of the deathrates of the sexes at the ages mentioned, which is the more remarkable inasmuch as the like proportions at ages 0–5 are wonderfully steady.

	Deathrate, Age 0–5.		Female compared with Male Deathrate.
	Males.	Females.	
London (Great Circle)	68·0	58·8	86 per cent.
Rest of England and Wales	74·4	64·6	87 „
England and Wales	72·4	62·7	87 „
Norfolk and adjacent Districts	67·3	56·7	84 „
South-Western Counties	56·3	48·7	86 „
West Midland Counties	75·6	65·5	87 „
North Midland Counties	68·3	57·8	85 „
Yorkshire	79·6	68·4	86 „
North-Western Counties	93·7	82·0	88 „
Northern Counties	69·4	61·6	89 „
Wales	61·9	54·2	87 „
Manchester District	98·7	85·4	87 „

Turning to the larger subdivisions of that great circle round London which is the subject of this paper, we find that the rates of mortality are as shown in Table III. annexed, and that if we take the mortality in England and Wales as a standard, notwithstanding any objection which might be urged against its use for that purpose, we obtain the proportional figures shown in Table IV.

It will be observed that the ratios at ages under 10 and over 45 show the country districts to be salubrious and London itself to be unhealthy. Such results being in accordance with probability, need no explanation. But the mortality at ages 10–35 indicates something very different. And when I consider that between those ages the population of London is very much disturbed by migrations, and that in particular there are great numbers of females of those ages resident in London merely for the sake of employment,

who naturally leave town in case of serious illness, I cannot contemplate the tables without the conviction being forced upon me, that to this cause, rather than to the migrations of the rich, we owe the apparently low mortality in London, and the apparently high mortality in the surrounding rural districts, at those ages.

It will be noticed that the London (Centre and Suburbs) rate is lower than that observed in either the Inner or the Outer Belt of rural districts

at ages 20–25 among males,
and 10–35 „ females,

but is higher than either at all other ages.

It is evident that the immigration of healthy young people from the country must tend to lower the standard of mortality in London at the ages 10–35, whilst such immigrants are still in their prime. But when we take into account the poverty and misery which disfigure so many parts of the Metropolis, it is quite incredible that by reason of such immigration the average deathrates could be reduced not only below the national standard, but even below the deathrates which prevail in salubrious country districts. And if we again consider the moderate mortality in early youth and at ages above 35 which is observed to take place in the surrounding districts, to what can we attribute the heavy deathrates in those very districts at ages 10–35 unless to such an influx of sick persons as I have suggested? When we get rid of a great many such migrations, by taking the average within the large circuit round London shown on the map, we find we have almost got rid of the irregularities in question at the same time.

The comparative mortality among males and females respectively, is, under the circumstances, disturbed to a surprising extent. Even after the influence of migrations has ceased—I mean such migrations as result from the necessities of the wage-receiving class—female mortality continues to be comparatively depressed in London, I suppose through the departure of nvalids, the daughters and wives of persons in fair circumstances, who could not themselves, if equally unwell, afford to quit their business engagements.

The following figures represent the comparative deathrates amongst females at the ages mentioned, the male rate being assumed to be 100:—

Ages.	Female Deathrate (from all Causes) compared with Male Rate.				
	Centre.	Suburbs.	Centre and Suburbs.	Inner Belt.	Outer Belt.
0	88	87	88	85	85
5	92	96	95	100	102
10	93	94	93	113	130
15	93	86	88	125	137
20	82	77	78	94	109
25	83	84	83	93	108
35	76	82	79	88	105
45	71	75	73	85	92
55	77	80	79	87	96
65	82	83	82	93	95
75 and upwards	90	90	90	94	95

Even if the female deathrates in the Outer Belt are augmented by no more than 20 per cent. at ages 10–20, and 10 per cent. at ages 20–35, by reason of the migrations to which reference has been made, no one will call such augmentations slight or unimportant. The above table shows that it is by no means unlikely that the deathrates are modified to at least the extent mentioned.

At the ages most affected by the influences now under consideration, phthisis, or tubercular consumption, is the most fatal disease. During the 10 years 1851-60 the deaths in England and Wales were as under:—

Ages.	Males.			Females.		
	All Causes.	Phthisis.	Per Cent.	All Causes.	Phthisis.	Per Cent.
0	916,882	16,820	1·8	789,701	16,125	2·0
5	94,592	5,838	6·2	93,151	6,856	7·4
10	49,393	7,725	15·6	50,424	12,885	25·6
15	61,239	21,950	35·8	68,630	32,670	47·6
20	73,090	33,565	45·9	78,497	39,465	50·3
25	129,877	54,729	42·1	148,339	68,388	46·1
35	134,064	43,017	32·1	137,722	47,342	34·4
45	142,253	30,344	21·3	126,196	25,903	20·5
55	161,473	17,442	10·8	152,746	13,480	8·8
65	186,305	6,813	3·7	195,108	5,437	2·8
75 and upwards	189,368	1,062	·6	231,665	1,067	·5

The causes of death at high ages are often obscure, and it is obvious therefore that no safe inference could be based on the calculated mortality from phthisis at ages 75 and upwards. But if my theory be correct, the same circumstances which disturb the deathrates from all causes at ages 10–35 should affect in a greater

measure the observed mortality by this particular disease, which, as it incapacitates from work some time before death, leaves ample time for that return home of sick persons on which my theory depends.

The deathrates by phthisis are shown in Tables V. and VI.

Here again the rates of mortality in London (Centre and Suburbs) fall below those observed in both the Inner and Outer Belts at ages—

20–25 among males.
10–35 „ females.

but are higher than either at almost every other age.

Contemplating the excess of the national deathrate from phthisis above that observed in the "Great Circle" at ages 10–25, it would seem probable not only that consumptive persons from London migrate beyond the limits of that circle, but that there is actually an aggravated deathrate from this disease in the rest of the country at the ages in question. But this by the way.*

It will be admitted that whether we take deaths by all causes or by phthisis alone, the results for females are by much the most remarkable. I have not commented upon the fact that the *Central* Districts of London are apparently healthier for females at ages 10–35 than the Outer Belt, where the mortality amongst infants and aged persons is low. But this greatly strengthens my argument, because in those Central Districts there is much misery, and there are several of the largest metropolitan hospitals (viz., St. Bartholomew's, Guy's, St. Thomas's, London, Westminster, King's College, and Charing Cross Hospitals), in respect of which no correction has been made, although it is certain that many persons who die in those hospitals come from what, for want of a better term, I have designated the suburbs.†

It is in the power of the authorities to obtain statistics as to the birthplaces of the dying, when, if I am right, a most inadequate

* It may also be noted that the London deathrates by phthisis occupy the respective positions of the *minimum* of the eleven divisions for females, and the *maximum* for males.

† It would be interesting to examine into the rates of mortality by other causes severally, but to do so would involve no little labour. The contrasts would in general be less striking, the female deathrates by *all causes except phthisis* being as under:—

	Ages 0–5.	5–	10–	15–	20–	25–	35–	45–
London (Centre)....	86·36	9·78	3·71	3·82	4·24	5·97	10·22	17·19
„ (Suburbs) ..	64·37	7·94	3·17	3·17	3·41	4·67	7·98	13·52
Inner Belt	46·30	6·30	3·61	4·19	4·19	5·05	7·60	11·25
Outer Belt	47·67	6·61	4·00	4·28	4·59	5·23	7·34	10·54

The Centre is thus (apparently) healthier than the Outer Belt at ages 10–25.

number of deaths of persons born in the provinces would be found to occur in London, taking into consideration the numbers of such persons residing there, at the ages 10–35. It might also be possible, in a few rural Registration Districts, where the deathrates among females are manifestly excessive at the same ages, to institute a careful inquiry during a few years into the history of those persons who died at the ages in question, so as to determine how many of them had lost their health whilst away in London or at some other distant place, and come home because unfit for work. Until some such tests are applied, I think I am bound to infer—

(1.) That the recorded mortality at ages 10–35 is not inconsistent with what might reasonably be expected, if my theory as to migrations be correct.

(2.) That such mortality furnishes no reliable evidence as to the salubrity of the Metropolis or the unhealthiness of the surrounding rural districts for persons aged 10–35.

Mortality: Results for Subdivisions.

It is not to be expected that such a conclusion as that the observed mortality at certain ages in the country districts around London should be reduced by as much as 10 to 20 per cent., and the London mortality at the same ages increased by 15 to 30 per cent., in order to arrive at the real risk of death in the respective places, will be readily accepted. I am bound, indeed, to test it as far as I can.

One of the most effective tests would be the division of the Inner and Outer Belts into parts, and comparison of the rates of mortality within each of those fractions with the London rates. If it be found that that which is true of the whole is true also with respect to either of such parts, the proof will amount to demonstration that some general cause is acting, with greater or less force, throughout the districts in question, and is powerful enough to overbear local dissimilarities, thereby rendering obscure the question as to which are the most salubrious districts, unless it can be solved by a reference to mortality at lower and higher ages.

It should be remarked here that on my hypothesis, those districts where the greatest number of servants are employed would exhibit the most favourable rates of mortality among females at ages 10–35. Less attractive districts, where there are fewer servants and fewer immigrants from London, are the most likely to send away many girls to London, and these should show the heaviest deathrates. Table I. furnishes the means of judging which districts are of either character.

Tables VII. to IX. exhibit the rates of mortality from all causes in the several subdivisions of the Great Circle, amongst males and females respectively. Tables X. to XII. show the ratios which those figures bear to the national averages.

It happens that the northern half of the Outer Belt, comprising the districts numbered I. to IV., contains the smallest proportions of female servants and of inhabitants derived from London. The average ratios for the northern and southern halves are as under:—

Ages.	Deathrates (all Causes), 1851–60.			
	Districts I. to IV.		Districts V. to VIII.	
	Males	Females.	Males.	Females.
0	61·19	51·45	54·33	46·22
5	6·97	7·06	7·15	7·41
10	4·42	5·83	4·03	5·14
15	5·99	8·99	6·11	7·49
20	8·35	10·29	9·51	9·25
25	8·62	10·60	10·35	9·93
35	10·01	11·94	12·17	11·42
45	13·67	13·70	15·90	13·56
55	24·52	24·34	26·05	24·17
65	58·07	55·63	57·76	54·20
75 and upwards	164·70	156·50	158·20	150·25

It will be seen that the mortality amongst females at ages 10–35 is highest in the Northern Districts, where also it is more excessive, in comparison with that amongst males, than in the Southern Districts.

Dividing the Inner Belt similarly, and placing Chelmsford and Maidstone Districts in the poorer group, we have :—

Ages.	Deathrates (all causes), 1851–60.			
	Districts *a* and *e*.		Districts *b*, *c* and *d*.	
	Males.	Females.	Males.	Females.
0	59·35	49·35	52·62	45·55
5	7·00	7·17	6·67	6·50
10	4·14	4·76	4·04	4·53
15	6·33	7·74	5·23	6·76
20	9·52	8·93	7·80	7·58
25	10·85	9·79	9·02	8·80
35	13·47	12·13	12·32	10·72
45	16·15	14·50	16·59	13·60
55	28·34	24·67	28·36	24·52
65	60·30	57·37	62·89	57·54
75 and upwards	164·18	151·23	167·91	159·07

Here the mortality amongst females aged 10–35 is lowest, it is true, in the richer group of districts, but then there is a still more important difference in the mortality amongst males, so that the female deathrate in both groups is lower than that amongst males at ages 20 and upwards, and there is no ground for saying that it is comparatively excessive in the poorer districts.

This anomaly, it appears to me, is caused by the existence of military hospitals at Chatham, in which there is a very heavy mortality not properly belonging to the district. If we exclude the Registration Districts of Medway, Maidstone and Gravesend, we have an almost entirely rural population in the residue of the Chelmsford and Maidstone Districts. The Registration Districts of Edmonton, Barnet and Uxbridge being excluded from the other group, it also is freed from the disturbance to its mortality caused by the great lunatic asylums of Hanwell and Colney Hatch, as well as the semi-suburban district extending northwards from Hackney, and becomes likewise in a great measure rural. The mortality in the diminished groups is found to be as under :—

Ages.	Deathrates, 1851-60 (excluding Towns, &c.).			
	Districts *a* and *e*.		Districts *b*, *c* and *d*.	
	Males.	Females.	Males.	Females.
0	56·22	46·33	52·36	45·46
5	6·71	6·97	6·63	6·50
10	4·13	4·88	4·03	4·62
15	5·77	8·11	5·11	6·96
20	8·10	8·95	7·64	7·86
25	8·73	9·57	8·48	8·67
35	11·40	11·54	10·82	10·44
45	14·79	13·76	15·09	13·05
55	26·89	23·54	27·30	24·01
65	58·79	55·99	61·12	57·61
75 and upwards	164·28	151·80	170·18	159·08

The anomaly, it will be seen, is not reproduced in the above figures. At each age from 10 to 35 the female mortality as shown above is both absolutely and relatively highest in the less wealthy of the two groups.

But, it may be urged, exceptional circumstances affect what I have termed the "Inner Belt." Let us see what would be the figures for the "Outer Belt," after excluding the principal towns, and the military camps at Aldershot and Shorncliffe.

Adhering to the division of that Belt into two parts, comprising

respectively the four northern and southern fractions, we have the understated results :—

Ages.	Deathrates, 1851–60 (excluding Towns, &c.).			
	Districts I. to IV.		Districts V. to VIII.	
	Males.	Females	Males.	Females.
0	59·28	49·47	47·34	40·18
5	6·83	6·98	6·74	6·90
10	4·39	5·98	3·92	5·31
15	5·83	9·34	5·88	8·10
20	8·27	10·65	9·24	9·89
25	8·17	10·64	9·50	10·01
35	9·46	11·73	10·54	11·11
45	12·63	13·23	13·94	12·80
55	23·38	23·90	23·81	23·18
65	56·54	55·11	55·37	53·35
75 and upwards	163·57	155·61	156·82	149·85

Here we see an extraordinary female deathrate at each age 10 to 35 in both groups; but it is nevertheless highest both absolutely and relatively in the poorer districts, as I contend it should be.

Taking, for the moment, the mortality in *London* (*centre and suburbs*) as a standard, the following would be the comparative figures for the above districts :—

Ages.	Ratios, the London Rate being 100.					
	Districts I. to IV.		Districts V. to VIII.		Towns, &c., in Outer Belt.	
	Males.	Females.	Males.	Females.	Males.	Females.
0 –	73	69	58	56	88	87
5 –	71	77	70	76	85	92
10 –	97	142	87	126	99	113
15 –	94	171	95	149	108	121
20 –	100	165	112	154	116	128
25 –	78	123	91	115	111	115
35 –	59	93	66	88	93	98
45 –	52	75	58	72	86	88
55 –	56	73	57	71	79	82
65 –	68	81	67	78	81	84

It is not pretended, of course, that these last figures show the extent to which the country mortality is aggravated by the effect of migrations; the results, extraordinary as they are, required a two-

fold cause, viz., that the London deathrates should be depressed just when the country rates are most heavy. Thus, resuming the use of the national ratios by way of standard, we have:—

Ages.	Ratios, the English Rate being 100.							
	Districts I. to IV.		Districts V. to VIII.		Towns, &c. Excluded.		London Centre and Suburbs.	
	Males.	Females.	Males.	Females.	Males.	Females.	Males.	Females.
0 –	82	79	65	64	99	99	112	114
5 –	80	83	79	82	95	99	113	108
10 –	90	118	80	105	91	94	92	83
15 –	87	127	88	110	100	89	93	74
20 –	94	125	105	116	109	97	94	76
25 –	85	107	99	101	121	100	109	87
35 –	76	97	84	91	120	102	128	104
45 –	70	87	78	84	116	103	135	117
55 –	76	88	77	86	106	99	134	121
65 –	87	94	85	91	103	98	127	117

The figures for the towns, it will be seen, resemble the London rates in several respects. Thus:—

1. There is a high deathrate amongst males at ages 25 and upwards;
2. The female deathrates are depressed in comparison with those amongst males at ages 15 and upwards;
3. The female deathrates are lowest (comparatively) at ages 10–25;

and in all these respects the facts for the country districts are of an opposite nature.

Of course, it may still be imagined, that by a different manipulation of boundaries, other results might have been arrived at; in answer to which I can say, in the first place, that I have not altered the arrangements which were originally made (as a matter of course) before the calculations were commenced, and in the next place, suppose we take the maxima and minima of a couple of my divisions. Thus:—

Outer Belt, District I., comprises 20 Registration Districts; the highest female mortality at ages 10–35 is observed in the first four undermentioned; the lowest in the second four:—

	Deathrates, 1851–60, per 1,000.							
	Males.				Females.			
	10–	15–	20–	25–	10–	15–	20–	25–
Halstead	4·88	3·04	13·18	8·68	7·83	12·94	12·29	12·21
Samford	3·43	7·58	10·43	7·72	6·19	10·77	15·26	12·34
Risbridge	4·79	4·81	8·49	8·04	7·63	11·08	11·97	13·25
Lexden	3·05	8·29	10·06	7·51	6·50	11·36	13·40	10·79
Colchester	5·23	6·70	11·68	11·51	6·09	9·50	9·38	10·58
Bosmere	5·18	4·14	6·91	6·55	5·51	8·19	8·64	10·98
Ipswich	3·54	7·25	9·38	9·71	4·00	6·55	8·42	10·76
Bury St. Edmunds	5·41	5·48	11·16	14·11	4·56	5·30	7·62	9·83

It will be seen that the lowest four include the *three towns* of greatest importance within the district (and in which the infantile deathrates are highest of any), and one rural district, Bosmere, which shows the very lowest infantile deathrate, and where, in spite of the mortality among females aged 10–35 being relatively low, it is *above* the national rates, and strikingly in excess of the male deathrates. Bosmere is situate between Ipswich and Stowmarket, and includes the small towns of Debenham and Needham Market.

Outer Belt, District II., comprises 13 Registration Districts, the highest female mortality at ages 10–35 is observed in the first three undermentioned; the lowest, in the second three.

	Deathrates, 1851–60, per 1,000.							
	Males.				Females.			
	10–	15–	20–	25–	10–	15–	20–	25–
Newmarket	5·06	5·86	8·16	9·18	6·03	9·11	11·08	12·82
Saffron Walden	4·44	5·31	9·41	6·95	6·28	8·97	11·21	10·22
Chesterton	4·93	5·45	8·78	8·29	5·89	10·66	10·57	9·25
Royston	4·20	4·88	7·97	7·25	4·75	8·57	9·05	9·76
North Witchford	3·73	6·35	8·56	8·12	3·97	7·72	7·94	8·43
Cambridge	4·65	7·58	7·95	11·99	3·71	6·94	6·86	8·16

Here, again, the only town in the district of any magnitude is at the bottom of the list, and the excess of female mortality in rural places is quite sufficiently striking.

The same influences which operate so largely to increase the apparent mortality amongst females in the "Outer Belt," extend beyond it to a considerable distance. Norfolk, for example, sends a large and constant stream of population to London, and doubtless receives back many disabled individuals. The following table gives the result for Norfolk, with the addition of some adjacent districts:—

Ages.	Deathrates, 1851–60, per 1,000.						Ratios, the English Rate being 100.			
	Norfolk.		Three Towns.		Rest of Norfolk.		Three Towns.		Rest of Norfolk.	
	Males.	Females.	Males.	Females.	Males.	Females.	Males.	Females.	Males.	Females.
0 –	67·3	56·7	88·2	75·4	62·0	51·9	122	120	86	83
5 –	7·8	8·4	9·3	9·8	7·5	8·0	109	116	88	95
10 –	4·8	5·5	4·7	5·0	4·9	5·7	96	99	100	113
15 –	6·5	7·9	6·8	5·8	6·4	8·6	102	79	96	117
20 –	8·9	9·3	8·4	8·3	9·1	9·7	95	97	103	114
25 –	8·7	9·6	9·8	9·6	8·3	9·5	102	97	87	96
35 –	9·7	10·8	13·0	11·5	8·8	10·5	104	95	71	86
45 –	12·5	12·0	17·7	14·4	11·2	11·3	99	95	62	74
55 –	22·8	20·5	31·9	25·9	20·6	18·9	103	96	67	70
65 –	52·5	45·7	67·8	54·9	48·9	42·9	104	94	75	73

Here we see that the three towns (Norwich, Lynn and Yarmouth) are much less healthy than the open country at ages 0–10 and 35 upwards. But at ages 10–25 the towns appear to be more healthy, for females at all events, than the villages. And as the rural population is very large, so that its peculiarities are impressed upon the average figures, it is probable that migrations to and from places beyond the boundary of this Norfolk District (whether London or elsewhere) contribute very much to produce the results just shown.

The mortality in the other bordering districts has not been investigated. In them, other influences may be supposed to affect the deathrates, besides the migrations to which our attention has been directed, and to do justice to the subject a very careful and extended inquiry would be requisite.

Tables XVII. to XIX. exhibit the mortality from phthisis in the several subdivisions of the Great Circle amongst males and females respectively. Tables XX. to XXII. show the ratios which those figures bear to the national averages.

Dividing the Outer Belt as before, we have:—

Ages.	Deathrates (Phthisis), 1851–60.					
	Districts I. to IV.		Districts V. to VIII.		Towns, &c., Excluded.	
	Males.	Females.	Males.	Females.	Males.	Females.
0 –	1·70	1·52	·98	1·00	1·34	1·24
5 –	·53	·68	·37	·53	·52	·63
10 –	·63	1·83	·49	1·22	·62	1·23
15 –	1·95	4·69	2·03	3·84	2·24	2·92
20 –	4·12	5·72	4·39	5·41	4·25	4·06
25 –	3·72	5·25	4·62	5·05	5·23	4·63
35 –	3·01	4·52	3·56	4·03	5·59	4·46
45 –	2·71	3·24	2·94	2·98	4·93	2·98
55 –	2·28	2·42	2·49	2·08	3·51	2·09
65 –	1·72	1·38	1·61	1·35	2·09	1·38

and the Inner Belt gives the following results (excluding the same six Registration Districts as before), viz.:—

Ages.	Deathrates (Phthisis), 1851-60.					
	Districts *a* and *e*.		Districts *b*, *c* and *d*.		Towns, &c., Excluded.	
	Males.	Females.	Males.	Females.	Males.	Females.
0	1·44	1·16	1·04	1·00	1·02	·87
5	·39	·58	·35	·47	·30	·45
10	·47	1·07	·52	1·07	·44	·88
15	1·68	3·31	1·66	3·10	2·02	2·31
20	3·28	4·30	3·63	3·99	4·68	3·53
25	3·26	4·26	3·79	4·16	5·56	4·17
35	3·45	3·89	3·74	3·59	5·19	3·84
45	2·91	2·77	3·18	2·65	3·99	2·92
55	2·65	1·88	2·74	1·97	3·23	2·31
65	1·44	1·04	1·60	1·46	2·39	1·32

Lastly, Table XXIII. gives the ratios which the deathrates by all causes amongst *females* bear to the *male deathrates*, in the various subdivisions of our "great circle;" and the range of such ratios is very remarkable.

Conclusion.

The tables have barely been explained in the remarks which I have allowed myself to make. That they disclose important facts, and that if my interpretation of those facts be disputed, another must be found, I believe all will allow.

It is rather disquieting to have one's attention called to the unsoundness of the bases upon which local deathrates, tables of mortality, and I know not what else, have been calculated. But we must admit, that it is more gratifying to a scientific mind that we should discover regular principles* operating amidst the disturbances which have been noticed, than that both disturbances and principles should remain sunk in obscurity, or disregarded through apathy.

It is vain, it would seem, to look (at least in this country) for any quiet self-contained place, where population remains undisturbed by migrations, and where statistics of mortality can therefore be obtained, requiring no rectification. The quieter the place, the more certain it is that it cannot furnish employment for the natural increase of the numbers of its population, some of whom must therefore remove to the great cities and industrial hives

* That the tables show a great degree of regularity in the results deduced from the statistics of different places similarly circumstanced, will be apparent on inspection.

which act as magnets, and draw new inhabitants from solitudes unthought of by their busy workers.

Again, in speaking of population, we must always bear in mind that the humbler classes form a great majority in almost every place, and that unless we apply ourselves to the consideration of their ways we must run the risk of falling into serious errors.

It will be seen throughout that the female deathrates are most largely affected. But the phenomena, although different, are likewise important in the case of males. The tables show that for that sex, at least, towns are exceedingly insalubrious, and I cannot help fancying that the heavy mortality occurring amongst men aged 35 and upwards in London and elsewhere is due to other than "home influences." Brutality and drunkenness do not conduce to lengthen life; and the very poor, in Bethnal Green, suffer much less than the better paid inhabitants of Whitechapel and St. Giles's.

If we wish to form an idea as to the comparative salubrity or otherwise of two country districts, I think we must rely on the deathrates at the ages of 0–10 and 45–75, and abandon the thought of deducing any instructive result from their mortuary statistics at the intervening ages. And the same remark, subject to some correction, will apply to town districts. The principal rectifications there required are such as are necessitated by the existence of large hospitals and workhouses, and by the tendency of sick persons, especially ladies, to leave towns.

In quitting the subject, I need hardly remark upon the usefulness of any research which may tend to make us better acquainted with the character and value of data which are in daily use. Apparent accuracy is in general a mere matter of arithmetical labour, but it has often served as the foundation of popular fame. It is therefore the more necessary that labours which are not likely to be appreciated by the multitude should receive the attention of actuaries and men of science.

APPENDIX A.

Particulars as to the composition of groups of Registration Districts referred to in this paper.

London (Centre). London City, East London, St. George in the East, Whitechapel, West London, St. Luke, Clerkenwell, Holborn, St. Giles, Strand, St. Martin-in-the-Fields, Westminster, St. James' Westminster, St. Saviour, St. Olave, and St. George, Southwark.

Suburbs	(North East).	West Ham, Islington, Hackney, Shoreditch, Bethnal Green, Stepney, Mile End, Poplar.
„	(North West).	Brentford, Kensington, Chelsea, St. George Hanover Square, Marylebone, Hampstead, Pancras.
„	(South West).	Lambeth, Wandsworth, Richmond, Kingston, Croydon.
„	(South East).	Bermondsey, Newington, Camberwell, Rotherhithe, Greenwich, Lewisham, Bromley.
Inner Belt	(*a*).	Epping, Ongar, Romford, Orsett, Billericay, Chelmsford, Rochford, Dunmow.
„	(*b*).	Hendon, *Barnet*, *Edmonton*, Ware, Bishop's Stortford, Hitchin, Hertford, Hatfield, St. Albans, Watford, Hemel Hempstead, Berkhamsted, Luton.
„	(*c*).	Chertsey, Staines, *Uxbridge*, Windsor, Amersham, Eton.
„	(*d*).	Epsom, Guildford, Hambledon, Dorking, Reigate, Godstone, East Grinstead.
„	(*e*).	Dartford, *Gravesend*, North Aylesford, Hoo, *Medway*, Malling, Sevenoaks, Tunbridge, *Maidstone*, Hollingbourn, Milton, Sheppey.
Outer Belt	(I.)	Maldon, Tendring, *Colchester*, Lexden, Witham, Halstead, Braintree, Risbridge, Sudbury, Cosford, Thingoe, *Bury St. Edmunds*, Mildenhall, Stow, Hartismere, Bosmere. Samford, *Ipswich*, Woodbridge, Plomesgate.
„	(II.)	Huntingdon, St. Ives, St. Neots, Biggleswade, Caxton, Chesterton, *Cambridge*, Linton, Newmarket, Ely, North Witchford, Royston, Saffron Walden.
„	(III.)	Banbury, Brackley, Towcester, Potterspury, Hardingstone, *Northampton*, Daventry, Brixworth, Wellingborough, Kettering, Thrapstone, Bedford, Ampthill, Woburn, Leighton Buzzard, Winslow, Newport Pagnell, Buckingham.
„	(IV.)	Faringdon, Abingdon, Wycombe, Aylesbury, Thame, *Headington*, *Oxford*, Bicester, Woodstock, Witney, Chipping Norton.
„	(V.)	Hartley Wintney, Basingstoke, Whitchurch, Andover, Kingsclere, Newbury, Hungerford, Wantage, Wallingford, Bradfield, *Reading*, Wokingham, Cookham, Easthampstead, Henley, *Farnborough*.
„	(VI.)	*Farnham*, Westhampnett, Chichester, Midhurst, Westbourne, Havant, *Portsea Island*, *Alverstoke*, Fareham, Isle of Wight, Lymington, New Forest, *Southampton*, South Stoneham, Romsey, Stockbridge, Winchester, Droxford, Catherington, Petersfield, Alresford, Alton.
„	(VII.)	Rye, *Hastings*, Battle, Eastbourne, Hailsham, Ticehurst, Uckfield, Cuckfield, Lewes, *Brighton*, Steyning, Horsham, Petworth, Thakeham, Worthing.
„	(VIII.)	Cranbrook, Tenterden, West Ashford, East Ashford, Bridge, *Canterbury*, Blean, Faversham, Thanet, Eastry, *Dover*, *Elham*, Romney Marsh.

The names in *italics* are those of towns and other districts which have been treated as exceptional.

The district called in the paper that of Norfolk consists of the Registration County of Norfolk, with Wisbech, Hoxne, Blything, Wangford and Mutford added.

The following tables include several not mentioned in the paper, the uses of which will appear on inspection.

TABLE I.—*Showing the Population and Number of Deaths in each of the Subdivisions of the Great Circle round London, with several additional particulars.*

Districts.	Mean Population, 1851–61.	Deaths, 1851–60.		To 1,000 Inhabitants (in 1861).			
		All Causes.	Phthisis.	Number Aged 20–35.		Female Servants Aged 20 and upwards.	Natives of Metropolitan Division.
				Males.	Females.		
London—							
Centre	748,930	199,948	25,495	130	142	38·6	
Suburbs, N.E.	643,396	144,170	16,145	116	138	29·5	
„ N.W. ..	697,493	154,541	19,355	112	170	79·5	
„ S.W.	299,434	62,004	7,011	108	149	57·0	
„ S.E.	393,807	88,330	10,286	126	135	34·1	
Total.....	2,034,130	449,045	52,797	116	150	51·1	
London—							
Centre and Suburbs	2,783,060	648,993	78,292	119	143	48·1	
Inner Belt—							
a. Chelmsford	148,696	29,262	3,558	105	102	26·1	54·8
b. Hertford	264,677	50,852	6,130	100	127	37·2	105·0
c. Windsor	114,391	22,795	2,543	107	117	43·1	85·6
d. Dorking	113,684	19,814	2,410	107	115	39·6	67·7
e. Maidstone	269,908	55,678	6,696	125	117	29·0	67·1
Total.....	911,356	178,401	21,337	110	117	34·0	78·6
Outer Belt—							
I. Ipswich	403,333	82,311	11,788	95	110	24·4	17·9
II. Cambridge ..	274,691	54,816	7,334	97	108	22·8	15·8
III. Northampton	336,024	71,829	8,449	105	115	21·1	17·1
IV. Oxford	217,021	45,684	5,689	101	112	26·6	20·5
V. Reading ...	234,879	45,323	5,725	110	108	31·5	33·8
VI. Southampton	418,375	84,119	11,790	135	120	31·1	40·2
VII. Brighton	289,886	55,232	7,900	99	127	49·8	58·0
VIII. Canterbury	226,237	44,152	5,222	121	115	32·3	43·8
Total.....	2,400,446	483,466	63,897	109	115	29·8	30·8
Total (Great Circle) ..	6,094,862	1,310,860	163,526	114	131	39·0	
England and Wales ..	18,996,916	4,210,715	508,923	112	126	29·7	

TABLE II.—*Shewing the like particulars for the Inner and Outer Belts of Country round London, treating certain Towns and other Districts separately.*

Districts.	Mean Population, 1851–1861.	Deaths, 1851–60.		To 1,000 Inhabitants (1861).			
		All Causes.	Phthisis.	Number Aged 20–35.		Female Servants Aged 20 and upwards.	Natives of Metropolitan Division.
				Males.	Females.		
Inner Belt—							
a. Chelmsford	148,696	29,262	3,558	105	102	26·1	54·8
b. Hertford	195,499	37,256	4,619	98	123	30·4	55·5
c. Windsor	93,075	18,128	2,117	108	118	42·7	80·6
d. Dorking	113,684	19,814	2,410	107	115	39·6	67·7
e. Maidstone	167,517	32,274	3,525	115	116	29·8	60·7
Total	718,471	136,734	16,229	106	115	32·4	61·8
Towns, &c.	192,885	41,667	5,108	124	124	39·7	138·5
Total	911,356	178,401	21,337	110	117	34·0	78·6
Outer Belt—							
I. Ipswich	332,775	66,593	9,597	92	106	22·4	14·4
II. Cambridge ..	247,603	49,312	6,403	96	105	20·2	13·0
III. Northampton	298,516	62,597	7,364	103	113	21·1	15·6
IV. Oxford	180,438	37,709	4,565	99	108	22·2	17·3
V. Reading	199,774	38,533	4,745	97	105	30·5	28·0
VI. Southampton	255,136	46,837	6,720	103	114	35·9	28·9
VII. Brighton	194,332	35,127	4,991	101	110	39·6	32·9
VIII. Canterbury ..	158,064	30,671	3,785	98	112	30·1	39·1
Total	1,866,638	367,379	48,170	99	109	27·1	22·2
Towns, &c.	533,808	116,087	15,727	142	133	38·1	58·3
Total	2,400,446	483,466	63,897	109	115	29·8	30·8

TABLE III.—*Rates of Mortality in* 1851–60 *per* 1,000 *Persons of each Sex at each Age in the several parts of the Great Circle round London.*

Ages.	Centre.		Suburbs.		London (Centre and Suburbs).		Inner Belt.		Outer Belt.	
	Males.	Females.	Males.	Females.	Males.	Females.	Males.	Females.	Males.	Females.
0 – 5	99·66	88·11	75·14	65·64	81·39	71·36	55·76	47·33	57·92	48·96
5 –	11·56	10·63	8·93	8·55	9·58	9·07	6·82	6·81	7·06	7·23
10 –	5·01	4·65	4·32	4·04	4·51	4·20	4·09	4·64	4·23	5·50
15 –	6·65	6·18	6·01	5·19	6·20	5·45	5·76	7·19	6·04	8·27
20 –	8·98	7·40	7·97	6·11	8·28	6·44	8·66	8·18	8·95	9·77
25 –	12·31	10·18	9·63	8·13	10·42	8·67	9·89	9·24	9·50	10·26
35 –	19·97	15·09	14·40	11·76	16·02	12·65	12·86	11·35	11·08	11·68
45 –	29·91	21·21	21·86	16·46	24·23	17·74	16·39	14·00	14·74	13·63
55 –	48·87	37·84	38·45	30·87	41·42	32·67	28·35	24·59	25·24	24·26
65 –	91·57	74·83	80·23	66·35	83·07	68·38	61·70	57·47	57·92	54·95
75 and upwards	193·16	173·53	181·33	164,09	183·80	166·20	166·16	155·53	161·55	153·52

TABLE IV.—*Ratios of the above to the Rates for England and Wales, the latter being considered as* 100.

Ages.	Centre.		Suburbs.		London (Centre and Suburbs).		Inner Belt.		Outer Belt.		Great Circle.	
	Males.	Females.	Males.	Females.	Males.	Females.	Males.	Females.	Males.	Females.	Males.	Females.
0 – 5	138	140	104	105	112	114	77	75	80	78	94	94
5 –	136	126	105	102	113	108	80	81	83	86	95	94
10 –	103	92	89	80	92	83	84	92	87	109	89	95
15 –	99	84	90	70	93	74	86	97	90	112	91	92
20 –	102	87	90	72	94	76	98	96	101	115	97	92
25 –	129	103	101	82	109	87	103	93	99	103	105	94
35 –	160	124	115	97	128	104	103	93	89	96	110	100
45 –	167	140	122	108	135	117	91	92	82	90	107	103
55 –	158	140	125	114	134	121	92	91	82	90	104	104
65 –	140	128	123	113	127	117	94	98	89	94	103	104
75 and upwards	117	112	110	106	111	107	100	100	98	99	102	102

TABLE V.—*Rates of Mortality by Phthisis in* 1851–60 *per* 1,000 *Persons of each Sex at each Age in the several parts of the Great Circle round London and in England and Wales.*

Ages.	Centre.		Suburbs.		London (Centre and Suburbs).		Inner Belt.		Outer Belt.		Great Circle.		England and Wales.	
	Males.	Females.	Males.	Females.	Males.	Females.	Males.	Females.	Males.	Females.	Males.	Females.	Males.	Females.
0 – 5	1·88	1·75	1·28	1·27	1·43	1·39	1·18	1·03	1·38	1·29	1·37	1·30	1·33	1·28
5 –	·84	·85	·48	·61	·57	·67	·35	·51	·47	·62	·50	·62	·53	·62
10 –	·70	·94	·55	·87	·59	·89	·49	1·03	·58	1·50	·57	1·17	·76	1·29
15 –	2·24	2·36	1·94	2·02	2·03	2·11	1·74	3·00	2·04	3·99	1·99	2·97	2·40	3·52
20 –	3·78	3·16	3·55	2·70	3·62	2·82	3·76	3·99	4·24	5·18	3·88	3·81	4·05	4·29
25 –	5·07	4·21	4·27	3·46	4·51	3·66	4·01	4·19	4·40	5·03	4·40	4·20	4·03	4·58
35 –	7·08	4·87	5·33	3·78	5·83	4·07	3·96	3·75	3·79	4·34	4·79	4·13	4·00	4·18
45 –	7·52	4·02	5·31	2·94	5·96	3·23	3·25	2·75	3·24	3·09	4·45	3·11	3·83	3·12
55 –	6·06	2·85	4·55	2·17	4·98	2·34	2·80	2·02	2·58	2·23	3·55	2·25	3·33	2·38
65 – 75	3·64	1·79	3·24	1·37	3·34	1·47	1·69	1·29	1·75	1·37	2·28	1·40	2·39	1·63

TABLE VI.—*Ratios of the above to the Rates for England and Wales, the latter being considered as* 100.

Ages.	Centre.		Suburbs.		London (Centre and Suburbs).		Inner Belt.		Outer Belt.		Great Circle.	
	Males.	Females.	Males.	Females.	Males.	Females.	Males.	Females.	Males.	Females.	Males.	Females.
0 – 5	141	137	96	99	108	109	89	80	104	101	103	102
5 –	158	137	91	98	108	108	66	82	89	100	94	100
10 –	92	73	72	67	78	69	64	80	76	116	75	91
15 –	93	67	81	57	85	60	73	85	85	113	83	84
20 –	93	74	88	63	89	66	93	93	105	121	96	89
25 –	126	92	106	76	112	80	100	91	109	110	109	92
35 –	177	117	133	90	146	97	99	90	95	104	120	99
45 –	196	129	139	94	156	104	85	88	85	99	116	100
55 –	182	120	137	91	150	98	84	85	77	94	107	95
65 – 75	152	110	136	84	140	90	71	79	73	84	95	86

TABLE VII.—*Rates of Mortality in* 1851–60 *per* 1,000 Males *at each Age in the Subdivisions of the Inner and Outer Belts of Country round London.*

Ages.	Inner Belt.					Outer Belt.							
	a. Chelmsford.	*b.* Hertford.	*c.* Windsor.	*d.* Dorking.	*e.* Maidstone.	I. Ipswich.	II. Cambridge.	III. Northampton.	IV. Oxford.	V. Reading.	VI. Southampton.	VII. Brighton.	VIII. Canterbury.
0 –	53·9	55·9	54·3	43·6	62·4	57·1	62·5	65·8	59·9	49·2	57·0	53·9	55·5
5 –	6·8	6·4	7·2	6·7	7·1	6·9	7·5	6·5	7·2	7·2	7·1	6·8	7·6
10 –	4·1	4·1	4·1	3·9	4·1	4·5	4·5	4·3	4·4	3·8	4·1	3·9	4·4
15 –	5·8	5·1	5·4	5·4	6·6	6·5	5·9	5·6	5·7	5·5	6·6	5·7	6·2
20 –	8·8	7·7	8·4	7·3	9·9	9·7	7·9	7·5	8·1	8·1	10·6	9·2	9·0
25 –	9·0	8·9	10·0	8·3	11·8	9·0	8·4	7·8	9·6	9·1	11·5	10·0	9·6
35 –	12·0	13·2	13·4	9·2	14·3	9·7	10·2	9·6	11·1	10·3	13 9	11·7	11·4
45 –	15·0	17·2	18·4	13·5	16·9	13·1	13·3	13·4	15·4	14·7	17·6	15·4	14·8
55 –	26·7	29·5	29·7	24·9	29·4	23·7	25·0	24·5	25·5	25·0	27·1	26·1	25·3
65 –	60·5	66·0	60·9	58·8	60·2	56·4	55·6	60·0	61·2	56·1	60·2	58·1	55·2
75 and upwards	165·5	171·6	170·3	158·8	163·3	159·3	157·0	178·8	165·1	164·2	156·1	159·0	154·1

TABLE VIII.—*Rates of Mortality in* 1851–60 *per* 1,000 Females *at each Age in the Subdivisions of the Inner and Outer Belts of Country round London.*

Ages.	Inner Belt.					Outer Belt.							
	a. Chelmsford.	*b.* Hertford.	*c.* Windsor.	*d.* Dorking.	*e.* Maidstone.	I. Ipswich.	II. Cambridge.	III. Northampton.	IV. Oxford.	V. Reading.	VI. Southampton.	VII. Brighton.	VIII. Canterbury.
0 –	44·4	47·7	48·4	37·8	52·1	48·4	51·5	55·7	50·3	42·7	48·6	46·3	45·4
5 –	7·3	6·5	6·7	6·4	7·1	7·1	7·1	7·2	6·7	6·9	7·5	7·2	8·0
10 –	5·1	4·6	4·4	4·5	4·6	6·1	5·4	6·0	5·7	5·1	5·1	5·4	5·0
15 –	8·7	6·4	7·1	7·3	7·3	9·5	8·8	9·2	7·9	7·9	7·3	7·6	7·3
20 –	9·3	7·1	8·5	7·8	8·8	10·7	9·7	10·3	10·2	9·3	9·5	8·8	9·3
25 –	9·7	8·7	9·1	8·7	9·8	10·9	9·4	11·0	10·9	10·0	10·3	9·8	9·3
35 –	11·3	10·8	10·7	10·5	12·6	12·2	10·7	12·3	12·4	11·2	11·8	11·4	10·9
45 –	13·9	13·5	13·8	13·6	14·9	13·2	12·0	14·8	15·0	13·8	13·5	13·5	13·5
55 –	23·8	25·0	24·5	23·4	25·2	23·6	21·7	26·9	25·1	24·4	24·7	23·8	23·5
65 –	54·5	57·0	60·0	56·1	59·2	51·4	49·5	63·9	58·9	56·0	54·5	55·3	50·5
75 and upwards	151·0	160·3	164·0	150·7	151·4	150·3	150·3	167·8	161·9	154·8	151·4	148·8	145·3

TABLE IX.—*Rates of Mortality in* 1851–60 *per* 1,000 *Persons of each Sex at each Age in the Suburbs of London.*

Ages.	N.-E. Suburbs.		N.-W. Suburbs.		S.-W. Suburbs.		S.-E. Suburbs.	
	Males.	Females.	Males.	Females.	Males.	Females.	Males.	Females.
0 –	76·04	66·96	79·66	68·60	68·47	60·85	71·47	62·29
5 –	8·77	8·34	9·23	9·23	8·64	7·99	8·93	8·26
10 –	4·32	3·60	4·55	4·45	4·05	4·41	4·20	3·84
15 –	6·11	5·28	5·61	5·29	5·77	5·03	6·65	4·97
20 –	7·87	6·27	7·45	5.68	7·14	6·12	9·42	6·77
25 –	9·25	8·42	10·01	7·72	8·79	7·85	10·18	8·80
35 –	13·43	11·87	15·57	11·61	13·64	11·18	14·51	12·32
45 –	21·00	16·55	23·59	17·07	20·71	15·14	20·99	16·15
55 –	38·52	31·35	40·71	31·54	35·22	29·41	36·89	29·98
65 –	81·39	67·81	82·15	67·90	70·25	62·56	82·87	64·31
75 and upwards	188·32	167·41	181·79	164·76	175·53	155·56	177·18	165·02

TABLE X.—*Ratios which the respective Rates of Mortality in Table VII. bear to the Rates for England and Wales, the latter being considered as* 100.

Ages.	Inner Belt.					Outer Belt.							
	a. Chelmsford.	*b.* Hertford.	*c.* Windsor.	*d.* Dorking.	*e.* Maidstone.	I. Ipswich.	II. Cambridge.	III. Northampton.	IV. Oxford.	V. Reading.	VI. Southampton.	VII. Brighton.	VIII. Canterbury.
0 –	74	77	75	60	86	79	86	91	83	68	79	74	77
5 –	80	75	85	79	83	81	88	76	85	85	83	80	89
10 –	84	84	84	80	84	92	92	88	90	78	84	80	90
15 –	87	76	81	81	99	97	88	84	85	82	99	85	93
20 –	100	87	95	83	112	110	89	85	92	92	120	104	102
25 –	94	93	104	87	123	94	88	82	100	95	120	104	100
35 –	96	106	107	74	115	78	82	77	89	83	111	94	91
45 –	84	96	102	75	94	73	74	75	86	82	98	86	82
55 –	87	96	96	81	95	77	81	79	83	81	88	85	82
65 –	93	101	93	90	92	86	85	92	94	86	92	89	84
75 and upwards	100	104	103	96	99	96	95	108	100	99	94	96	93

TABLE XI.—*Ratios which the respective Rates of Mortality in Table VIII. bear to the Rates for England and Wales, the latter being considered as* 100.

Ages.	Inner Belt.					Outer Belt.							
	a. Chelmsford.	*b.* Hertford.	*c.* Windsor.	*d.* Dorking	*e.* Maidstone.	I. Ipswich.	II. Cambridge.	III. Northampton.	IV. Oxford.	V. Reading.	VI. Southampton.	VII. Brighton.	VIII. Canterbury.
0 –	71	76	77	60	83	77	82	89	80	68	77	74	72
5 –	87	77	80	76	84	84	84	86	80	82	89	86	95
10 –	101	91	87	89	91	121	107	119	113	101	101	107	99
15 –	118	87	96	99	99	129	119	125	107	107	99	103	99
20 –	109	83	100	91	103	125	114	121	120	109	111	103	109
25 –	98	88	92	88	99	110	95	111	110	101	104	99	94
35 –	93	89	88	86	104	100	88	101	102	92	97	94	90
45 –	91	89	91	89	98	87	79	97	99	91	89	89	89
55 –	88	93	91	87	93	87	80	100	93	90	91	88	87
65 –	93	97	102	96	101	88	84	109	100	95	93	94	86
75 and upwards	97	103	106	97	97	97	97	108	104	100	97	96	93

TABLE XII.—*Ratios which the respective Rates of Mortality in Table IX. bear to the Rates for England and Wales, the latter being considered as* 100.

Ages.	N.-E. Suburbs.		N.-W. Suburbs.		S.-W. Suburbs.		S.-E. Suburbs.	
	Males.	Females.	Males.	Females.	Males.	Females.	Males.	Females.
0 –	105	107	110	109	95	97	99	99
5 –	103	99	108	110	102	95	105	98
10 –	89	71	93	88	83	87	86	76
15 –	91	72	84	72	86	68	99	67
20 –	89	74	84	67	81	72	107	79
25 –	97	85	105	78	92	79	106	89
35 –	108	98	125	96	109	92	116	101
45 –	117	109	131	112	115	100	117	106
55 –	125	116	132	117	114	109	120	111
65 –	125	116	126	116	108	107	127	110
75 and upwards	114	108	110	106	106	100	107	106

TABLE XIII.—*Rates of Mortality in* 1851–60 *per* 1,000 Males *at each Age in the undermentioned Districts, excluding certain Towns, &c., mentioned in Appendix A.*

Ages.	Inner Belt.					Outer Belt.							
	a. Chelmsford.	*b.* Hertford.	*c.* Windsor.	*d.* Dorking.	*e.* Maidstone.	I. Ipswich.	II. Cambridge.	III. Northampton.	IV. Oxford.	V. Reading.	VI. Southampton.	VII. Brighton.	VIII. Canterbury.
0 –	53·9	56·9	53·7	43·6	58·3	54·5	62·0	62·9	58·3	48·3	44·9	45·5	52·3
5 –	6·8	6·3	7·2	6·7	6·7	6·8	7·3	6·4	6·8	7·1	6·2	6·4	7·5
10 –	4·1	4·2	3·9	3·9	4·1	4·5	4·5	4·2	4·3	3·8	3·9	3·7	4·4
15 –	5·8	4·9	5·2	5·4	5·8	6·5	5·7	5·5	5·5	5·4	6·3	5·6	6·2
20 –	8·8	7·5	8·4	7·3	7·5	9·5	7·9	7·4	8·1	8·1	10·2	8·9	9·5
25 –	9·0	8·2	9·3	8·3	8·5	8·5	7·9	7·4	9·2	9·2	10·2	9·2	9·2
35 –	12·0	11·4	11·7	9·2	10·8	9·1	9·5	9·1	10·7	10·0	11·2	9·9	10·9
45 –	15·0	15·2	16·9	13·5	14·6	12·0	12·4	12·6	14·1	13·8	14·8	13·2	13·7
55 –	26·7	28·0	29·1	24·9	27·1	22·0	24·2	23·5	24·7	24·2	24·0	22·8	24·2
65 –	60·5	63·7	59·2	58·8	57·1	54·5	54·1	58·8	59·9	54·4	56·9	54·9	54·8
75 and upwards	165·5	178·4	170·2	158·8	163·0	157·7	156·4	176·5	165·2	162·5	152·6	158·2	154·4

TABLE XIV.—*Rates of Mortality in* 1851–60 *per* 1,000 Females *at each Age in the undermentioned Districts, excluding certain Towns, &c., mentioned in Appendix A.*

Ages.	Inner Belt.					Outer Belt.							
	a. Chelmsford.	*b.* Hertford.	*c.* Windsor.	*d.* Dorking.	*e.* Maidstone.	I. Ipswich.	II. Cambridge.	III. Northampton.	IV. Oxford.	V. Readng.	VI. Southampton	VII. Brighton.	VIII. Canterbury.
0 –	44·4	48·8	47·8	37·8	48·0	45·7	50·9	53·0	48·7	41·7	37·9	38·8	43·5
5 –	7·3	6·4	6·7	6·4	6·7	7·0	7·1	7·1	6·6	6·9	6·7	6·7	7·5
10 –	5·1	4·7	4·6	4·5	4·7	6·3	5·6	6·1	5·7	5·2	5·1	5·7	5·2
15 –	8·7	6·7	7·1	7·3	7·6	10·1	9·1	9·4	8·1	7·9	8·1	8·8	7·4
20 –	9·3	7·5	8·7	7·8	8·7	11·3	10·1	10·3	10·8	9·8	10·2	9·9	9·6
25 –	9·7	8·6	8·8	8·7	9·4	11·0	9·5	10·9	10·9	10·2	10·0	10·2	9·6
35 –	11·3	10·6	10·1	10·5	11·8	12·2	10·4	12·0	12·3	11·2	11·3	11·1	10·8
45 –	13·9	12·8	13·0	13·6	13·7	12·7	11·7	14·2	14·6	13·6	12·4	12·2	13·1
55 –	23·8	24·6	23·4	23·4	23·3	22·8	21·6	26·7	24·3	23·9	22·9	22·7	23·3
65 –	54·5	56·5	61·5	56·1	57·5	49·9	49·2	63·2	59·3	55·4	52·9	54·5	50·2
75 and upwards	151·0	162·3	162·3	150·7	152·7	147·0	149·9	167·5	163·6	155·6	148·3	149·2	145·6

TABLE XV.—*Ratios which the respective Rates of Mortality in Table XIII. bear to the Rates for England and Wales, the latter being considered as* 100.

Ages.	Inner Belt.					Outer Belt.							
	a. Chelmsford.	*b.* Hertford.	*c.* Windsor.	*d.* Dorking.	*e.* Maidstone.	I. Ipswich.	II. Cambridge.	III. Northampton.	IV. Oxford.	V. Reading.	VI. Southampton.	VII. Brighton.	VIII. Canterbury.
0 –	74	79	74	60	80	75	86	87	80	67	62	63	72
5 –	80	74	85	79	79	80	86	75	80	83	73	75	88
10 –	84	86	80	80	84	92	92	86	88	78	80	76	90
15 –	87	73	78	81	87	97	85	82	82	81	94	84	93
20 –	100	85	95	83	85	108	89	84	92	92	116	101	108
25 –	94	86	97	87	89	89	83	77	96	96	107	96	96
35 –	96	91	94	74	87	73	76	73	86	80	90	79	87
45 –	84	85	94	75	81	67	69	70	79	77	82	73	76
55 –	87	91	94	81	88	71	78	76	80	78	78	74	78
65 –	93	98	91	90	87	83	83	90	92	83	87	84	84
75 and upwards	100	108	103	96	99	95	95	107	100	98	92	96	93

TABLE XVI.—*Ratios which the respective Rates of Mortality in Table XIV. bear to the Rates for England and Wales, the latter being considered as* 100.

Ages.	Inner Belt.					Outer Belt.							
	a. Chelmsford.	*b.* Hertford.	*c.* Windsor.	*d.* Dorking.	*e.* Maidstone.	I. Ipswich.	II. Cambridge.	III. Northampton.	IV. Oxford.	V. Reading.	VI. Southampton.	VII. Brighton.	VIII. Canterbury.
0 –	71	78	76	60	77	73	81	84	78	66	60	62	69
5 –	87	76	80	76	80	83	84	84	78	82	80	80	89
10 –	101	93	91	89	93	125	111	121	113	103	101	113	103
15 –	118	91	96	99	103	137	123	127	110	107	110	119	100
20 –	109	88	102	91	102	132	118	121	127	115	120	116	113
25 –	98	87	89	88	95	111	96	110	110	103	101	103	97
35 –	93	87	83	86	97	100	86	99	101	92	93	91	89
45 –	91	84	86	89	90	84	77	93	96	89	82	80	86
55 –	88	91	87	87	86	84	80	99	90	88	85	84	86
65 –	93	96	105	96	98	85	84	108	101	94	90	93	86
75 and upwards	97	104	104	97	98	95	96	108	105	100	95	96	94

TABLE XVII.—*Rates of Mortality by Phthisis in* 1851–60 *per* 1,000 Males *at each Age for the under-mentioned Districts, excluding certain Towns, &c., mentioned in Appendix A.*

Ages.	Inner Belt.					Outer Belt.							
	a. Chelmsford.	*b.* Hertford.	*c.* Windsor.	*d.* Dorking.	*e.* Maidstone.	I. Ipswich.	II. Cambridge.	III. Northampton.	IV. Oxford.	V. Reading.	VI. Southampton.	VII. Brighton.	VIII. Canterbury.
0 –	1·55	1·42	·69	·67	1·33	1·86	1·84	1·49	1·53	1·07	·72	1·01	1·26
5 –	·40	·38	·36	·27	·38	·59	·67	·36	·52	·35	·25	·46	·49
10 –	·57	·58	·34	·57	·37	·69	·59	·56	·67	·46	·43	·51	·61
15 –	1·80	1·50	1·56	2·00	1·57	2·43	2·03	1·60	1·57	1·69	2·40	2·00	1·86
20 –	3·55	3·65	3·80	3·45	3·05	5·03	3·84	3·38	4·20	3·88	4·98	4·29	4·13
25 –	3·63	3·51	4·34	3·80	2·95	4·01	3·69	3·30	3·96	4·57	5·08	4·57	3·97
35 –	3·57	4·14	3·84	3·01	3·35	3·18	3·20	2·55	3·21	3·38	3·90	3·52	3·28
45 –	3·18	3·32	3·35	2·81	2·66	2·56	2·81	2·66	2·91	3·03	3·26	2·57	2·75
55 –	3·00	3·03	2·92	2·15	2·30	2·07	2·87	2·21	2·00	2·12	2·69	2·59	2·55
65 – 75	1·59	1·65	1·67	1·46	1·29	1·74	1·67	1·81	1·60	1·72	1·52	1·81	1·38

TABLE XVIII.—*Rates of Mortality by Phthisis in* 1851–60 *per* 1,000 Females *at each Age for the under-mentioned Districts, excluding certain Towns, &c., mentioned in Appendix A.*

Ages.	Inner Belt.					Outer Belt.							
	a. Chelmsford.	*b.* Hertford.	*c.* Windsor.	*d.* Dorking.	*e.* Maidstone.	I. Ipswich.	II. Cambridge.	III. Northampton.	IV. Oxford.	V. Reading.	VI. Southampton.	VII. Brighton.	VIII. Canterbury.
0 –	1·29	1·38	·81	·51	1·05	1·59	1·81	1·29	1·37	1·00	·78	1·09	1·24
5 –	·65	·55	·40	·39	·51	·79	·76	·58	·54	·46	·48	·62	·56
10 –	1·22	1·14	1·08	·92	·94	2·11	1·57	1·88	1·61	1·07	1·15	1·50	1·20
15 –	3·75	3·12	2·87	3·25	2·95	5·60	4·37	4·50	3·77	3·55	3·80	4·37	3·61
20 –	4·35	3·68	4·29	4·36	4·27	6·53	5·33	5·26	5·56	5·17	5·46	5·73	5·22
25 –	4·51	4·05	4·22	4·28	4·06	5·89	4·65	5·09	5·18	4·86	5·22	5·31	4·70
35 –	4·28	3·77	3·51	3·35	3·55	4·98	3·91	4·40	4·70	4·21	4·28	3·79	3·72
45 –	2·72	2·66	2·52	2·74	2·81	3·32	3·38	3·16	3·03	2·84	2·95	3·03	3·12
55 –	2·02	2·28	1·63	1·75	1·74	2·49	2·50	2·48	2·04	1·9	2·25	2·00	2·03
65 – 75	1·12	1·82	1·05	1·22	·96	1·24	1·88	1·30	1·14	1·40	1·28	1·77	·96

TABLE XIX.—*Rates of Mortality by Phthisis in* 1851–60 *per* 1,000 *Persons of each Sex at each Age in the Suburbs of London.*

Ages.	N.-E. Suburbs.		N.-W. Suburbs.		S.-W. Suburbs.		S.-E. Suburbs.	
	Males.	Females.	Males.	Females.	Males.	Females.	Males.	Females.
0 –	1·41	1·42	1·19	1·31	·98	1·01	1·40	1·16
5 –	·44	·60	·47	·68	·50	·55	·55	·55
10 –	·56	·72	·60	1·02	·50	·87	·50	·87
15 –	1·88	1·91	2·03	2·13	1·91	1·94	1·91	2·09
20 –	3·47	2·59	3·66	2·62	3·04	2·74	3·83	3·00
25 –	4·06	3·63	4·69	3·35	3·86	3·20	4·21	3·65
35 –	5·05	3·77	5·93	3·85	4·75	3·43	5·15	3·96
45 –	5·17	3·01	5·80	3·04	4·94	2·55	4·91	2·93
55 –	4·43	2·19	4·96	2·12	3·96	2·04	4·47	2·32
65 – 75	3·05	1·42	3·10	1·32	2·71	1·29	4·05	1·45

TABLE XX.—*Ratios which the respective Rates of Mortality in Table XVII. bear to the Rates for England and Wales, the latter being considered as* 100.

Ages.	Inner Belt.					Outer Belt.							
	a. Chelmsford.	*b.* Hertford.	*c.* Windsor.	*d.* Dorking.	*e.* Maidstone.	I. Ipswich.	II. Cambridge.	III. Northampton.	IV. Oxford.	V. Reading.	VI. Southampton.	VII. Brighton.	VIII. Canterbury.
0 –	117	107	52	50	100	140	138	112	115	80	54	76	95
5 –	75	72	68	51	72	111	126	68	98	66	47	87	92
10 –	75	76	45	75	49	91	78	74	88	61	57	67	80
15 –	75	62	65	83	65	101	85	67	65	70	100	83	77
20 –	88	90	94	85	75	124	95	83	104	96	123	106	102
25 –	90	87	108	94	73	100	92	82	98	113	126	113	99
35 –	89	103	96	75	84	79	80	64	80	84	97	88	82
45 –	83	87	87	73	69	67	73	69	76	79	85	67	72
55 –	90	91	88	65	69	62	86	66	60	64	81	78	77
65 – 75	67	69	70	61	54	73	70	76	67	72	64	76	58

TABLE XXI.—*Ratios which the respective Rates of Mortality in Table XVIII. bear to the Rates for England and Wales, the latter being considered as* 100.

Ages.	Inner Belt.					Outer Belt.							
	a. Chelmsford.	*b.* Hertford.	*c.* Windsor.	*d.* Dorking	*e.* Maidstone.	I. Ipswich.	II. Cambridge.	III. Northampton.	IV. Oxford.	V. Reading.	VI. Southampton.	VII. Brighton	VIII. Canterbury.
0 –	101	108	63	40	82	124	141	101	107	78	61	85	97
5 –	105	89	65	63	82	127	123	94	87	74	77	100	90
10 –	95	88	84	71	73	164	122	146	125	83	89	116	93
15 –	107	89	82	92	84	159	124	128	107	101	108	124	103
20 –	101	86	100	102	100	152	124	123	130	121	127	134	122
25 –	98	88	92	93	89	129	102	111	113	106	114	116	103
35 –	102	90	84	80	85	119	94	105	112	101	102	91	89
45 –	87	85	81	88	90	106	108	101	97	91	95	97	100
55 –	85	96	68	74	73	105	105	104	86	82	95	84	85
65 – 75	69	112	64	75	59	76	115	80	70	86	79	109	59

TABLE XXII.—*Ratios which the respective Rates of Mortality in Table XIX. bear to the Rates for England and Wales, the latter being considered as* 100.

Ages.	N.-E. Suburbs.		N.-W. Suburbs.		S.-W. Suburbs.		S.-E. Suburbs.	
	Males.	Females.	Males.	Females.	Males.	Females.	Males.	Females.
0 –	106	111	89	102	74	79	105	91
5 –	83	97	89	110	94	89	104	89
10 –	74	56	79	79	66	67	66	67
15 –	78	54	85	61	80	55	80	59
20 –	86	60	90	61	75	64	95	70
25 –	101	79	116	73	96	70	104	80
35 –	126	90	148	92	119	82	129	95
45 –	135	96	151	97	129	82	128	94
55 –	133	92	149	89	119	86	134	97
65 – 75	128	87	130	81	113	79	169	89

TABLE XXIII.—*Ratios which the Female Deathrates by all Causes at each Age bear to the Male Deathrates at the corresponding Age in the same places respectively, the latter being considered as* 100.

Districts.	Ages.									
	0–	5–	10–	15–	20–	25–	35–	45–	55–	65–
Great Circle	86	98	111	112	91	93	88	81	87	91
London, Centre	88	92	93	93	82	83	76	71	77	82
Suburbs, N.E.	88	95	83	86	80	91	88	79	81	83
„ N.W.	86	100	98	94	76	77	75	72	77	83
„ S.W.	89	92	109	87	86	89	82	73	84	89
„ S.E.	87	92	91	75	72	86	85	77	81	78
Inner Belt—										
a. Chelmsford	82	107	124	150	106	108	94	93	89	90
b. Hertford	86	102	112	137	100	105	93	84	88	89
c. Windsor	89	93	118	137	104	95	86	77	80	104
d. Dorking	87	96	115	135	107	105	114	101	94	95
e. Maidstone	82	100	115	131	116	111	109	94	86	101
Towns, &c.	85	97	103	88	69	69	67	74	82	87
Outer Belt—										
I. Ipswich	84	103	140	155	119	129	134	106	104	92
II. Cambridge	82	97	124	160	128	120	109	94	89	91
III. Northampton	84	111	145	171	139	147	132	113	114	107
IV. Oxford	84	97	133	147	133	118	115	104	98	99
V. Reading	86	97	137	146	121	111	112	99	99	102
VI. Southampton	84	108	131	129	100	98	101	84	95	93
VII. Brighton	85	105	154	157	111	111	112	92	100	99
VIII. Canterbury	83	100	118	119	101	104	99	96	96	92
Towns, &c.	86	103	107	98	86	86	83	75	82	85

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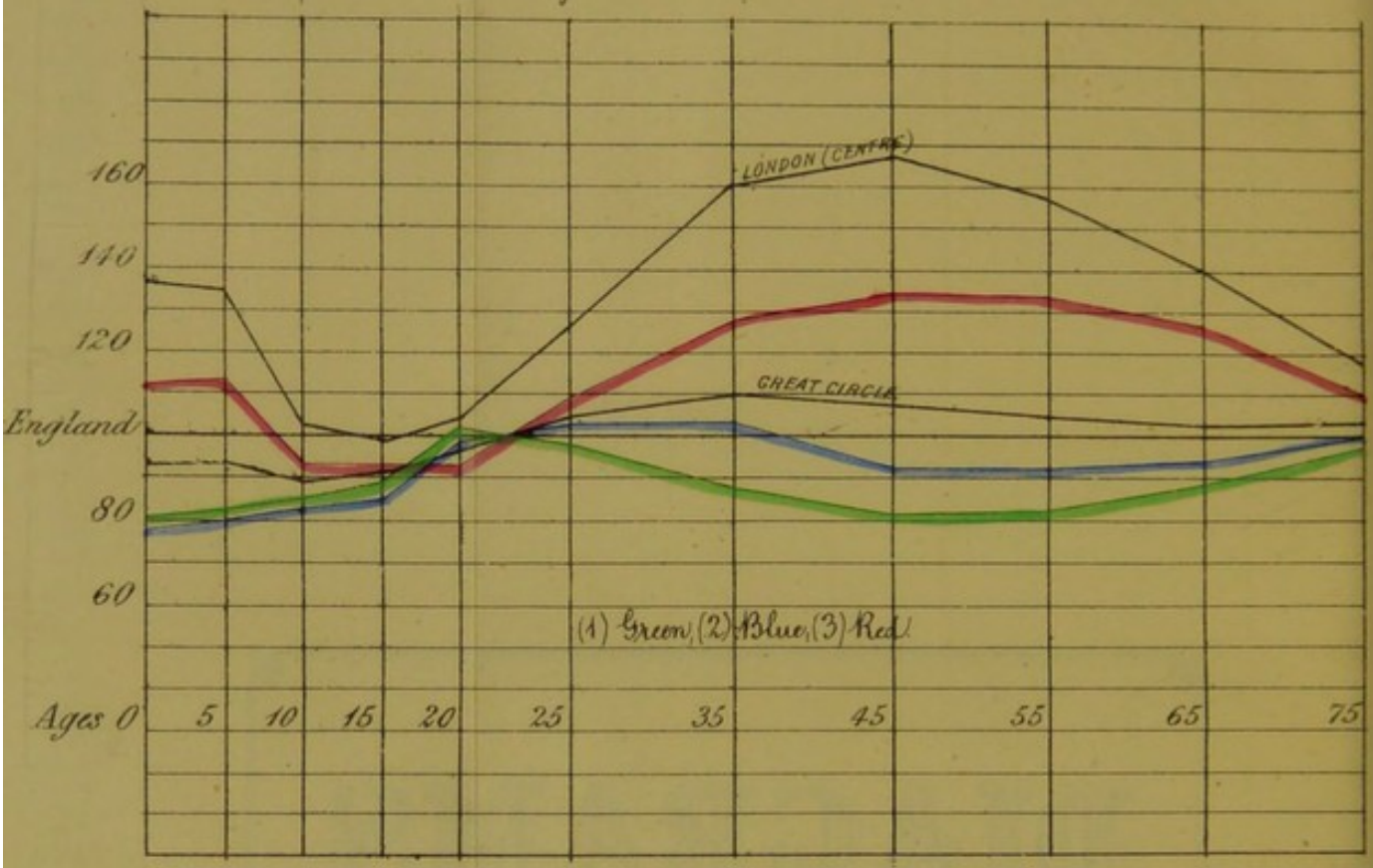
DIAGRAMS.

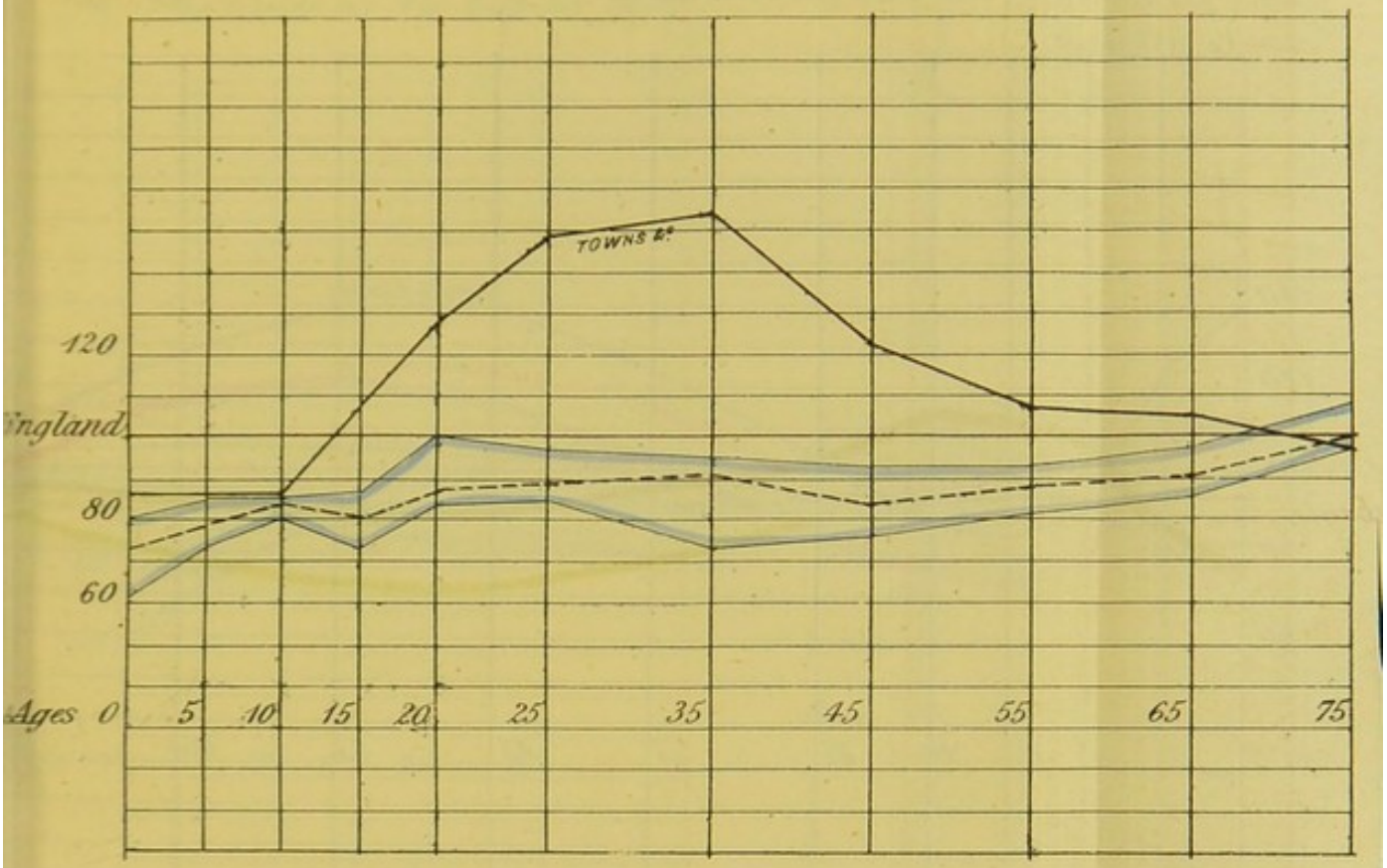
Mortality by all Causes. (Males.)

1a. Shewing the proportionate deathrate amongst Males in (1) the Outer Belt, (2) the Inner Belt, (3) London Centre and Suburbs. – The proportionate ratios for London (Centre) and Great Circle are shewn by lines. – Standard, the deathrate amongst Males in England and Wales.

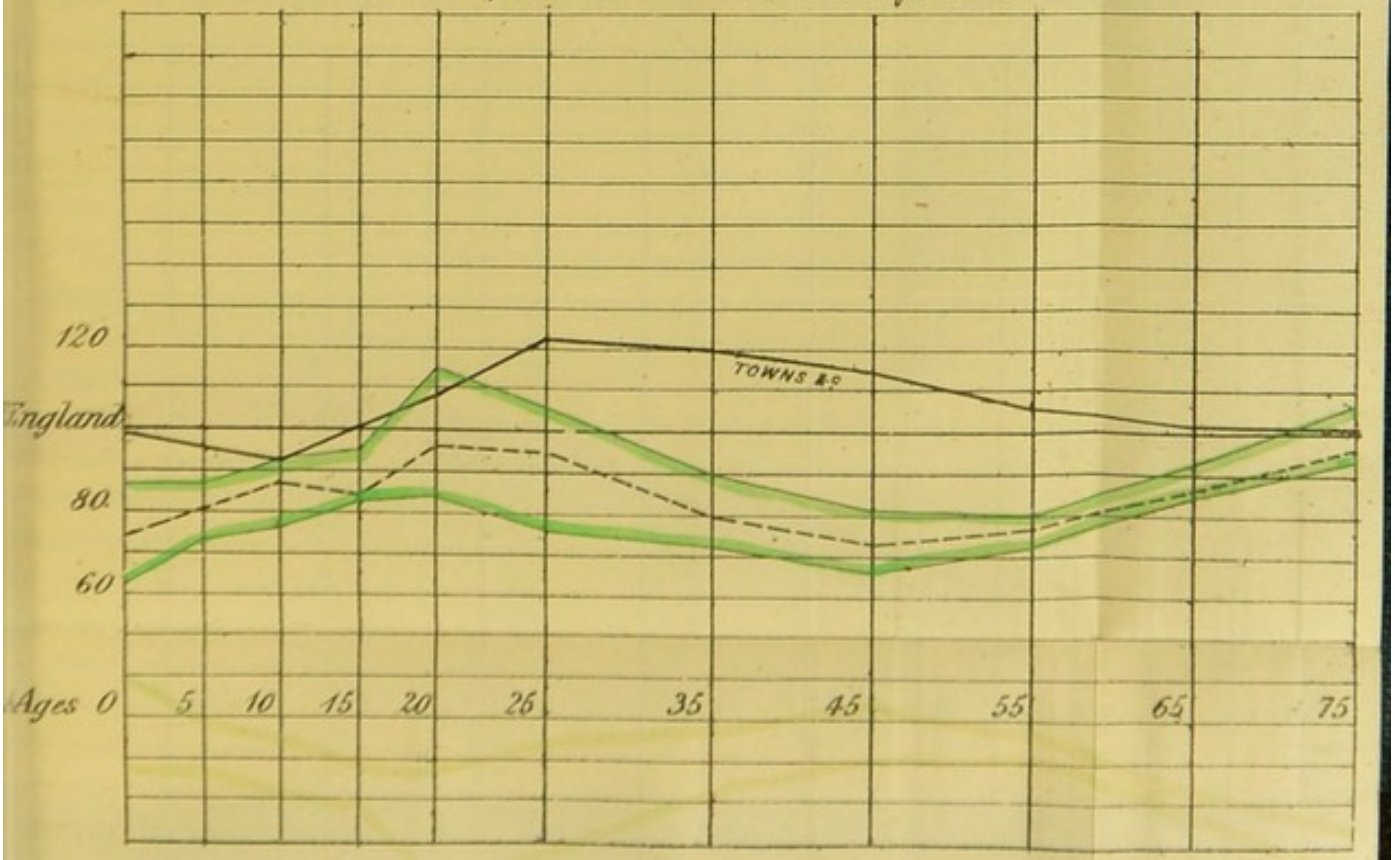


2a. Shewing the maximum and minimum proportionate deathrates in the four Suburbs which with London (Centre) constitute the Metropolitan district represented by a red line in Diagram 1a. – The medium rates are indicated by a dotted line.

3a Shewing the maximum and minimum proportionate deathrates in the five parts which with certain Towns &c, constitute the Inner Belt represented by a blue line in diagram 1a. The medium rates are shewn by a dotted line, and the rates for Inner Circle Towns and other excepted districts are shewn by a line.

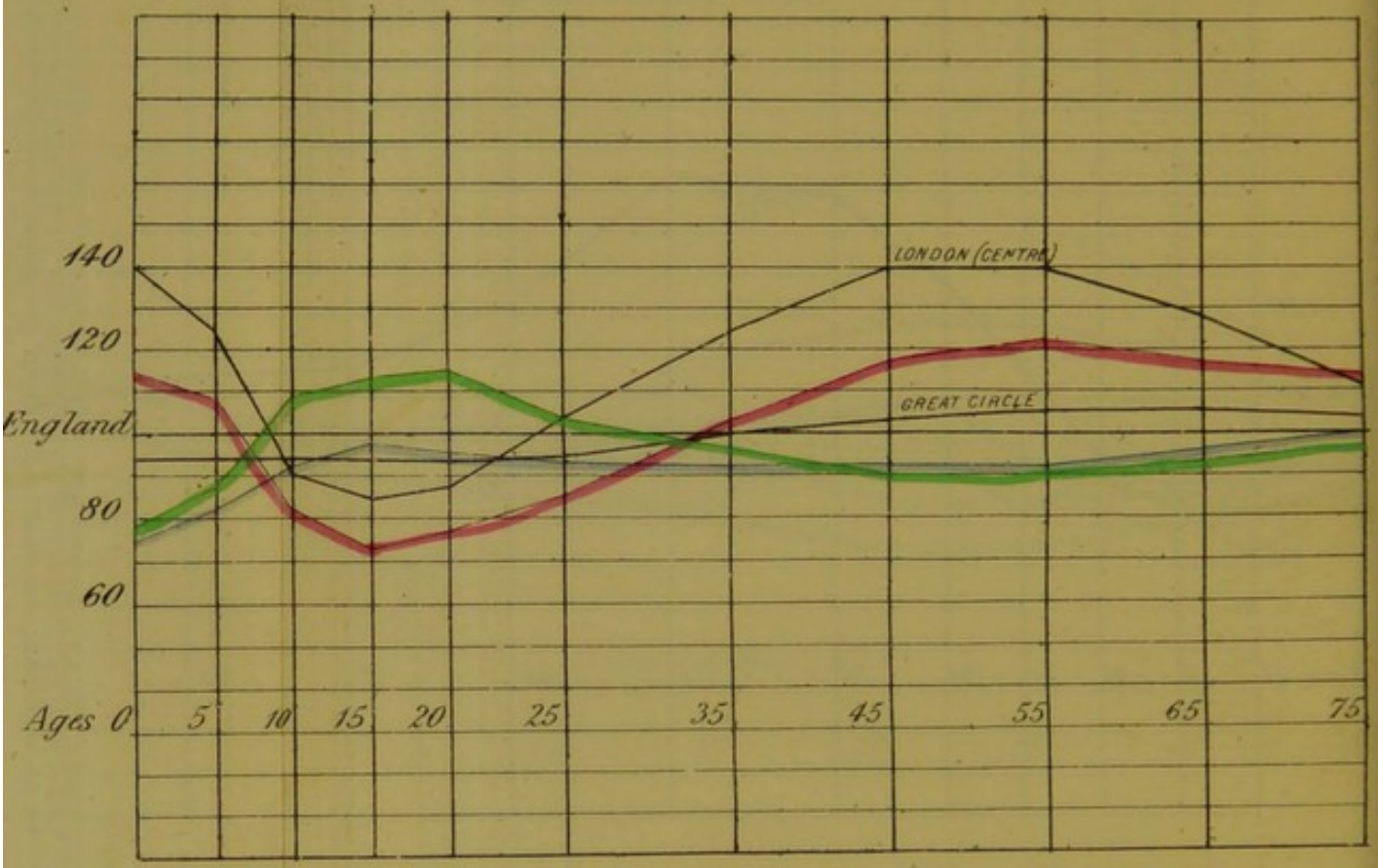


4a Shewing the maximum and minimum proportionate deathrates in the eight parts which with certain Towns &c. constitute the Outer Belt represented by a green line in diagram 1a. The medium rates are shewn by a dotted line, and the rates for Outer Circle Towns and other excepted districts are shewn by a line.

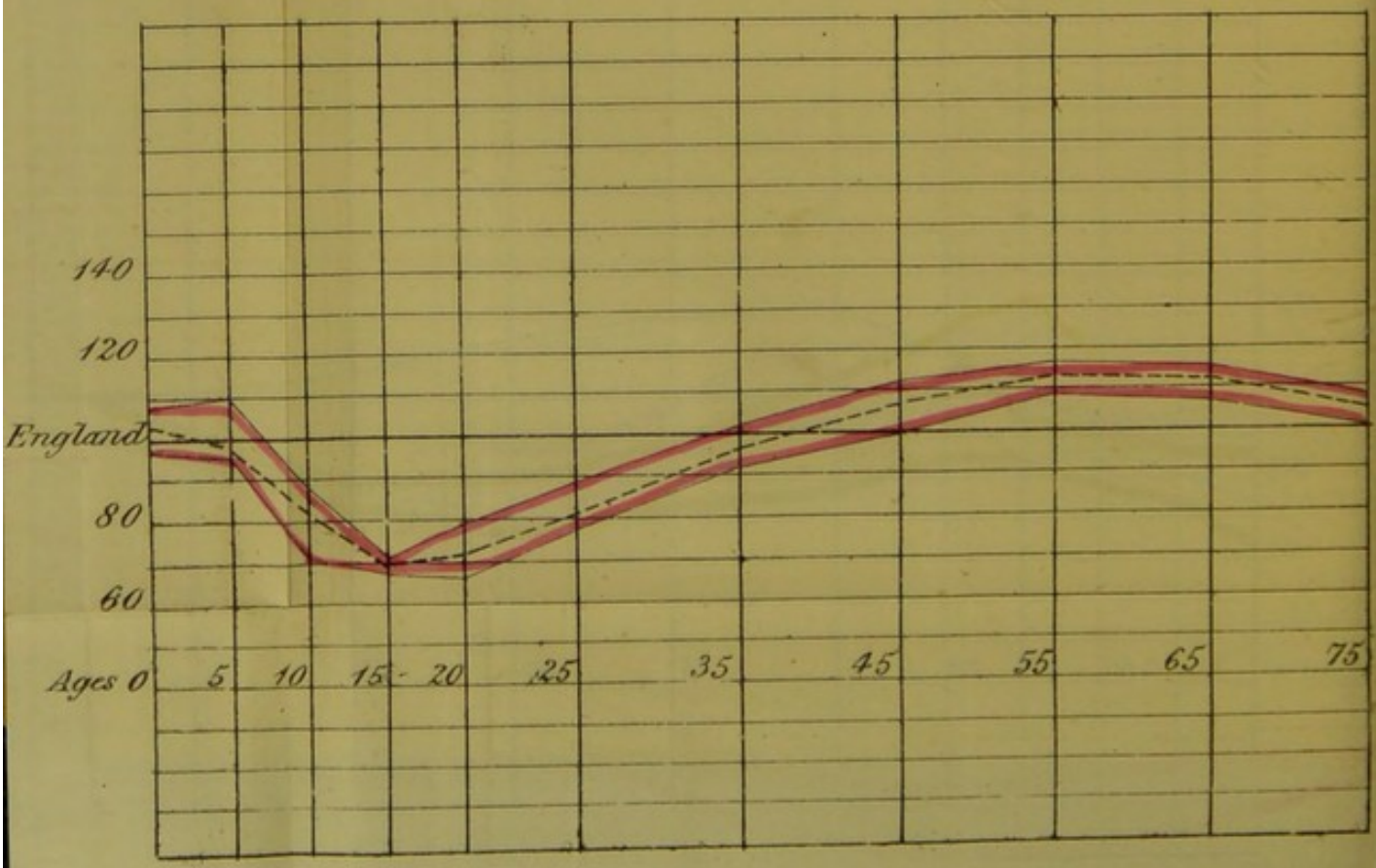


Mortality by all Causes, (Females.)

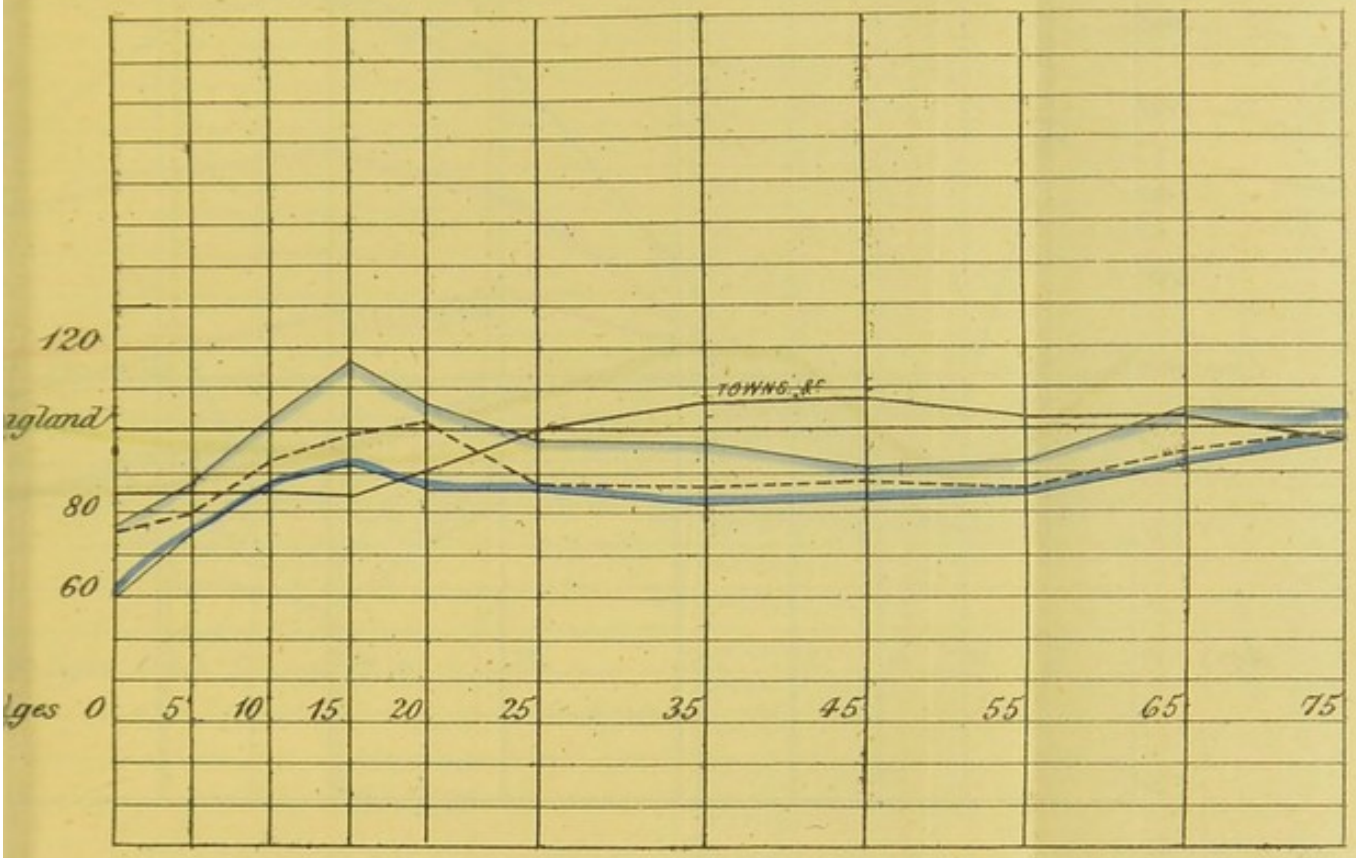
1b. The same as 1a. but for Females.



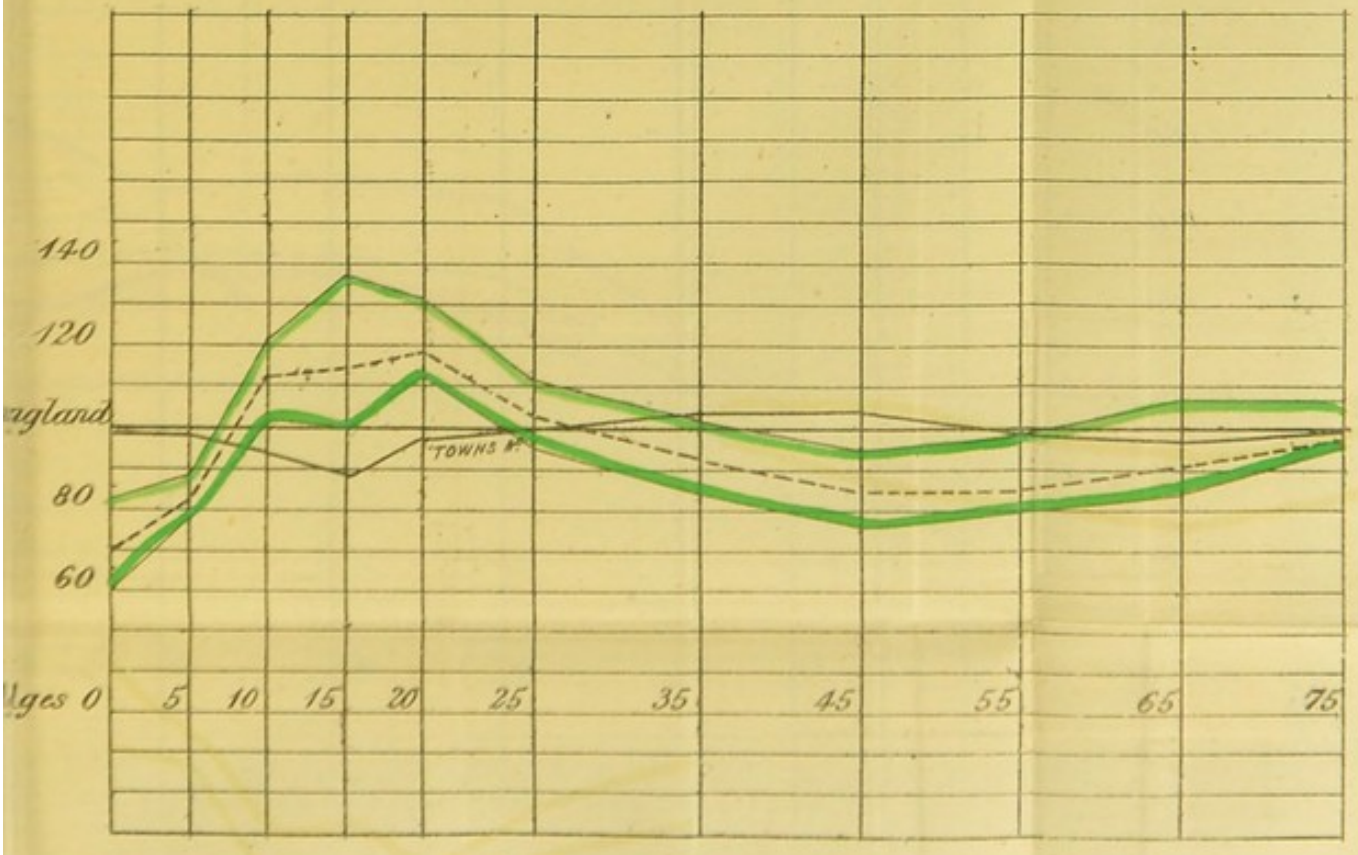
2b. The same as 2a. but for Females.



3b. The same as 3a. but for Females.

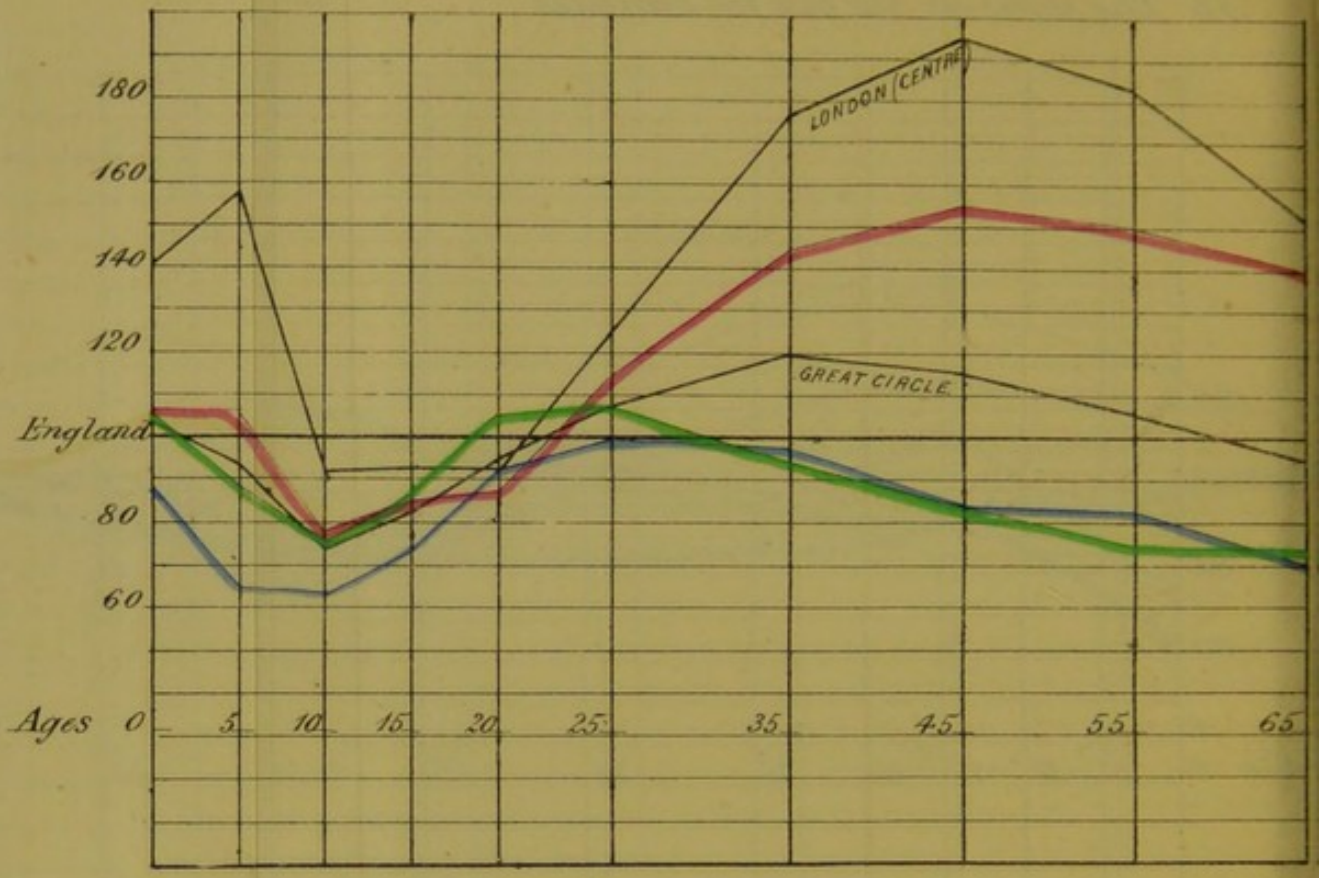


4b. The same as 4a. but for Females.

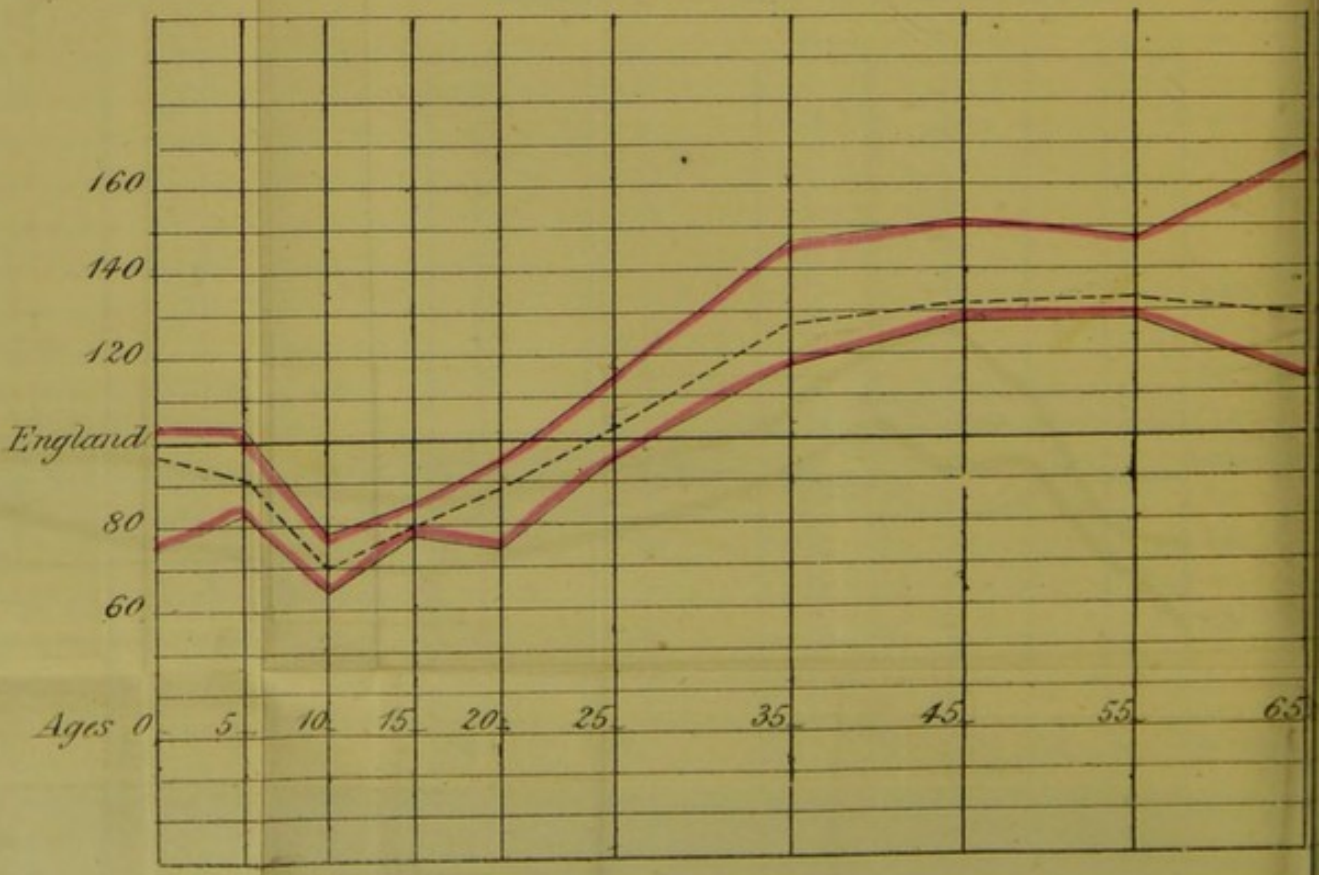


Mortality by Phthisis, (Males.)

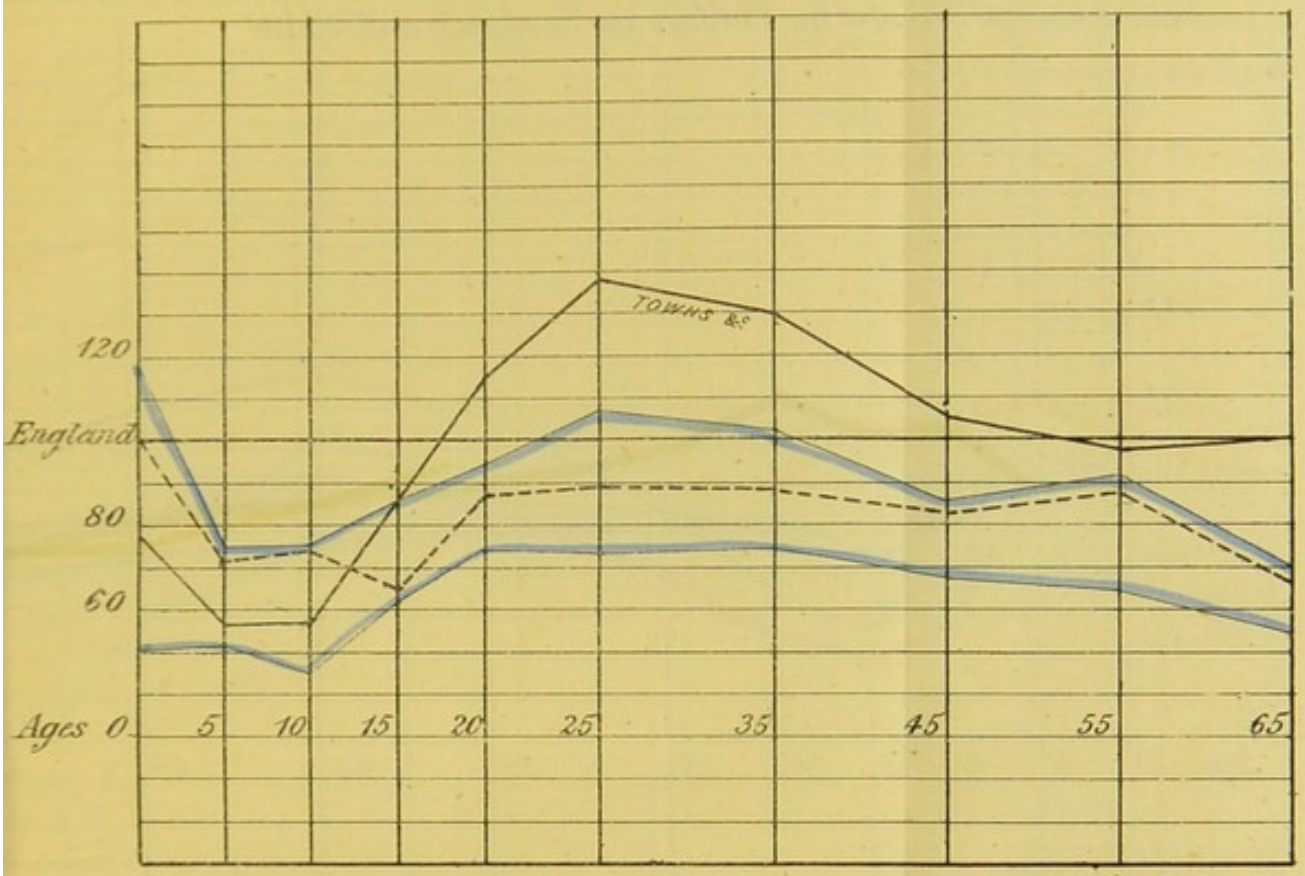
5a. The same as 1a. but for Phthisis.



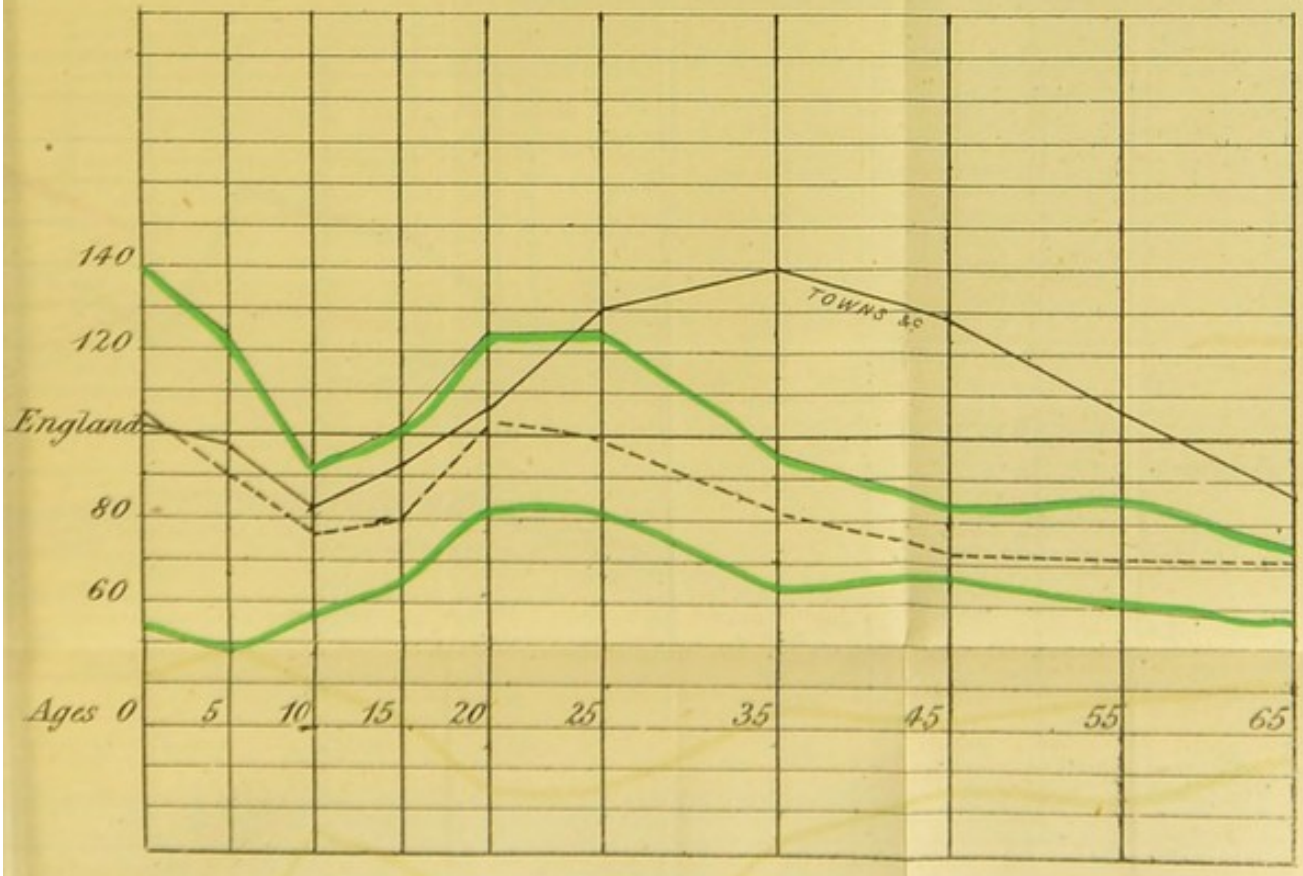
6a. The same as 2a. but for Phthisis.



7a. The same as 3a. but for Phthisis.

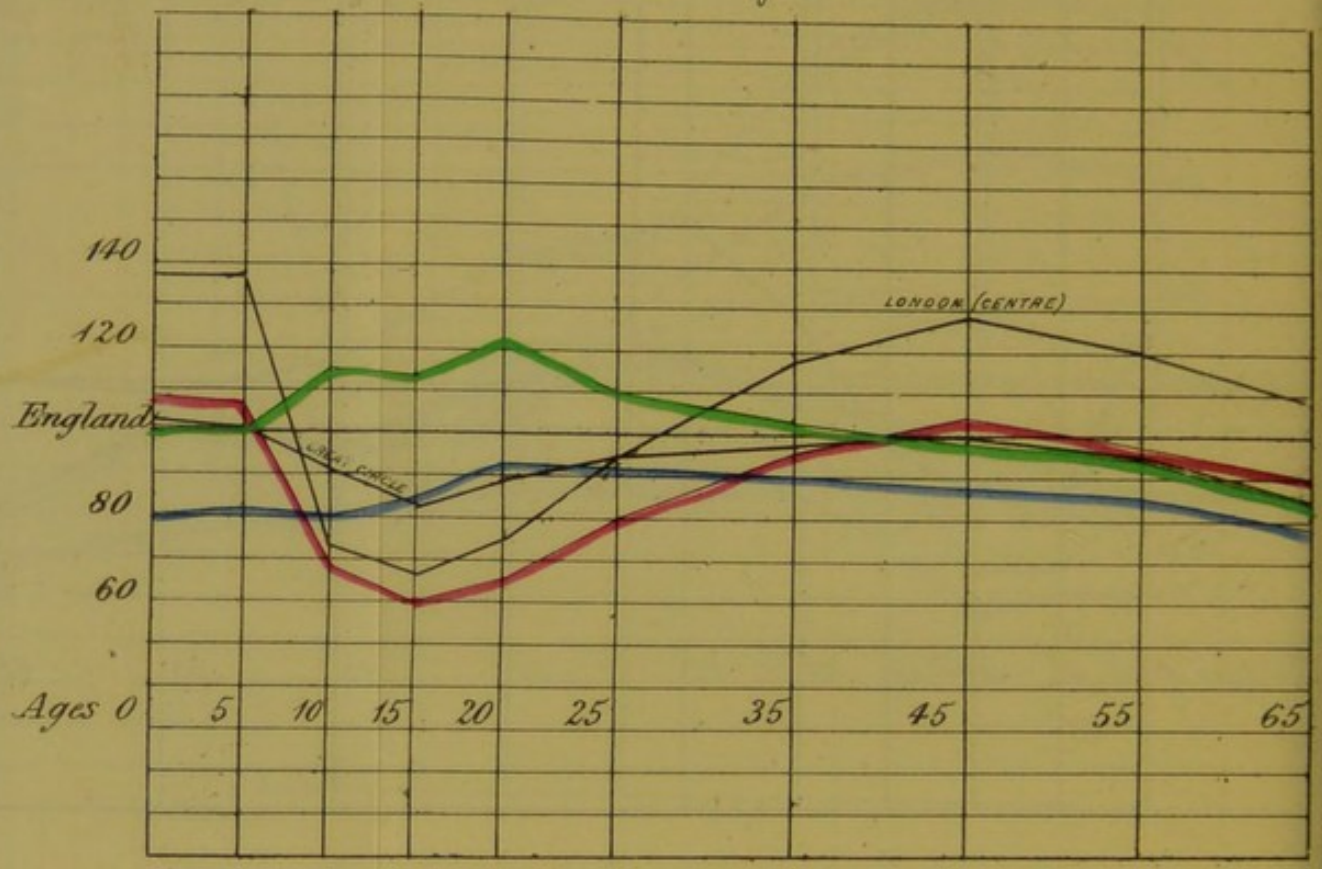


8a. The same as 4a. but for Phthisis.

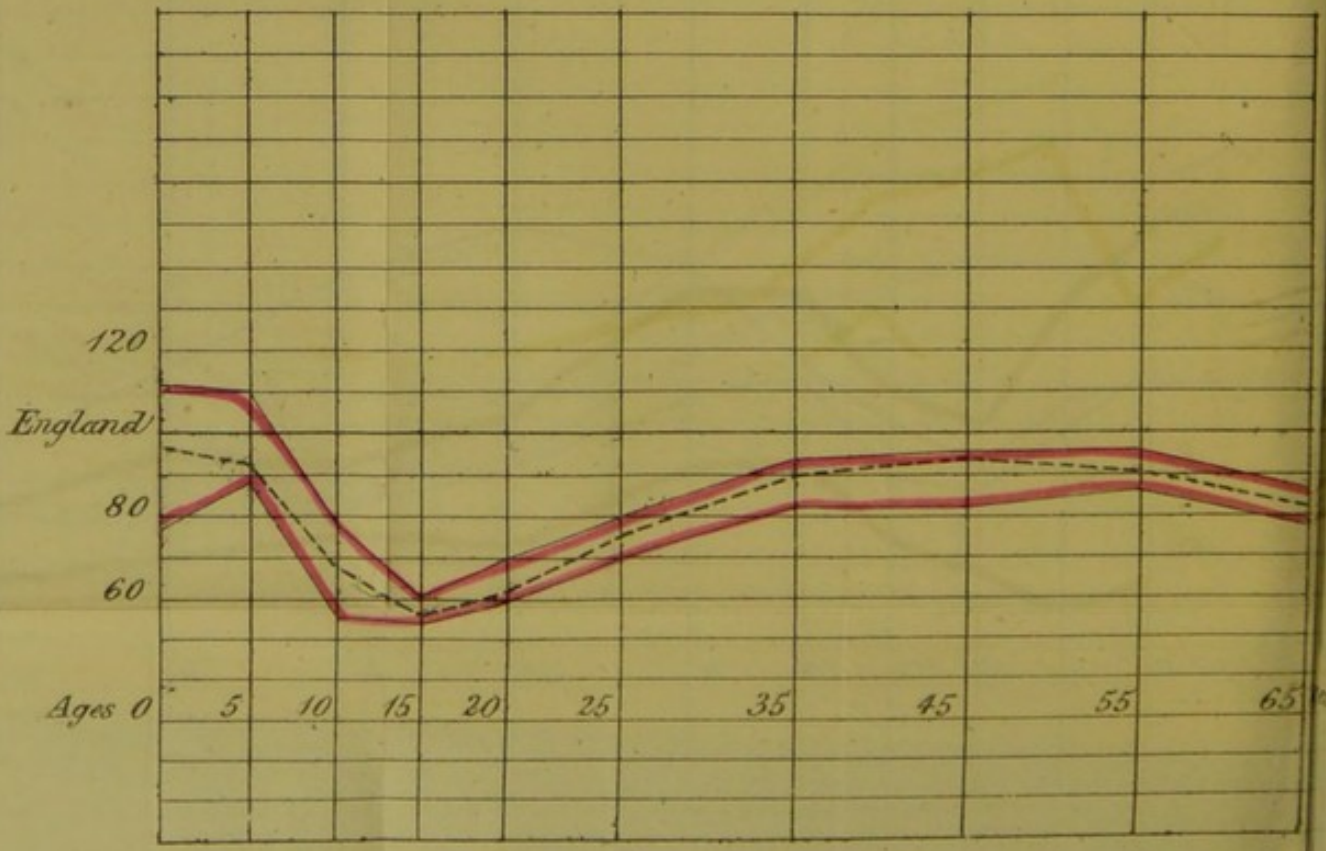


Mortality by Phthisis, (Females.)

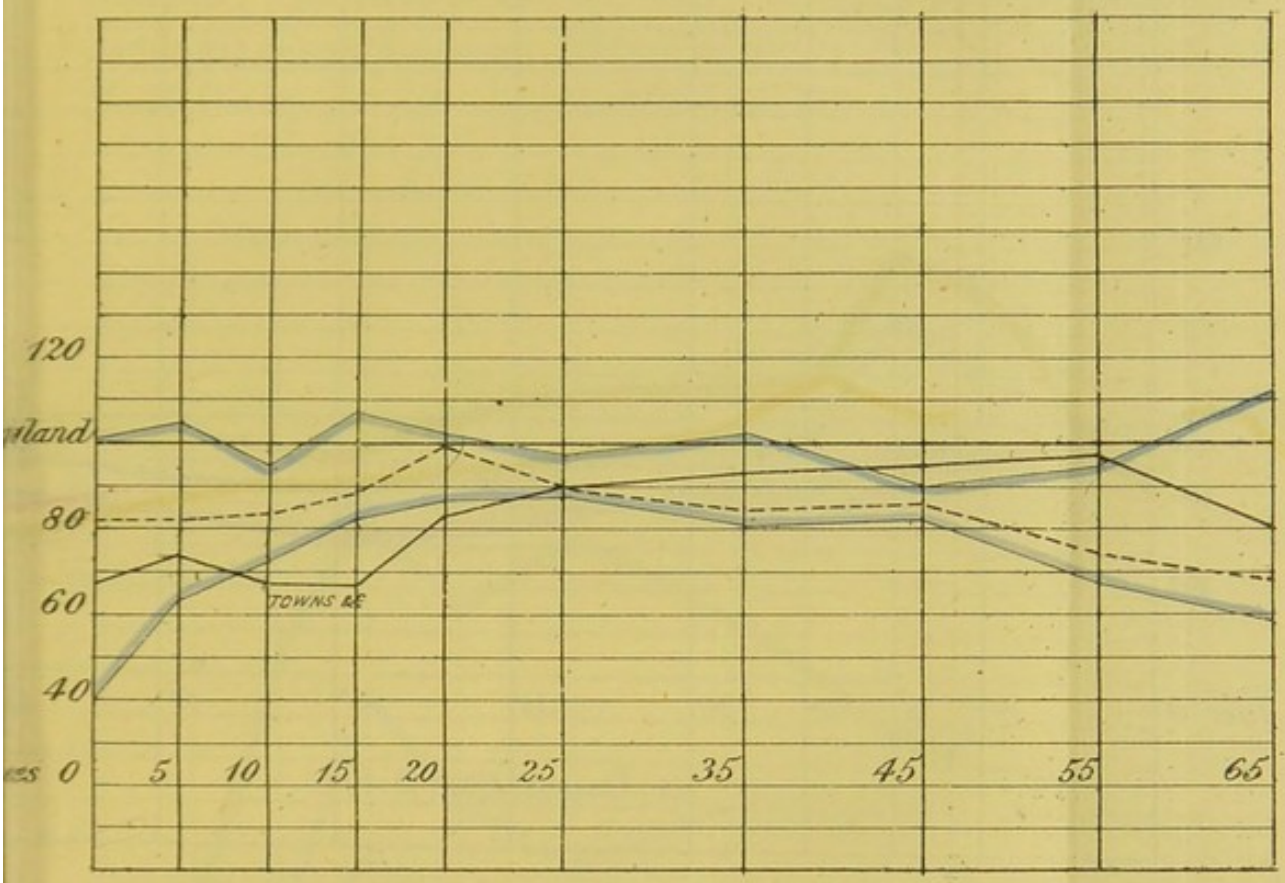
6a. Shewing the proportionate deathrate amongst Females by Phthisis in (1) the Outer Belt, (2) the Inner Belt, (3) London Centre and Suburbs. The proportionate ratios for London (Centre), and Great Circle are shewn by lines. Standard, deathrate amongst Females by Phthisis in England and Wales.



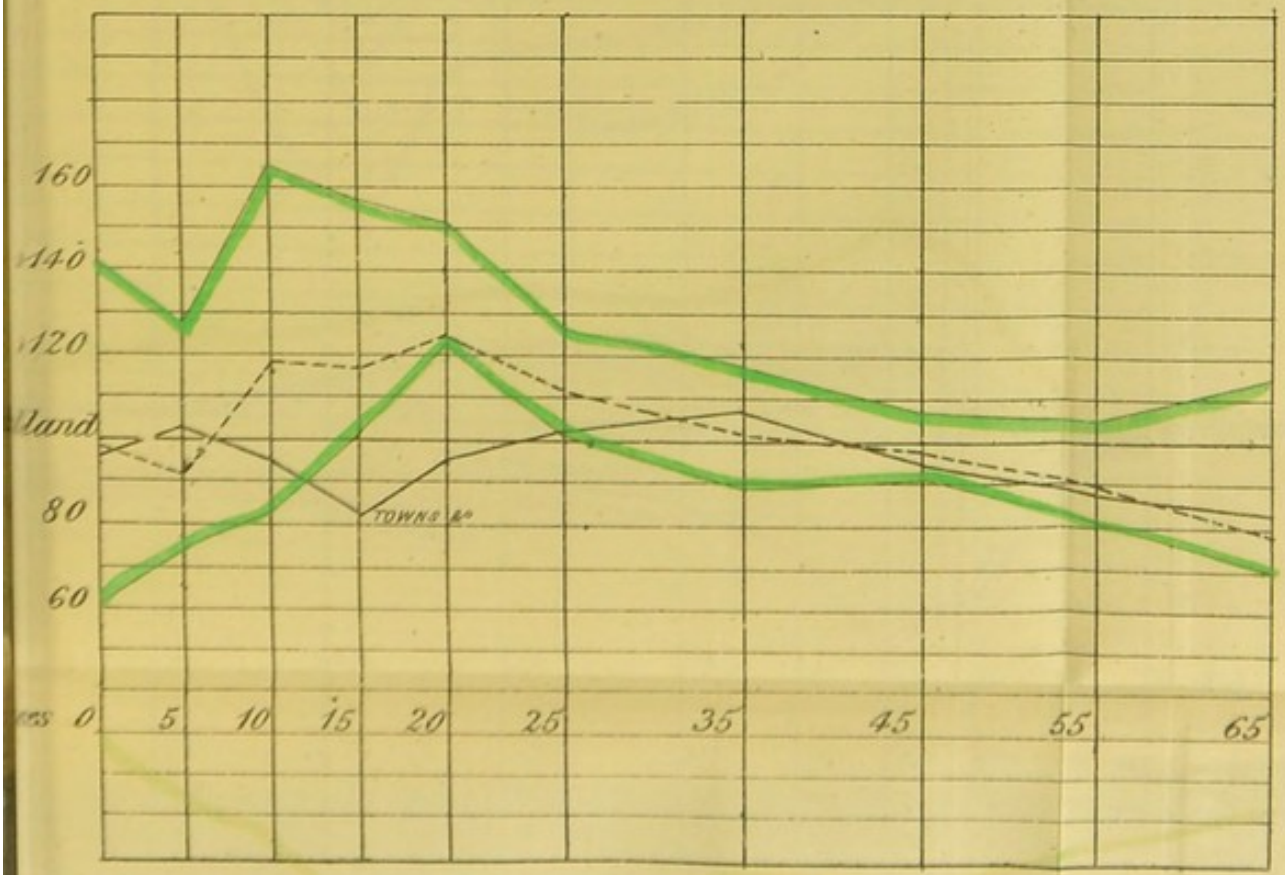
6b. The same as 6a, but for Females.



7b. *The same as 7a. but for Females.*

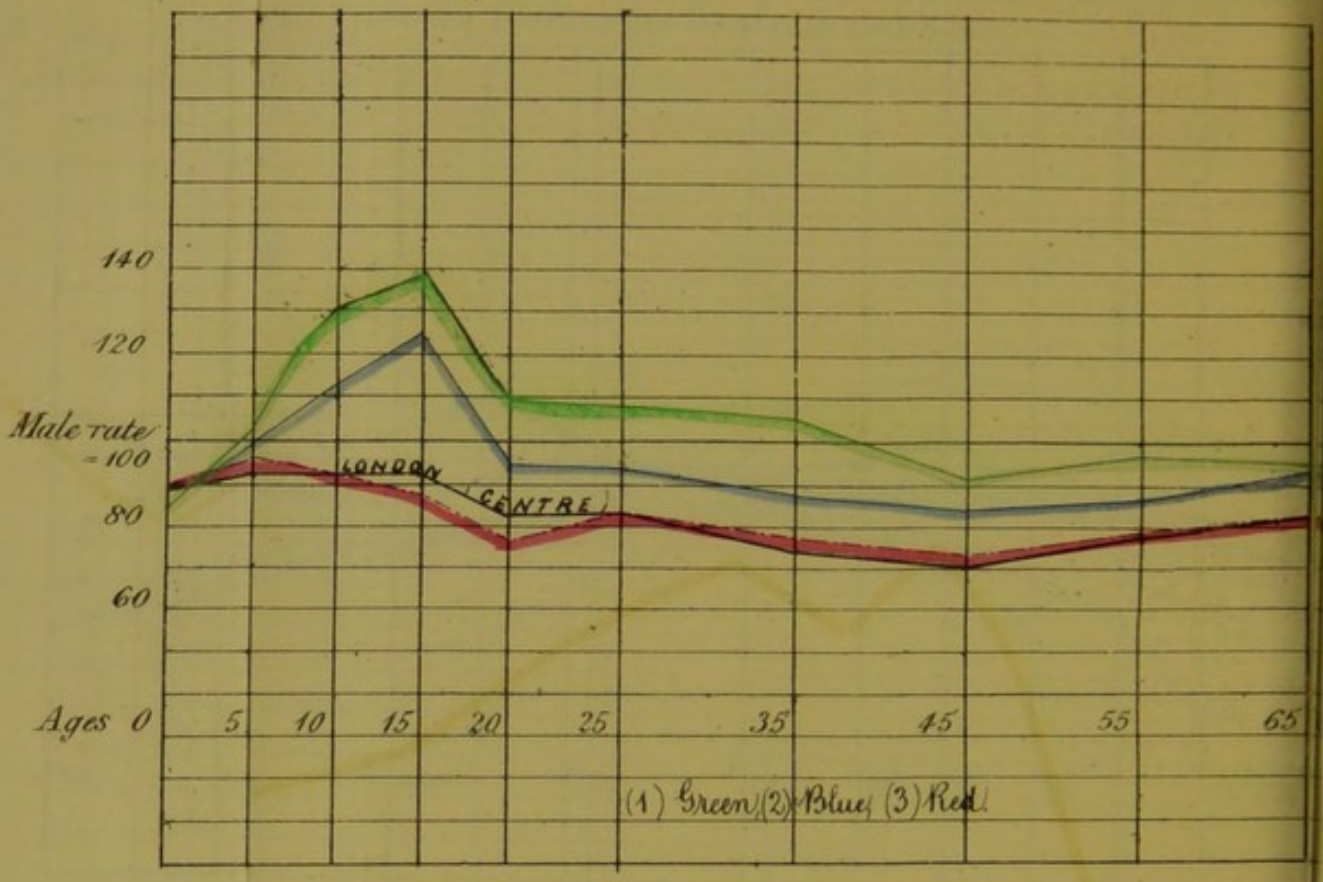


8b. *The same as 8a. but for Females.*

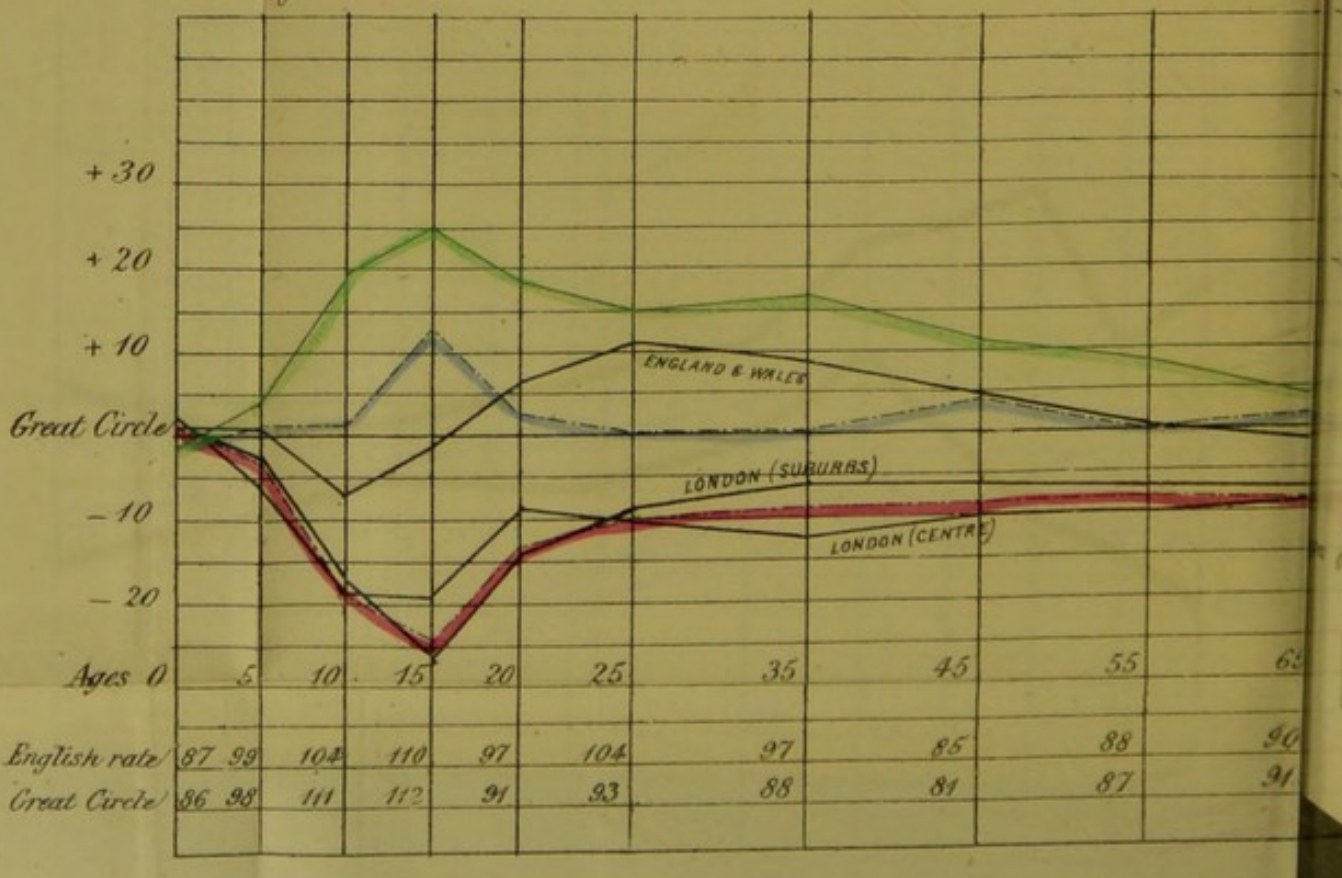


FEMALE VERSUS MALE DEATHRATES.

9. Shewing the proportionate deathrate amongst Females, compared with Males in (1) the Outer Belt, (2) the Inner Belt, and (3) London, Centre & Suburbs. – The ratios for London (Centre) are shewn by a line – Standard, the deathrate amongst Males supposed = 100. –



9a. Shewing the same particulars, with additional lines for the English ratios and those of London (Suburbs). – Standard, the ratios calculated for the Great Circle. –



English rate	87	99	104	110	97	104	97	85	88	90
Great Circle	86	98	111	112	91	93	88	81	87	91

10. Shewing the maximum and minimum proportionate deathrates amongst Females in (1) the Outer Belt, (2) the Inner Belt, (3) London, Centre and Suburbs. The towns in the two Belts are excluded, and their proportional deathrates shewn by lines. Standard, the proportions calculated for the Great Circle. *See Table XXIII.*