

VITAL STATISTICS :
MEMORIAL VOLUME OF SELECTIONS FROM
THE REPORTS AND WRITINGS
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Life and Death in England.—How the people of England live is one of the most important questions that can be considered; and how—of what causes, and at what ages—they die is scarcely of less account; for it is the complement of the primary question teaching men how to live a longer, healthier, and happier life.

The vital units to be specially dealt with are persons living and persons dying in the ten years 1861–70, only distinguishing them into units representing males and females of different ages and occupations, losing life year after year by various causes, in about 627 districts extending from the borders of Scotland to the English Channel and from the Irish Sea to the German Ocean. The deaths in the several classes have to be compared with the population enumerated at three decennial censuses, in corresponding groups.

The long series of Tables offers a retrospect extending over the ten years, and is in continuation of a series embracing the previous ten years, with which it is compared.

The primary object is to determine what the death-toll* is at the several ages, and what the causes of the loss of life are, under different circumstances. The importance of this determination will become apparent by enumerating some of the relations the mortality bears to other orders of facts. There is a relation betwixt death and sickness; and to every death from every cause there is an average number of attacks of sickness, and a specific number of persons incapacitated for work. Death is the extinction of pain. There is a relation betwixt death, health, and energy of body and mind. There is a relation betwixt death, birth, and marriage. There is a relation betwixt death and national primacy: numbers turn the tide in the struggle of populations, and the most mortal die out. There is a relation betwixt the forms of death and moral excellence or infamy; men destroy themselves directly or their fellows under the most varied mental conditions; they may die by indulgence in excesses, by idleness, or by improvidence. Death is met especially in primeval races not only in conflicts with each other, but in conflicts with other races of animals—directly with great carnivorous quadrupeds or creeping poisonous serpents, and indirectly with four-footed animals, winged birds, and multitudinous insects, blighting or consuming food. Death is also wrought by low but organised parasites in the body. It is still more frequently the result of elementary molecules (zymads) which, though of no recognised form, evidently thrive, propagate, die in the bodies of men, disintegrating or devitalizing their tissues.

There is finally a relation betwixt death and the mean lifetime of man; if a life passing through a given time is represented by a line, death is the point of termination as birth is the point of origin. And a generation of men born together is represented by an indefinite number of such lines of life. The natural lifetime of man is a century; that age under ordinary conditions is, as the Etruscans remarked, attained by at least *one* in every considerable generation, and they made it their *sæculum*; as in that time are passed through all the phases of childhood, youth, manhood, maturity, and monumental age.† The mean lifetime in the healthiest districts of England—and in the healthiest ranks—is

* This compound of Saxon words appears to be preferable to “death-rate” or “death-tax;” it is equivalent to “rate of mortality.”

† See Census Report of 1851, Vol. I., p. xv.

49 years; and we have no evidence that under the most favourable conditions it exceeds 50 years. Actually individual life varies in duration from a second to a century. And the relation to be shown here is between the dying by different causes and the living at every stage of the march of a generation through time. The mean lifetime of a generation may be the same, and yet the several lifetimes of the individuals of which it is composed may vary infinitely; under the actual laws of mortality, great numbers die in infancy, few in adolescence, more in manhood, and, after infancy, the greatest number by the English Table at the age of *seventy-three*, the numbers born having fallen in the proportion of ten born alive to two then surviving. It is evident that an entire revolution in the life of the human race would follow if every person born lived the average lifetime of fifty years, or if half the deaths happened in infancy and the other half at the end of 100 years or at any very advanced age. What we observe actually is that in certain conditions the mean lifetime sinks to half its standard length; and that this is the result of the high mortality in the first five years, of the reduced mortality in adolescence, and of the increasing mortality in manhood up to the ultimate term of life; few old people surviving and few dying therefore after four score years, especially in such unfavourable conditions as exist in Liverpool.

Under the existing state of things, of the constituent lives of every generation a certain number dies at every age of causes to be investigated under two heads:—direct and organical, including diseases and injuries; and remote and indirect, namely, the causes of those diseases and injuries. Before entering upon the investigation two preliminary questions have to be discussed. (Supplement to 35th Annual Report, pp. 3-4.)

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Arranging the districts of England in the order of their mortality, it is found that the annual mortality in the various groups ranges from the rate of 15 to 39 per 1,000; the birth-rate from 29 to 40 per 1000; and it is seen that, in the next Table, as the death-rate increases, the birth-rate increases, so that in all the districts with a mortality under 25 per 1,000 the natural increase of population is very constant. The mortality increases with the density of the population; and thus every additional death is met by an additional birth.

DENSITY OF POPULATION, DEATH-RATE, BIRTH-RATE, EXCESS OF BIRTHS over DEATHS, and INCREASE of POPULATION per 1,000 PERSONS LIVING, in Seven Groups of Districts arranged in the Order of Mortality.

Number of Districts.	Range of Mortality: Rates per 1,000 Living.	Persons to a Square Mile.	1861-70.			
			To 1,000 PERSONS LIVING.			
			Average Annual Deaths.	Average Annual Births.	Average Annual Excess of Births over Deaths.	Average Annual Increase of Population in middle of period.
ENGLAND & WALES } 619 }	15-39	367	22·4	35·1	12·6	12·4
54	15-17	171	16·7*	30·1*	13·4	15·8
349	18-20	195	19·2	32·2	13·0	8·8
142	21-23	447	22·0	35·6	13·6	16·2
56	24-26	2,185	25·1	38·1	13·0	15·3
16	27-30	6,871	27·8	39·1	11·3	8·9
1	32	12,172	32·5	37·3	4·8	3·2
1	39	65,834	38·6	37·6	-1·0	-12·3

* These rates are obtained by dividing the aggregate deaths and births in the districts having an average annual mortality ranging from 15 to 17 per 1,000, by the aggregate population of those districts ($\frac{D}{P}$). Each group is treated in the same manner.

In the first stage of the scale, that is in the 54 healthy districts, the death-rate is 16·7, the birth-rate 30·1; in the second stage the death-rate is 19·2, the birth-rate 32·2; in the third stage the death-rate is 22·0, the birth-rate 35·6; in the fourth stage the death-rate is 25·1, the birth-rate is 38·1. The natural increase of population in each of these four stages ranges from 13·0 to 13·6, or is severally 13·4, 13·0, 13·6, 13·0. When the mortality reaches the *fifth stage* the death-rate is 27·8, the birth-rate 39·1; and after that point, while the death-rate increases to 32·5 in Manchester and 38·6 in Liverpool, the birth-rate recedes to 37·3 and 37·6, and there is a decrease of indigenous population, which if it should go on might end in a decrease of population in geometrical progression.

Should the deaths in the districts where the mortality is 22·0 per 1000 be reduced by sanitary measures to the same level as in the districts where the mortality is 19·2, the births might be reduced in the same or a greater degree, namely, from 35·6 to 32·2; and should the death-rate be brought down to 16·7, the birth-rate might be reduced, as in the healthiest districts, to 30·1; the deaths falling 5·3, the births actually fell 5·5 per 1,000, as shown in the table. The fall of the birth rate is observed in the existing circumstances of this country; it maintains a uniform increase in districts under different laws of mortality, but it is not a necessary consequence of a reduced death-rate, and if, in the opinion of the parties concerned, their prospects are good, they marry and procreate children at the same rate as before; in that case the population increases faster; whereas in a depressed condition the births fall off until the population becomes stationary, or declines.

Thus there is no inevitable connection between the gradual reduction of the mortality of the whole kingdom to the rate of 17 per 1,000 and the more rapid increase of population; because the birth-rate may of itself fall to the level of that now prevailing in the healthiest districts and leave the increase of population as it was. Statesmen are not then, by alarming cries of increase of population in a faster geometrical progression, to be deterred from the noblest work in which they can engage; for it is certain that population as it improves in England will not increase faster than the requirements of industry in all its forms at home or the new openings of colonial enterprise abroad. (Supplement to 35th Annual Report, pp. xii-xiv.)

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Probable Decrease of Mortality.—There are many obstacles to the sanitary progress of a nation, and it is evident that at present they can only be overcome in part; but there is no ground for despair. There has been progress. The mean lifetime of sovereigns and peers is prolonged; it was in past ages much shorter than the lifetime of the unhealthy labourers in the cities of to-day. The mortality of the city of London was at the rate of 80 per 1,000 in the latter half of the seventeenth century, 50 in the eighteenth, against 24 in the present day. The mortality in the liberties of the city of London within and without the walls was in the four plague years 1593, 1625, 1636, 1665, at the rate of 24, 31, 13, and 43 per cent. In the city alone 90,472 persons died of plague in the four epidemics, and 55,604 of other diseases. The enumerated population of the city was 130,178 in 1631. In the cholera epidemic year of 1849 the mortality from all causes in the metropolis was only 3 per cent. And in the last two epidemics there was a further decline. Thus it is as certain that the high mortality can be reduced by hygienic appliances down to a certain limit as it is that human life can be sacrificed.

The analysis of the causes of the mortality renders it still further certain that the actual mortality of the country can be reduced. Many of the destroyers are visible, and can be controlled by individuals, by companies, and by corporate bodies, such as explosions in coal mines, drowning in crazy ships, railway collisions, poisonings, impurities of water, pernicious dirt, floating dusts, zymotic contagions, crowdings in lodgings, mismanagements of children, neglects of the sick, and abandonments of the helpless or of the aged poor.

Furthermore, including the London district of Hampstead, there are fifty-four large tracts of England and Wales which actually experience a mortality at the rate of only seventeen per 1,000—less by *five* than the average mortality per 1,000 of the whole country, less by *ten* than in nine districts, and less by *twenty-two* than the mortality reigning for ten years in Liverpool. Now the healthy districts have a salubrious soil, and supply the inhabitants with waters generally free from organic im-

purities. The people are by no means wealthy; the great mass of them are labourers and workpeople on low wages, whose families get few luxuries, and very rarely taste animal food. Their cottages are clean, but are sometimes crowded, and impurities abound; the sanitary shortcomings are palpable.

It will not, therefore, be pitching the standard of health too high to assert that any excess of mortality in English districts over 17 *annual deaths* to every 1,000 living is an excess not due to the mortality incident to human nature, but to foreign causes to be repelled, and by hygienic expedients conquered.

It is right to state that the real is greater than the apparent mortality of these districts; they are increasing, and contain an undue proportion of population at the younger healthiest ages, so that a correction for this makes the mortality 20 instead of 17. That is the rate of their stationary mortality if the population were stationary, if births equalled deaths, and there were no migration.

The mean annual deaths at the rate of 22·4 in the ten years 1861–70 were 479,450 in England; and had the rate of mortality been 17 the annual deaths would not have exceeded 363,617; so the overplus due to the operation of causes existing, but less destructive in the healthier districts was 115,833. The hope of saving any number of these 115,833 lives annually by hygienic measures is enough to fire the ambition of every good man who believes in human progress. (Supplement to 35th Annual Report, pp. viii–ix.)

Possibilities and Difficulties of extending Human Life.—The laws of life are of the highest possible interest, even if the knowledge of those laws gave men no more power over the course of human existence than the meteorologist wields over the storms of the atmosphere, or the astronomer over the revolutions of the heavens. But all human laws proceed on the belief that the lives of individuals and of communities can, within certain limits, be regulated for good or for evil; and as latterly this has been questioned, it becomes necessary to discuss the problem—can lifetime be prolonged by a knowledge of the causes that cut it short, or by any means within a nation's power?

To live long is a natural aspiration, and in the early years of the marvellous science of chemistry the alchemists sought with as much ardour as they sought the philosopher's stone for an *elixir vitæ* to confer on man perpetual prime; they promised him, by its discovery, immortality upon earth. The possibility of this seems to have been an ancient belief, for in one of the oldest legends man had been told that he should not die—that he should live for ever. And it had in it some grounds, or it could never have led the first Bacon, Descartes, Franklin, and Condorcet to intimate that human life might be prolonged indefinitely. The forces, as well as the constituents of the body, are in truth indestructible; but they are fugitive, and are perpetually passing out of the men of existing generations into other forms: the flame of consciousness shines in one life only for a while. But the alchemists were right when they saw virtues in minerals and trees to prolong as well as to shorten life; to check disease and to set the body free; for if mercury, arsenic, antimony, iron, potash, soda, magnesia, phosphorus, chlorine, iodine, sulphur, in their various salts and acids; if strychnia, quinine, opium, chloroform, æther, ipecacuanha, camphor, and alcohol, will kill, they will also cure in the hands of the skillful. Surgery too has its great triumphs. Therapeutics is not a delusion, the Healer is a reality. But no drug can do more than prolong life for a time; the man raised from the grave dies in the end. Life can be lengthened by regimen—by dietetics, which Celsus says engaged in his day the most eminent professors of medicine in Rome, because it is the most potent and philosophical, dealing in regimen of mind and body, and medicinally controlling aliment, air, sleep, and exercise. The influence of the external world of air, water, soil, and climate on health and length of life was placed beyond doubt by the great treatise of Hippocrates. And Moses had before inculcated the exclusion of the sick by zymotic diseases from the Congregation. In these latter days science has gone further, and shown under what conditions the lifetime is long or short; and the science of life, yet only in its infancy, will make further progress, and solve many problems hitherto held to be insoluble, when hygiene is cultivated in all the medical schools. The genius of agriculture, of engineering, of industry, and of commerce is growing every year, and handling new power in new machines, is supplying new means of existence, and banishing fatal impurities.

Descent is easy, and onward motion over a level road is not difficult; but every step upwards to a higher state encounters obstacles; and so it is in the improvements of the human race. Of this a few examples are instructive:—small-pox is a fatal disease, and after it had been learnt that a milder type could be induced artificially, fatal to few of the inoculated, the practice was introduced in London, and was publicly performed in the years 1746–63 on 3434 persons at the small-pox hospital; only 60 of whom it is said died of the disease.* The mortality varied in different places, but it was nowhere considerable. What appeared so well fitted to justify Lady Mary Wortley Montague's exultation when she learnt in Turkey that "ingrafting" rendered small-pox harmless? "I am patriot enough," she wrote in 1718, "to take pains to bring this "useful invention into fashion in England." But it was found after it was brought that the deaths from small-pox in London, compared with the deaths from all other causes, and also the absolute mortality, increased considerably when inoculation became common. Large numbers of children and adults remained unprotected, and inoculation kept the *variolads* alive in an artificial nursery. Inoculation is now made illegal. Again, hospitals were opened to receive people attacked by this dreadful disease, and to afford them the advantages of watchful attendance and skilful advice. This was carried out in London; but the mortality of the patients in the hospital was double the mortality by the disease outside.† Here was another apparent failure. But vaccination was a great advance on inoculation; the danger of the operation was quite inconsiderable, and cowpox, unlike small-pox, never scattered abroad the seeds of disease. In 1771–80 small-pox in London was the cause of 100 in every 1000 deaths, in 1831–5 of 27, in 1861–70 of 11, and in the absolute mortality by this disease there was a large reduction. In the last two decennials, 1851–70, the mortality per 100,000 by small-pox remained stationary in London at 28. In all England the mortality per 100,000 by small-pox declined from 22 to 16, or to the extent of 6; but population growing denser the mortality by scarlet fever rose from 88 to 97, thus increasing 9, or one and half times as much as the mortality by small-pox decreased. The mortality by measles, diphtheria, and whooping-cough also increased. Vaccination diminished the chances of taking small-pox, and though it did not afford absolute security, it reduced the danger of its attacks. But, density of population increasing, other zymotic principles appeared to find in its absence freer scope for their destructive operations. In quenching the flames at one point the good work is begun but it is not ended. Can zymotic diseases of all kinds never be quenched?

Out of pity for poor children Foundling hospitals were erected, but the babies nearly all perished, and a greater number than ever were abandoned. Had these hospitals succeeded the race of child-abandoning men must have been multiplied.

Another example is offered by the drainage of towns. In London the fatal refuse which had been retained in the houses was conveyed by water into the drains and into the Thames; and this was an advance on the previous state of things; but the sewers were charged with impurities; they put houses by their effluvia in communication with each other, and poured zymotic elements into the waters which were distributed by companies to the houses of both the wealthy and the indigent. And even at the present hour the sewage is pumped into the Thames, which it pollutes and obstructs, instead of being distributed over the land to which it belongs. The same difficulty in disposing of sewage is encountered in all English towns.

In the early ages the English population was scattered in slight dwellings over woods, meads, and undrained marshland, where they suffered from agues, rheumatisms, and famine fevers; as the people multiplied they assembled in cities and partook of a few of the advantages of civilization; but the increase of density brought new dangers, and, as the proximity of houses exposed towns to conflagrations, it laid their inhabitants open to devastating maladies, and to destructive pestilences. The people flocked in numbers to London in the reigns of Henry VIII., of Elizabeth, and of James, and the sweating sickness and fevers and the

* Duvillard cites Dr. Jurin, who prepared a table showing that out of 447 inoculated with effect 9 died; Dr. Monro inoculated 5554 persons, of whom 72 died; Dr. Gregory set down the mortality at 3 in 1000. By natural small-pox the mortality per 1000 attacked ranges from 150 to 300.

† The mortality in the Small-pox Hospital was at the rate of 25 per cent. in 1746–63, for 1634 of 6456 patients died. For later returns see Letter to the Registrar General in Appendix to 34th Annual Report.

oriental plague decimated the population. The Restoration brought country families to the metropolis, and the plague made its ever-memorable swoop. The manufactures, the mines, and the great works that create subsistence for thousands, collect workmen in towns as ill-provided with sanitary appliances as ill-organised camps; and thus Lancashire, Yorkshire, Durham, South Wales, are still in a high degree insalubrious. Until the Legislature, led by Lord Shaftesbury, intervened, the lives of young children and mothers were barbarously sacrificed in the factories and mines. Here is seen again the success with which evil poisons the healing springs of industry.

The low wages of large numbers of artisans in towns deprived them of the means of healthy life; latterly wages have risen, and they had the command of those means to a larger extent, but unfortunately the consumption of spirits and other stimulants absorbed their wages to the no small detriment of health. To sweep out the dusty and close workshops they are apt to be made draughty, so difficult is it to improve the health of artisans.

In the last twenty years the towns of England have increased from five hundred and eighty to nine hundred and thirty-eight; their population from nine to fourteen millions; and the health of the whole population of the country has remained stationary.

Breeders reject weakly animals from their stock, and thus achieve success. By the care now taken of the humblest member of the human race the weakly, it is said, survive; they marry and propagate, and thus, as some contend, the proportion of inferior organizations is raised. The imbecile, the drunkard, the lunatic, the criminal, the idle, and all tainted natures were once allowed to perish in fields, asylums, or gaols, if they were not directly put to death, but these classes and their offspring now figure in large numbers in the population. (Supplement to 35th Annual Report, pp. v-viii.)

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Relative Mortality of Males and Females at Seven Age Periods, in Eight Groups of Districts, 1861-70.—The following Table affords valuable evidence of the varying incidence of the effect of density of population and of insanitary conditions upon males and females living at seven age periods, in various groups of districts in which the annual rate of mortality, during the 10 years, 1861-70, ranged from 15 to 39 per 1,000. The rates prevailing at each age period, in each sex, are compared with the rates that ruled in the 53 healthy districts in order to show the relative excess at each age period, and of each sex, in the more unhealthy districts.

Mortality Range - -		15-17	18-20	21-23	24	24-26	27-30	32	39	
Persons to one square mile - - -		166	186	379	25,671	1,718	4,499	12,357	65,823	
DEATHS OF MALES AND FEMALES, out of Numbers living.										
AGES.	Sex.	Numbers living.	In various groups of districts							
			In 53 Healthy Dis-tricts.	In 345 Dis-tricts.	In 137 Dis-tricts.	In Lon-don.	In 47 Dis-tricts.	In 9 Dis-tricts.	In Man-chester Dis-trict.	In Liver-pool Dis-trict.
ALL AGES	{ Males -	5,692	100	112	130	151	149	172	201	233
	{ Females	6,131	100	114	128	137	144	158	187	223
0-5	{ Males -	2,411	100	124	164	210	212	244	284	349
	{ Females	2,931	100	128	170	224	223	260	310	394
5-10	{ Males -	17,825	100	109	141	187	168	196	250	294
	{ Females	18,416	100	111	139	163	164	183	212	279
25-35	{ Males -	12,063	100	106	118	131	117	159	177	241
	{ Females	11,919	100	111	123	105	123	123	156	208
35-45	{ Males -	10,030	100	103	123	172	137	181	233	302
	{ Females	10,081	100	105	119	129	127	142	194	243
45-55	{ Males -	7,386	100	104	127	190	152	199	255	323
	{ Females	8,432	100	104	119	156	139	167	242	312
55-65	{ Males -	4,211	100	106	130	185	161	186	253	299
	{ Females	4,662	100	103	120	156	146	167	235	269
65-75	{ Males -	1,834	100	103	122	162	144	163	199	219
	{ Females	1,975	100	101	114	133	132	140	186	189

Out of 2411 Male Children living under 5 years of age 100 die annually in the Healthy Districts, 284 in the Manchester District, and 349 in the District of Liverpool.

(Supplement to 35th Annual Report, p. clxii.)

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Mortality of Children (0-5), 1861-70.—The first thing to observe is, that the fatality children encounter is primarily due to the changes in themselves. Thus 1,000,000 children just born are alive, but some of them have been born prematurely; they are feeble; they are unfinished; the molecules and fibres of brain, muscle, bone are loosely strung together; the heart and the blood, on which life depends, have undergone a complete revolution; the lungs are only just called into play. The baby is helpless; for his food and all his wants he depends on others. It is not surprising then that a certain number of infants should die; but in England the actual deaths in the first year of age are 149,493, including premature births, deaths by debility and atrophy; diseases of the nervous system 30,637, and of the respiratory organs 21,995. To convulsions, diarrhoea, pneumonia, bronchitis, their deaths are chiefly ascribed; little is positively known; and this implies little more than that the brain and spinal marrow, nerves, muscles, lungs, and bowels fail to execute their functions with the exact rhythm of life. The first two are said by pathologists to be often rather symptoms of diseases unknown than diseases in themselves. The total dying by miasmatic diseases is 31,266; but it is quite possible that several of the children dying of convulsions die in the early stages of some unrevealed zymotic disease, whose symptoms have not had time for development. Convulsion is a frequent precursor in children of measles, whooping-cough, scarlet-fever, fever: indeed, Dr. C. B. Radcliffe well remarks “in the fevers of infancy and early childhood, especially in the “exanthematous forms of these disorders, convulsions not unfrequently “takes the place occupied by rigor in the fevers of youth and riper “years.”* Many of the cases of pneumonia may also in like manner be whooping-coughs and other latent zymotic diseases. In the second year of life pneumonia, bronchitis, and convulsions are still the prevalent, and most fatal diseases; many also die then of measles, whooping-cough, scarlatina, and diarrhoea. Scarlet fever asserts its supremacy in the second, third, fourth, and fifth years of age. Whooping-cough is at its maximum in the first year, measles in the second, scarlatina in the third and fourth years. Thus these diseases take up their attacks on life in succession and follow it onwards.

The deaths from all causes under the age of five years are 263,182. The number ascribed to infanticide is very few; but the deaths by suffocation (overlying) &c., are more numerous; and so are the deaths directly referred to the “want of breast-milk.” The total deaths by burns, injuries, drowning, and all other kinds of violence, are 5,175.

By a physiological law 511,745 boys are born in England to 488,255 girls; and by another law 141,387 boys and 121,795 girls die in the first five years of life; so that at the end of five years the original disparity in the numbers of the two sexes is so much reduced that at the age of five years the boys only slightly exceed the girls in number. The greater mortality of boys is due to difference of organisation, for the external conditions are substantially the same in which boys and girls are placed.

Great as is the influence of organization itself, the difference of external circumstances and sanitary condition exercise a very real influence on life, disease, and death in childhood.

Thus, even in the healthy districts of the country, out of 1,000,000 born, 175,410 children die in the first five years of life; but in Liverpool District, which serves to represent the most unfavourable sanitary conditions, out of the same number born, 460,370, nearly half the number born, die in the five years following their birth. This is 284,960 in excess of the deaths in the healthy districts.

* A system of Medicine by Reynolds, vol. 2, p. 593. Article on Diseases of Spinal Cord.

Of 1,000,000 CHILDREN BORN ALIVE in the HEALTHY DISTRICTS in ALL ENGLAND, and in the DISTRICT of LIVERPOOL, the NUMBERS dying under Five Years of Age from NINETEEN GROUPS of CAUSES.

	HEALTHY DISTRICTS.	ENGLAND.	LIVERPOOL DISTRICT.
DEATHS FROM ALL CAUSES - - -	175,410	263,182	460,370
TOTAL ZYMOTIC DISEASES - - -	49,761	87,099	171,009
Small-pox - - - - -	602	3,331	5,175
Measles - - - - -	5,257	11,507	25,514
Scarlatina - - - - -	11,373	17,959	26,818
Diphtheria - - - - -	4,184	2,425	3,395
Whooping-cough - - - - -	9,650	14,424	32,551
Fever (Typhus, Enteric, and Simple) - - - - -	2,807	5,401	9,297
Diarrhœa and Dysentery - - - - -	9,354	20,344	51,911
Cholera - - - - -	399	1,129	4,255
Other Zymotic Diseases - - - - -	6,135	10,579	12,093
Cancer - - - - -	110	71	62
Scrofula and Tabes Mesenterica - - - - -	5,335	8,115	11,694
Phthisis - - - - -	2,656	4,469	5,116
Hydrocephalus - - - - -	6,604	9,296	14,972
Diseases of the Brain - - - - -	22,692	40,065	49,840
Diseases of the Heart, and Dropsy - - - - -	1,304	1,507	2,038
Diseases of the Lungs - - - - -	27,884	41,476	79,893
Diseases of the Stomach and Liver - - - - -	4,431	4,778	4,874
Violent Deaths - - - - -	4,232	5,175	17,107
OTHER CAUSES - - - - -	50,401	61,131	103,765

The above Table shows how many children die from the several groups of causes (1) in the healthy districts, (2) in all England, and (3) in the Liverpool District. There is a greater increase in Liverpool from small-pox and measles than from scarlet-fever; and diphtheria was more fatal in the healthy districts than in all England. Diarrhœa and cholera were greatly aggravated in the other districts of England; so were whooping-cough, and fever, under which were registered typhus, typhoid, infantile remittent, and relapsing fever. The diseases of the lungs are more fatal to children in Liverpool than diseases of the brain.

The children of Norway fare better than the children of sunny Italy; to which it may well be still an *officina gentium*. Out of 100 children born alive the deaths in the first five years of life are in Norway 17, Denmark 20, Sweden 20, England 26, Belgium 27, France 29, Prussia 32, Holland 33, Austria 36, Spain 36, Russia 38, Italy 39. Russia is almost as fatal to her children as Italy.

In a paper* read before the Statistical Society the methods of determining the rates of mortality were described, and I collected information as to the treatment and management of children in Scotland, Norway, Sweden, France, and Austria. The subject was taken up in England by the Obstetrical Society, who published an able report based on returns, on the birth and treatment of English children.† I have not yet received papers from Russia or Italy.

The mortality of infants evidently depends, to some extent, on the midwifery of a country; on the way the children are fed by the mothers; on the water; and on the cleanliness observed, as well as the other sanitary conditions.—(Supplement to 35th Annual Report, pp. xxviii–xxx.)

* Mortality of Children in the Principal States of Europe, in the Journal of Statistical Society, vol. xxix., pp. 1–35.

† Republished in the Appendix to the Registrar General's 34th Report, pp. 225–9.

LETTER

TO

The REGISTRAR-GENERAL on the MORTALITY in the REGISTRATION DISTRICTS of ENGLAND during the YEARS 1861-70; by WILLIAM FARR, Esq., M.D., F.R.S., D.C.L.

*General Register Office, Somerset House,
5th February 1875.*

SIR,

How the people of England live is one of the most important questions that can be considered; and how—of what causes, and at what ages—they die is scarcely of less account; for it is the complement of the primary question teaching men how to live a longer, healthier, and happier life. Armed with this golden bough, we may enter the gloomy kingdom of the dead, whither have gone in twenty years nine thousand thousand English children, fathers, mothers, sisters, brothers, daughters, sons:

Matres atque viri, defunctaque corpora vita
Magnanimum heroum, pueri innupteque puellæ
Impositique rogis juvenes ante ora parentum :*

each having left memories not easily forgotten; and many having biographies full of complicated incidents. Here, fortunately for this inquiry, they appear divested of all colour, form, character, passion, and the infinite individualities of life: by abstraction they are reduced to mere units undergoing changes as purely physical as the setting stars of astronomy or the decomposing atoms of chemistry; and as in those sciences so in this, the analysis of the elementary facts observed in their various relations to time and place will shed new light on the more complicated phenomena of national life.

The vital units to be specially dealt with are persons living and persons dying in the ten years 1861-70, only distinguishing them into units representing males and females of different ages and occupations, losing life year after year by various causes, in about 627 districts extending from the borders of Scotland to the English Channel and from the Irish Sea to the German Ocean. The deaths in the several classes have to be compared with the population enumerated at three decennial censuses, in corresponding groups.

The long series of Tables offers a retrospect extending over the ten years, and is in continuation of a series embracing the previous ten years, with which it is compared.

The primary object is to determine what the death-toll† is at the several ages, and what the causes of the loss of life are, under different circumstances. The importance of this determination will become ap-

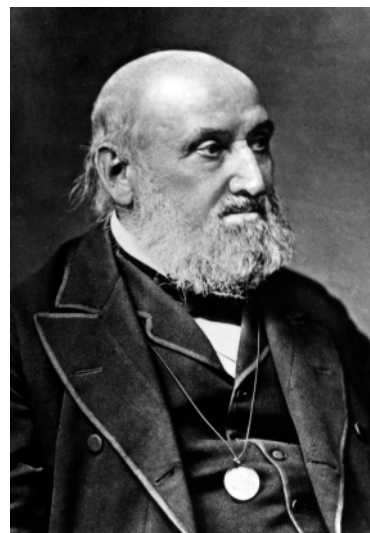
* Mothers and men, and bodies there with all the life outworn
Of great-souled heroes; many a boy and never-wedded maid,
And youths before their fathers' eyes upon the death-bale laid:

— Morris.

† This compound of Saxon words appears to be preferable to "death-rate" or "death-tax;" it is equivalent to "rate of mortality."

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William Farr, 1807-1883

From: *Supplement to the 35th annual report of the Registrar-General on births, deaths and marriages in England.* London, George E. Eyre and William Spottiswoode, HMSO, 1875.

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