

The effect of migrations upon death-rates / by Thomas A. Welton.

Contributors

Welton, Thomas A. 1835-1918.
Royal College of Surgeons of England

Publication/Creation

[London] : Harrison and Sons, printers, [1875]

Persistent URL

<https://wellcomecollection.org/works/mhwva8ga>

Provider

Royal College of Surgeons

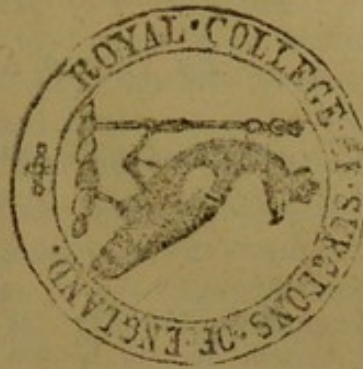
License and attribution

This material has been provided by This material has been provided by The Royal College of Surgeons of England. The original may be consulted at The Royal College of Surgeons of England. where the originals may be consulted. This work has been identified as being free of known restrictions under copyright law, including all related and neighbouring rights and is being made available under the Creative Commons, Public Domain Mark.

You can copy, modify, distribute and perform the work, even for commercial purposes, without asking permission.



Wellcome Collection
183 Euston Road
London NW1 2BE UK
T +44 (0)20 7611 8722
E library@wellcomecollection.org
<https://wellcomecollection.org>



THE EFFECT
OF
MIGRATIONS UPON DEATH-RATES.

26

The EFFECT of MIGRATIONS upon DEATH-RATES.

By THOMAS A. WELTON, ESQ., F.S.S.

[Read before the Statistical Society, 15th June, 1875.]

CONTENTS :

	PAGE		PAGE
I.—Comparative Mortality at Certain Ages in London and in Surrounding Dis- tricts in the Ten Years 1851-60	325	III.—The Writer's Conclusions	328
II.—Mr. Humphreys's Explana- tion of the Low Rate of Mortality amongst Young Women in London exa- mined	326	IV.—Comparative Mortality at Certain Ages in London and in Eight Counties in the Ten Years 1861-70	329
		V.—Singular Excess of Female as compared with Male Death Rates at Certain Ages	330
		VI.—Tables	332

IN the laborious and useful paper by Mr. N. A. Humphreys, read before the Society on the 15th December, 1874, reference was made to my theory and calculations on the above subject. It is not my purpose to complain of the spirit in which they were then dealt with; on the contrary, the explanation verbally given by Mr. Humphreys during the discussion which followed the reading of his paper, convinced me that it had been his wish to do ample justice to my work. But I believe it to be desirable that the records of the Statistical Society should contain a more explicit statement than he has given of the inferences I have drawn from the figures brought together in the paper I published in 1871, especially as I can now add to those figures, based upon the returns of 1851-60, information of later date.

I should be extremely sorry to have it supposed that I am "of opinion that the Registrar-General's figures cannot be correct because they are difficult to explain." I do not see how the Registrar-General is to be held accountable for more than the accuracy of the figures which he so skilfully presents to the public. If on examining them closely, I discover something apparently anomalous, but which is probably connected with circumstances affecting the manner of life of large masses of the people, I have good reason to feel confident that the heads of the department, men of conspicuous ability and unwearied research, will welcome any hints I can offer which promise to be of the slightest assistance to them in solving the enigma, and exploring the full meaning of the records with which they are concerned. They are certain not

to hold on by the “national death-rates,” except for the reason Mr. Humphreys himself has given, viz., that such figures, although subject to various qualifications, are practically useful.

Mr. Humphreys has not mentioned what I strongly brought out, that in the “outer ring” of rural population surrounding London, not only is the rate of mortality amongst females at the ages 15—25 very much higher than that which prevails in London, but it is *greatly in excess of the national average*, whilst, if we might be permitted to form an opinion of the general salubrity of the respective places by a comparison of death-rates at those periods of life when migrations have least influence (say 0—5 and 55 upwards), we should be led to suppose that some cause other than general insalubriousness or misery occasioned such excessive mortality. Let us look at some of the figures derived from the records of 1851-60:—

Age.	Annual Average Death-rates (per 1,000) amongst Females.		
	London (with Environs).	England and Wales.	“Outer Ring.”
0—5.....	71·4	62·7	49·0
15—20.....	5·5	7·4	8·3
20—25.....	6·4	8·5	9·8
55—65.....	32·7	27·0	24·3
65—75.....	68·4	58·7	55·0

I am not aware of any influence to which the contrast here shown could be due, which is so potent and so widely felt as that of the migrations within the district surrounding and including London, the statistics of mortality within which district were detailed at some length in my former paper.

But another aspect of the matter remains to be mentioned. Not only did I find that in every one of the eight sections into which I divided the “outer ring,” the same phenomena existed so far as regards female mortality: I also found something of the same nature, but with the contrast much less broadly marked, to be true of the male population. Thus:—

Age.	Annual Average Death-rates (per 1,000) amongst Males.		
	London (with Environs).	England and Wales.	“Outer Ring.”
0—5.....	81·4	72·4	57·9
15—20.....	6·2	6·7	6·0
20—25.....	8·3	8·8	9·0
55—65.....	41·4	30·8	25·2
65—75.....	83·1	65·3	57·9

The only age, in the case of males, at which I found the death-rate in the "outer ring" exceeded both the national rate and that prevailing in London, was 20—25.

This is consistent with the probability that whilst many young women come to London without severing their connection with the home of their birth, young men, who gather there from the provinces in almost equal numbers, are more apt to endeavour to shift for themselves, and are more frequently expected to do so. If, then, the London rate would not be depressed by the departure of many male invalids at those ages, neither would the rural mortality be nearly so much aggravated as in the case of females.

Mr. Humphreys prefers to assume that women living in domestic service in London enjoy better health, and are liable to a lower rate of mortality than their sisters who remain in the agricultural districts. I admit, at once, that those who migrate to London are likely to include but few who are of weak constitution, and that consequently the average stamina of those who remain behind must be lower than might otherwise be the case. Yet such is the effect of a life of increased excitement and effort upon girls accustomed to the quiet habits of a village population, that I feel sure many of these emigrants lose their health after one or two years, and not a few become consumptive. I derive this opinion, no doubt, from personal observation and inquiry within a very limited sphere, and I am the more anxious that it should be thoroughly examined. But in the absence of more direct tests, what can be more justifiable than to accept the least improbable doctrine? And if Mr. Humphreys proves to be right, I think we shall have learned something more startling even than what I presumed to suggest; for I do not suppose anybody has yet consciously accepted the idea that young women between 15 and 25 in country districts (say in Suffolk) are so weak or so badly cared for as to show a rate of mortality exceeding by 50 per cent. the average of the metropolis, a place where the infantile mortality is two-thirds higher, and where the death-rates in more advanced life are nearly half as high again.

The importance which ought to be attached to Mr. Humphreys' suggestion as to the vast majority of servants being single women, and not subject to the accidents of childbirth, admits of being measured thus:—

First, we find that the proportion of women aged 15—25 who are single is nearly the same in the metropolis as in the surrounding counties, thus:—

1871. *Percentages of Women Aged as under who are Single.*

Division.	15—20.	20—25.
	Per cent.	Per cent.
I. London	96·6	66·9
II. South Eastern Counties	97·2	68·3
III. South Midland Counties	97·7	67·5
IV. Eastern Counties	97·2	65·3
Suffolk	97·6	65·3

Then, taking the causes of death at age 20—25 in London and in the eastern counties, for 1851-60, we have:—

	Annual Rate per 100,000.		
	London.	Eastern Counties.	Difference.
Zymotic diseases	127	141	+ 14
Cancer	5	4	— 1
Scrofula, &c.	8	23	+ 15
Phthisis	282	530	+ 248
Disease of brain	34	49	+ 15
Diseases of heart, and dropsy	34	34	—
" lungs	36	42	+ 6
" stomach and liver	31	36	+ 5
" kidneys	8	6	— 2
" generative organs	5	5	—
Childbirth and metria	51	57	+ 6
Violent deaths	15	8	— 7
Other causes	14	32	+ 18

This table shows that the excess of deaths in the eastern counties at the age in question is mainly caused by phthisis, and that the smaller number of deaths by violence in the eastern counties is by itself enough to counterbalance the moderate excess of deaths in childbirth.

Another argument against the belief that young women enjoy in London better health than they do in the country *owing to their living under better sanitary conditions* as to diet, house accommodation, and clothing, may be gathered from a consideration of the mortality they experience in the most wretched parts of the town, which may be distinguished as those where the infantile death-rate is highest:—

Average Mortality in 1851-60 (per 1,000) amongst Females Residing in

Age.	St. Giles.	Holborn.	East London.	Whitechapel.	England and Wales.
0—5	100·1	92·1	94·2	98·2	62·7
15—20	6·5	5·2	5·2	4·0	7·4
20—25	6·4	6·9	6·6	7·9	8·5
55—65	42·7	40·9	39·2	38·7	27·0
65—75	83·3	77·5	77·8	77·9	58·7

It is not very easy to conceive that the women-servants in Whitechapel and St. Giles's enjoy an enviable fate compared with their rural sisters, and the explanation I have suggested is not such as to require this supposition.

Other questions may be asked—for instance, it is not easy to understand why, if the women who remain in the rural districts are subject to so heavy a mortality, there should not be a corresponding death-rate amongst their brothers, who are living under similar conditions. The mortality from phthisis alone, which is shown in my former paper, exhibits some curious contrasts when regarded from this point of view, thus:—

Average Mortality from Phthisis in 1851-60 (per 1,000).

Age.	London and Environs.		England and Wales.		"Outer Ring."	
	Males.	Females.	Males.	Females.	Males.	Females.
15—20	2·0	2·1	2·4	3·5	2·0	4·0
20—25	3·6	2·8	4·1	4·3	4·2	5·2
45—55	6·0	3·2	3·8	3·1	3·2	3·1
55—65	5·0	2·3	3·3	2·4	2·6	2·2

The male inhabitants of the "outer ring" thus show rates of mortality which are quite moderate compared with those experienced by females in the same districts. Yet it is equally true of them as of the other sex, that the more active and vigorous have been drawn away in great numbers to the metropolis and elsewhere. At higher ages (after the influence of migrations in withdrawing the best lives has done its worst) we do not find an aggravation of this disparity; on the contrary, it is most striking in the case of young people under 20.

In fact, I feel fully justified, whilst pointing out that the explanation suggested by Mr. Humphreys is not necessarily antagonistic to mine, in maintaining that there is the very gravest reason for the belief that the heavy mortality amongst females in the rural districts at certain ages is *not* to be accounted for without travelling beyond those districts; and that however much the attractions of more remunerative employment may tend to withdraw the most healthy and enterprising members of rural families, those who remain behind are by no means a bad sample of our population. I therefore repeat that "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 number of deaths of persons born in

* No doubt legislation would be necessary before this information could be had; but such information would be of value on grounds unconnected with statistics.

“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 death-rates 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 that the recorded 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.”

Results of the Statistics of Mortality in 1861-70.

It would have been a heavy undertaking to have treated the statistics of this period as elaborately as I did those of 1851-60. I have, therefore, restricted myself to obtaining the ratios of mortality at certain ages in the metropolis and in eight of the surrounding counties, for each year from 1861 to 1870, and the average ratios for those ten years.

Table I exhibits the averages of the decennium. These will be found to follow the law already ascertained from the facts of the preceding ten years.

At the age 0—5 and at ages 55—75 the eight counties are many degrees more salubrious than London. At ages 10—35 the following statement shows in how many of them the mortality exceeds the London rate :—

Ages.	Males.	Females.
10—15.....	None	4
15—20.....	”	All
20—25.....	2	”
25—35.....	None	6

Table II shows the rates of mortality at the ages mentioned therein in each year from 1861 to 1870, in London (registration division) and in Suffolk.

The constancy of the phenomena may be thus shown:—

Ages.	Number of Years in which the Suffolk Mortality was				Maxima (Females).		Minima (Females).	
	Highest.		Lowest.					
	For Males.	For Females.	For Males.	For Females.	London.	Suffolk.	London.	Suffolk.
0— 5.....	—	—	10	10	81·7	57·6	71·0	40·0
10—15.....	3	7	7	3	5·1	7·3	3·1	3·3
15—20.....	4	10	6	—	5·7	9·1	4·6	6·4
20—25.....	7	10	3	—	7·3	11·4	5·8	7·2
25—35.....	—	9	9	1	10·0	11·1	7·9	8·7
55—65.....	—	—	10	10	39·4	23·6	30·5	18·6
65—75.....	—	—	10	10	80·7	53·6	60·8	42·6

The extreme contrasts in the case of females, and the less marked, but similar contrasts in that of males, between the London death-rates and those experienced in the surrounding rural districts, are well shown by this table.

In Table III the like data are given for the counties of Wilts and Cambridge, where the infantile death-rates are respectively lowest and highest of any in the eight counties mentioned in Table I. The comparisons with London rates come out thus:—

Ages.	Number of Years in which the Wiltshire Mortality was				Number of Years in which the Cambridge Mortality was			
	Highest.		Lowest.		Highest.		Lowest.	
	For Males.	For Females.	For Males.	For Females.	For Males.	For Females.	For Males.	For Females.
0—5	—	—	10	10	—	—	10	10
10—15.....	—	3	9	6	4	6	5	4
15—20.....	1	9	9	1	4	10	6	—
20—25.....	3	10	7	—	3	10	7	—
25—35.....	—	7	10	1	—	6	10	4
55—65.....	—	—	10	10	—	—	10	10
65—75.....	—	—	10	10	—	—	10	10

These summaries, though dissimilar, generally resemble each other in so far as the infantile death-rates in rural counties and also the death-rates at ages 55—75, are shown to be invariably lower than in London, whilst at ages 10—35 a few of the death-rates amongst

males, and the majority of the death-rates amongst females, appear to be higher in the country than in London.

One more aspect of the matter was presented in my former paper, and is too striking to be passed over without notice. I allude to the proportions existing between the death-rates of the two sexes, at several ages. The following statement will sufficiently illustrate what I mean:—

Place.	Age 0—5.			15—20.			20—25.		
	Death-rate, Males.	Death-rate, Females.	Ratio as 100 to	Death-rate, Males.	Death-rate, Females.	Ratio as 100 to	Death-rate, Males.	Death-rate, Females.	Ratio as 100 to
1851-60.									
England and Wales .	72·4	62·7	87	6·7	7·4	110	8·8	8·5	97
London and environs	81·4	71·4	88	6·2	5·5	88	8·3	6·4	78
Inner ring	55·7	47·3	85	5·8	7·2	125	8·7	8·2	94
Outer ring	57·9	49·0	85	6·0	8·3	137	9·0	9·8	109
1861-70.									
England and Wales .	73·4	63·6	87	6·2	6·6	106	8·5	8·0	94
London	87·2	76·6	88	5·8	5·1	88	8·3	6·2	75
Kent	60·2	51·1	85	5·4	6·2	115	7·4	7·6	103
Sussex	52·2	43·5	83	5·2	6·6	127	8·8	7·3	83
Wilts	48·8	40·5	83	4·9	6·4	131	7·9	8·4	106
Oxford.....	55·2	47·9	87	4·4	6·3	143	7·0	8·1	116
Hertford	55·1	48·3	88	4·4	6·0	136	6·8	7·6	112
Cambridge	62·5	51·5	82	5·3	7·2	136	7·6	7·8	103
Suffolk.....	53·2	45·4	85	5·7	7·6	133	8·8	9·2	105
Essex	57·5	48·9	85	5·1	7·1	139	7·5	8·4	112

It will be noticed that whilst the female death-rate at age 0—5 ranges from 82 to 88 per cent. of the male-rate, its relative regularity thus demonstrating (what needed no proof) that the local influences which affect the mortality of children of tender age are common to both sexes, the like ratios vary from 88 to 143 at age 15—20 and from 75 to 116 at the age 20—25. Such variations are natural and indeed inevitable if the explanation I have suggested is the true one. I am not so sure that they are reconcileable with the theory mentioned by Mr. Humphreys.

In calculating rates of mortality, throughout this paper, I have made use of the Census Returns of Ages as they stand. I am quite aware that they require correction, but no one that I know of has made the necessary calculations for the purpose of determining what corrections should be applied.

TABLE I.—*Showing the Annual Average Rates of Mortality (per 1,000) in the Ten Years 1861-70, among Males and Females respectively, at the Ages Specified, in the Registration Division of London, and in Eight Registration Counties.*

Ages.	London.	Kent.	Sussex.	Wilts.	Oxford.	Hertford.	Cambridge.	Suffolk.	Essex.
<i>Males—</i>									
0—5	87·2	60·2	52·2	48·8	55·2	55·1	62·5	53·2	57·5
10—15	4·3	3·7	3·5	3·5	3·3	3·4	3·9	3·9	3·8
15—20	5·8	5·4	5·2	4·9	4·4	4·4	5·3	5·7	5·1
20—25	8·3	7·4	8·8	7·9	7·0	6·8	7·6	8·8	7·5
25—35	10·9	9·6	9·6	9·1	8·7	8·2	9·3	8·9	8·9
55—65	44·0	27·5	27·0	26·0	26·2	26·5	24·0	23·5	26·4
65—75	83·2	59·2	58·3	59·7	60·8	61·3	57·7	51·6	59·0
<i>Females—</i>									
0—5	76·6	51·1	43·5	40·5	47·9	48·3	51·5	45·4	48·9
10—15	4·1	4·2	4·1	3·8	4·1	3·9	4·3	4·8	4·5
15—20	5·1	6·2	6·6	6·4	6·3	6·0	7·2	7·6	7·1
20—25	6·2	7·6	7·3	8·4	8·1	7·6	7·8	9·2	8·4
25—35	8·8	9·0	8·9	9·3	9·0	8·2	9·1	10·0	8·6
55—65	33·6	23·4	23·5	24·9	23·8	23·5	21·2	21·1	22·9
65—75	67·6	52·9	53·3	57·3	56·5	54·3	47·7	47·0	51·9

TABLE II.—*Showing the Rates of Mortality* (per 1,000) in each Year, from 1861 to 1870, among Males and Females respectively at the Ages specified, in the Registration Division of London and the Registration County of Suffolk.*

Year.	Age 0—5.				10—15.				15—20.			
	Males.		Females.		Males.		Females.		Males.		Females.	
	London.	Suffolk.	London.	Suffolk.	London.	Suffolk.	London.	Suffolk.	London.	Suffolk.	London.	Suffolk.
1861....	84·6	59·2	75·4	51·7	4·1	4·2	4·1	5·2	5·9	6·1	5·0	8·8
'62....	82·2	49·4	72·7	43·0	4·1	3·4	4·1	4·8	5·5	5·0	5·3	6·4
'63....	89·0	66·3	77·1	57·6	4·7	6·7	5·1	7·3	6·2	7·2	5·4	8·5
'64....	92·5	56·0	81·7	47·1	4·4	5·1	4·1	5·8	6·2	6·7	5·4	9·1
'65....	85·9	53·1	77·1	46·7	4·5	3·4	3·8	4·9	6·2	5·4	5·0	6·5
'66....	93·7	49·4	81·7	44·8	4·9	3·1	4·7	3·7	6·6	5·2	5·7	8·4
'67....	80·8	50·5	71·0	41·5	3·4	3·3	3·1	4·3	5·4	5·3	4·8	6·4
'68....	86·0	46·1	75·5	40·0	3·9	3·3	3·7	3·3	5·6	4·9	4·9	8·1
'69....	91·2	51·6	80·9	41·0	4·2	2·5	4·1	3·9	5·5	4·9	4·6	6·8
'70....	86·5	50·1	73·0	41·5	4·4	3·6	4·1	4·6	5·6	6·5	5·1	7·2

Year.	20—25.				25—35.				55—65.				65—75.			
	Males.		Females.		Males.		Females.		Males.		Females.		Males.		Females.	
	Lon- don.	Suf- folk.	Lon- don.	Suf- folk.	Lon- don.	Suf- folk.	Lon- don.	Suf- folk.	Lon- don.	Suf- folk.	Lon- don.	Suf- folk.	Lon- don.	Suf- folk.	Lon- don.	Suf- folk.
1861....	7·2	8·8	5·8	11·4	9·6	9·6	7·9	11·1	41·4	23·3	32·2	23·6	82·8	56·2	66·0	44·7
'62....	8·4	7·9	5·9	10·2	10·1	9·0	8·6	9·1	45·4	20·8	33·5	18·6	82·6	48·3	67·9	43·3
'63....	8·1	10·0	6·3	10·9	10·4	9·9	8·8	11·0	43·7	25·6	32·0	20·9	80·9	48·5	63·7	45·0
'64....	9·1	10·2	6·8	10·9	11·5	9·0	9·7	9·9	49·7	25·6	39·4	20·3	91·0	55·3	80·7	46·4
'65....	8·3	9·6	6·2	9·6	11·4	7·8	8·9	10·3	45·7	23·7	35·4	19·5	87·1	55·4	68·0	51·9
'66....	9·8	9·1	7·3	8·5	12·7	7·8	10·0	8·7	45·9	22·9	36·1	21·2	84·5	48·8	71·7	46·1
'67....	8·4	8·2	6·0	7·2	10·9	8·5	8·4	9·5	43·1	23·2	32·0	23·4	80·6	49·7	66·4	48·4
'68....	8·2	8·6	6·0	7·9	10·9	8·9	8·7	10·0	40·4	22·7	30·5	20·7	77·8	46·2	60·8	42·6
'69....	7·5	8·0	5·9	8·0	10·3	9·7	8·7	9·4	42·9	23·4	31·5	20·7	80·8	55·4	65·2	48·4
'70....	7·6	8·1	6·0	7·4	11·1	8·8	8·7	10·4	42·4	24·0	33·5	22·0	84·6	52·6	66·0	53·6

* The populations used in calculating these death-rates are assumed to have increased equally each year between 1861 and 1871, and are calculated on that footing for the middle of the respective years. This table and the next may be usefully studied for the purpose of ascertaining the extent to which death-rates, even for wide districts, may be expected to vary from one year to another.

TABLE III.—*Showing the Rates of Mortality (per 1,000) in each Year from 1861 to 1870 among Males and Females respectively, at the Ages specified, in the Registration Counties of Wilts and Cambridge.*

Year.	Age 0—5.				10—15.				15—20.			
	Males.		Females.		Males.		Females.		Males.		Females.	
	Wilts.	Cam-bridge.	Wilts.	Cam-bridge.	Wilts.	Cam-bridge.	Wilts.	Cam-bridge.	Wilts.	Cam-bridge.	Wilts.	Cam-bridge.
1861....	45·7	71·5	35·8	64·9	3·0	4·5	3·6	5·1	5·8	6·5	6·1	7·3
'62....	51·7	59·5	37·9	48·6	4·1	5·5	3·5	4·8	4·8	5·7	5·8	9·3
'63....	53·2	67·5	47·6	59·8	4·2	3·6	4·4	5·2	5·2	4·9	7·5	9·0
'64....	55·6	66·3	44·5	52·6	4·1	5·5	4·3	5·3	6·9	6·6	7·5	8·4
'65....	46·5	68·4	43·5	55·6	3·8	3·3	5·8	3·7	5·6	5·3	8·3	6·7
'66....	44·7	57·2	35·7	43·1	3·2	3·1	2·8	4·3	4·0	5·5	6·4	7·2
'67....	47·4	55·0	37·4	44·6	3·1	3·6	3·0	3·7	4·0	5·7	5·3	6·4
'68....	39·6	58·5	35·6	49·9	2·5	2·8	3·9	3·5	4·6	3·5	6·1	5·7
'69....	44·9	57·6	37·1	45·2	2·8	2·7	2·8	4·2	4·1	4·0	4·3	6·0
'70....	58·7	64·3	49·7	48·9	3·8	4·4	4·1	3·6	4·4	5·0	6·8	5·7

Year.	20—25.				25—35.				55—65.				65—75.			
	Males.		Females.		Males.		Females.		Males.		Females.		Males.		Females.	
	Wilts.	Cam-bridge.	Wilts.	Cam-bridge.	Wilts.	Cam-bridge.	Wilts.	Cam-bridge.	Wilts.	Cam-bridge.	Wilts.	Cam-bridge.	Wilts.	Cam-bridge.	Wilts.	Cam-bridge.
1861....	8·3	9·1	8·3	9·1	8·4	8·7	8·8	9·2	26·0	21·9	25·2	24·5	50·4	50·6	57·8	40·7
'62....	7·8	8·1	7·5	8·2	9·3	9·7	9·7	9·1	22·2	24·3	22·5	21·4	58·0	53·7	55·0	52·2
'63....	7·7	8·5	10·0	8·7	9·9	10·2	9·6	9·6	28·3	22·7	25·5	21·2	58·5	66·1	57·5	51·8
'64....	8·9	6·4	9·7	8·9	8·5	9·9	10·3	9·6	28·6	24·9	27·6	23·2	61·3	64·8	62·6	51·7
'65....	9·5	6·6	9·8	6·8	9·1	9·4	9·2	10·0	28·1	28·0	24·9	22·6	60·4	49·2	57·6	48·7
'66....	7·8	7·8	7·8	8·1	9·5	9·8	7·8	10·7	23·6	22·6	21·7	17·4	64·6	58·9	51·3	44·1
'67....	7·1	9·0	9·7	6·9	9·0	8·8	8·4	10·0	26·9	23·5	25·1	22·7	59·1	55·2	56·2	47·4
'68....	7·5	7·6	7·3	8·4	8·8	8·0	8·7	7·9	24·6	22·2	24·4	19·4	54·8	58·9	49·7	40·3
'69....	6·3	6·4	6·2	6·7	10·0	9·3	9·6	8·3	28·1	23·9	24·6	19·3	66·6	57·0	59·8	49·5
'70....	8·4	7·2	7·4	6·7	8·9	9·1	10·8	7·1	23·1	26·1	27·5	20·6	62·5	62·2	65·0	50·6