

and while they were thus attached to their dwelling, they formed a more intimate society with one another in the small domestic circle than is common in spacious barracks. They were delighted to dwell in huts, evidently so much delighted that had they been ordered to remove from them to the most magnificent and best equipped barrack in the command, they could not have concealed their chagrin. The soldier is at home in a hut ; he is like a shepherd's dog in a royal kennel in a palace-like barrack. The huts on Bouillè height were placed on the lee, under the summit of the ridge. As such, they were screened from the direct impulse of exhalation from the Lamentin swamps. The occupants, though they had their tours of duty at Fort Edward and other exposed places about Port Royal, were not, upon the whole, unhealthy. When the regiment embarked for Canada, it left only one sick man in hospital.

I might give instances, on a large scale, that this which is attested by a physician of sanitary prescience is, *mutatis mutandis*, under proper command, applicable to the healthful military occupation, and through such healthful military occupation, the means of the healthful civil occupation and settlement in India. If the rudimentary sanitary principles laid down by Sir John Pringle, in his statement of his medical experience during the campaign in Flanders, in the middle of the last century, had been duly considered, the insanitary disaster of Walcheren would have been avoided—if the lesson given by the disaster at Walcheren had been properly attended to, two-thirds of the losses incurred during the Peninsular campaigns might have been prevented ; if the experience of the Peninsular campaigns had been properly consulted, of which due warning was given, the disaster of the first year of the Crimean campaign would have been saved. But in the Crimean campaign, in addition to the warning from disaster, there has been given the lesson of the great sanitary success in prevention. It is for the public, acting through their representatives, now to determine, whether that lesson shall be lost for our army in India and for our Indian Empire.

Influence of Marriage on the Mortality of the French People.

By WILLIAM FARR, M.D., F.R.S.

THE changes which age induces in the vital forces have been calculated. The differences in the mortality of the two sexes are known. Men have investigated the effects on life of air, water, hills, plains, and marshes—of the sun in various seasons and climates—of food, animal and vegetable—and of alcoholic drinks. The fatality of foul exhalations of every kind has been made manifest.

But the life of man is affected by still more subtle agencies. The action of the various parts of the body in industrial occupations produces specific effects. Every science modifies its cultivators. The play of the passions transfigures the human frame. How do they influence its existence ?

These are some of the higher fields of speculation which have not yet been explored by sanitary research. I have now, however, to submit to the department the results of an inquiry into intermediate phenomena.

The family is the social unit; and it is founded in its perfect state by marriage. The influence of this form of existence is therefore one of the fundamental problems of social science.

A remarkable series of observations, extending over the whole of France, enables us to determine for the first time the effect of conjugal condition on the life of a large population.

The French people may be classed in three great groups, exclusive of minors under age:

I. The married, consisting of two groups: (a) Husbands, 6,986,223; and (b) wives, 6,948,828, making a total of 13,935,051.*

II. The celibate, who have never married—namely, (a) Bachelors, 4,031,582; and (b) spinsters, 4,547,952, making a total of 8,579,534.

III. The widowed, in two groups: (a) Widowers, 836,509; and (b) widows, 1,687,583; making a total of 2,524,092.

Deparcieux, in the middle of the last century, investigated the relative mortality of monks and nuns in France; and he compared their life with that of Tontine annuitants, consisting partly of married and partly of unmarried persons. From the age of twenty to forty the mortality of the monks and nuns living in 'single blessedness' was lower, and after the age of forty it was higher than the mortality of the annuitants. The excess of mortality was considerable in the monks. The condition of these members of religious houses is at all times peculiar, and besides their vows of chastity involved a peculiar discipline likely to affect their lives. Many of them lived in Paris. We can now deal with the whole population of France, amounting, in 1851, to thirty-six millions of people, some dwelling against our southern coast, in Flanders, Picardy, and Normandy; some in Brittany, around the rugged shores of the Atlantic; some in Orleans, Tours, and Nantes, beside the 'murmuring Loire'; some on the Garonne, wandering from Toulouse to Bordeaux, through that old Guienne, famous in our history; some climbing up the Pyrenees, or seated in Languedoc or in Marseilles, on the Mediterranean Sea; some on the rapid Rhone, in Provence, the seat of the old Courts of Love—in Lyons and in Avignon; some extending from the Alps and the mountains of Auvergne and the Vosges, over Dauphiny, Burgundy, Lorraine, and Champagne; and some living in Paris, Rouen, Havre, and the region around the Seine. This country, covered by its millions of small proprietors living on the parcels into which the soil was divided by the great Revolution—by cultivators of the vine and the olive in the South, of the apple and the cereal crops in the North—by pastoral families on the Landes and on the Mountains—by artisans and manufacturers in a few large cities, con-

* The French census includes many foreign husbands who have left their wives at home. The wives in Great Britain exceeded the husbands by 70,253 in 1851.

tained in the year 1851 nearly fourteen million married people of both sexes. What was their rate of mortality? Under the French law, young men of the age of eighteen, and young women of the age of fifteen, can legally marry. Of the few young married pairs living, the mortality in both husbands and wives was excessively high under the age of twenty. Twice as many wives under twenty died in the year as died out of the same numbers of the unmarried; and the mortality was much higher than it was among husbands and wives in the subsequent decennial of life. The result confirms the common opinion of the evil consequences of marriage in many cases under the age of twenty, before the growth of the individual man or woman is completed.

The wives of the next twenty years of age experience a rate of mortality half as high again as the husbands of those ages suffer.

The mortality of the husbands is exceedingly low, 6.5 and 7.1, while wives of twenty to thirty die at the rate of 9.3 in 1000, in rather higher proportions than the wives of the subsequent age, thirty to forty, when the mortality is 9.1. This excess is fairly ascribable to the sorrows of childbearing, and to no small extent to ignorant midwives.

At the age forty to fifty, the mortality of the husbands (10.3) is slightly higher than the mortality of wives; and so it remains higher ever afterwards, but the difference is not considerable.

Age.	Husbands.	Wives.
50—60	18.3	16.3
60—70	35.4	35.4
70—80	88.6	84.9
80—90	183.6	180.4

Thus, to 1000 husbands living at the age sixty to seventy, there are 35.4 deaths; to 1000 wives, 35.4 deaths. And so the old people go on in the table tottering down the hill till they 'sleep together at the foot.'

How fares it with the unmarried—the celibate?

At the younger ages under twenty, the mortality is, as I have already stated, much lower in the two sexes than it is in the married.

Age.	Males.	Females.
Unmarried. 15—20	6.7	7.7 in 1000 die.

At all the ages from 20 to 60 unmarried men experience a much higher rate of mortality than unmarried women. The excess of the mortality of males at the age of 20—30 was in the ratio of 11.3 to 8.7. It was aggravated by the deaths of the soldiers dying in Algeria, and in the Casernes at home; but in the subsequent periods this element does not interfere to any extent.

Annual deaths to 1000 living:—

Ages of the Unmarried.	Males.	Females.
30—40	12.4	10.3
40—50	17.7	13.8
50—60	29.5	23.5

At the age 60 and upwards, the unmarried of both sexes are nearly equally mortal.

But how is it as between the married and the unmarried women?

Why at 20—25 the maidens have the advantage, and the difference is not inconsiderable.

Of 1000 Females.	Married.	Unmarried.
Annual Deaths	9.8	8.5

At the age 25—30 the mortality of the unmarried is slightly in excess (9.2 to 9.0). At the next age (30—40) the wives are the halest; the mortality of the wives being 9.1, and of the unmarried women 10.3. At the age of 40 the married women experience a much lower rate of mortality than the unmarried:—

	Married.	Unmarried.
40—50	10.0	13.8
50—60	16.3	23.5
60—70	35.4	49.8

and so it runs through all ages.

The contrast between the health of the bachelors and of the married men is still more striking; the young bachelors enjoying an advantage, the old ones suffering in the comparison.

Mortality per 1000 among *married men and bachelors*:—

	Married.	Unmarried.
15—20	*29.3	6.7
20—30	6.5	11.3
30—40	7.1	12.4
40—50	10.3	17.7
50—60	18.3	29.5
60—70	35.4	49.9

And after the ages of 80, the mortality of the two classes becomes nearly equal.

If unmarried people suffer from disease in undue proportion, the have-been-married suffer still more. At the ages under 40 the mortality of widows is higher than the mortality of unmarried women. At the earlier ages the mortality is doubled. At 40 and upwards their mortality is lower than the mortality of unmarried women of corresponding ages. At all ages widows are more mortal than wives.

Young widowers under the age of 30, and even under the age of 40, experience a very heavy rate of mortality; and after 60 the widowers die more rapidly, not only than husbands, but more rapidly than old bachelors.

This is the general result:—Marriage is a healthy estate. The single individual is more likely to be wrecked on his voyage than the lives joined together in matrimony.

In what respect do the married among the masses of the people differ from the unmarried classes?

Where the earnings of the two classes at the same ages are equal

* This is accidentally an exaggeration; the facts are insufficient.

the married man must have a smaller share of the means of living than the single man, for he shares his gains with his wife and children. His food and clothing may be of a lower description, or his lodging be more crowded; but this is often counteracted by his stimulated industry. The single man can move about more freely, and can carry his industry to the best market. Upon the other hand, his household comforts are less; the watchful care of a woman does not direct the economy of his dwelling; the very amplitude of his means exposes him to the temptations of intemperance and vice. His faculties fall, and sometimes rise, into excesses of various kinds.

The priests and the soldiers represent the unmarried classes. Men of letters, men prosecuting the abstract sciences, men of family and small means, probably figure in large proportion amongst their highest ranks: criminals, lunatics, vagrants, and mendicants among the inferior orders. If they contain some of the lowest, they contain also some of the highest members of their race, ascending from the idiot up to Newton.

The saying of the great Chancellor Bacon has in it a colouring of truth:—‘Certainly the best works, and of greatest merit for the public, have proceeded from the unmarried or childless men, who both in affection and means have married and endowed the public.’

The wife shares the fortune of the husband; he is exposed to violence, she to the incidents of childbearing.

Nuns, religious sisters, many ladies of birth, are at the head; grisettes, courtesans, at the bottom of the unmarried troops—which figure also in larger proportion than the married among the female criminals, lunatics, idiots, deaf and dumb, blind and deformed. They include some of the loftiest and some of the lowest of their sex.

Is any part of the excessive mortality of the single in France referable to vice?

Yes; to vice and its attendant irregularities. Levy asserts that the colleges of France are infested by vices which induce debility, and death later in life. The French youth do not yet engage in strong athletic exercises, which it is well known are the safeguards of our public schools. Syphilis—the odium of the human race—induces half the sickness, and, indirectly, some of the mortality of the army, which in this respect fairly represents the unmarried population.*

Courtesans die of their various irregularities, but this class of causes operates chiefly in early life.

It is known to everybody that all the species of cultivated plants, and all the breeds of domestic animals, have been greatly improved in Europe. The improvement is partly due to the favourable conditions in which each kind has been placed. It is mainly due, however, to the constant elimination of imperfect types, and to the skilful selection of the finest individuals out of each successive generation. Now the same principle evidently regulates to a certain extent the

* See Acton's works.

marriages in France. Cretins do not marry; idiots do not marry; idle vagrants herd together, but rarely marry. Criminals by birth and education do not marry to any great extent; formerly they were executed in great numbers, or they perished in the prisons, and now the galleys interrupt their career.*

The children of families which have been afflicted with lunacy are not probably sought in marriage to so great an extent as others; and several hereditary diseases present practically some bar to matrimony. The beautiful, the good, and the healthy are mutually attractive; and their unions are promoted by the parents in France, who are usually on very friendly terms with their children, and often decide the choice of their daughters too absolutely and with too little reference to the affections. The Chancellor of the Exchequer, in one of his most delightful romances, tells us that falling in love at first sight is the only genuine way in which people do fall in love. But this is not opposed to the theory of selection; for it happens, as we see in the most authentic stories, that the lovers at first sight are invariably full of irresistible charms.

Selection then—not such as the Insurance offices exercise—but a certain selection, does reduce, to some extent, the mortality of the married.

And, upon the other hand, we shall be justified by our medical friends in admitting that a certain number of young women, and young men also, die directly or indirectly of disappointed affection—die of love, in fact. Some destroy themselves; others pine away most piteously; and others register secret vows in heaven never to marry.

Finally, it is held generally that the suppression of a physiological function is prejudicial to health, which our tables confirm, and at the same time qualify. Chastity in itself does not, as in the case of Deparcieux's nuns, raise the mortality of women under forty; and notwithstanding the consequences of vice in the vicious, the selection operating against the unmarried, and the pangs of disappointed love, the mortality of unmarried women in all France is lower than the mortality of married women. After that age the health of the nuns gave way to some extent; but this was, perhaps, as Deparcieux asserts, the consequence in that period of various kinds of austerities, an absence of personal cleanliness, and the want of little comforts which were found in the dwellings of simple artisans who knew how to keep their houses in order. The effects of religious chastity in France have been recently discussed by Dr. Mayer, who with some Catholic authorities contends that it has in itself no prejudicial effect; but this is not the prevalent opinion. Levy professes the contrary doctrine. I cannot discuss this medical controversy here. But the poets, where the affections are concerned, possess an insight almost

* Of 100 French criminals, 60 are unmarried. Two in three suicides are unmarried. Of 1726 women insane, 989 were spinsters, 291 widows, and 397 wives. (Levy, vol. ii. p. 74.)

divine ; which is as true in its indications as analytic science. Virginity in the poetical creed was ever proof against danger ; the lion would not harm the 'heavenly Una.'

So dear to heaven is saintly chastity,
That when a soul is found sincerely so,
A thousand angels lackey her,
Driving far off each thing of sin and guilt.

The body partakes of the soul's 'immortal essence ;' but no sooner is 'defilement' let into the temple than the life grows 'clotted with contagion.' The reading of the allegory is evident. The poets, however, see all sides of character, and Shakspeare's *Parolles*, a 'great way fool' as he is, says all the evil that physiology has yet suspected in this estate. Lallemand describes vividly the sufferings of the French priests from celibacy—exposed to the fiery ordeal of the confessional. Vows of celibacy on the part of large bodies of young men and of young women are always dangerous ; but the question of marriage or of celibacy is a question of temperament and of circumstances—so it is very properly left in England to individuals of full age to decide their lot on their own responsibility, under friendly, or if they please, professional advice. In France there is always a large number of unmarried women of a marriageable age. Thus, in the last returns, 2,231,535 women figure as spinsters, of the age of twenty to forty ; the wives of that age numbering 3,200,561.

Is this the result of religious vows, or of the Catholic doctrine of celibacy?—Not to any great extent. In Great Britain the proportions are not very different. Ultimately nine in ten who live marry. The notion that the number of women shut up in convents, had any direct effect in diminishing population was incorrect. In every society large numbers will not, and large numbers should not, marry. They have wide fields of life before them, and public works, devotion, noble foundations, 'friendly love,' will enable them to achieve those triumphs which Bacon has taught us to expect at their hands.

Why is the mortality of young widows and widowers so excessive ?

1. They share the pains of the unmarried and they have their own griefs.
2. The pairs, of which one dies prematurely, must in the aggregate be in more unfavourable sanitary circumstances than the rest of the population.
3. The one may take from the other fever, and, in crowded chambers, catarrh, ending in consumption, as the army returns show.
4. The widow with children, especially in France, where there is no poor law, suffers from privation ; the widower from a disorderly house. The loss of a beloved wife is the heaviest affliction which a man can sustain. It unsettles many minds. Jacques Bonhomme is left desolate ; his wife no longer cheers his home, nurses him in sickness, shares his cares, consoles him, counsels him, loves him. The voice which followed Jacques to the cabaret, and reminded him of the hostages which he had given to fortune, is silent. He plunges into intemperance ; vice and disorder

follow ; his plot of land is torn from his grasp by the mortgagee ; his body finds its way to the cemetery ; his soul, we may hope, soars to his companion in heaven. For Jacques Bonhomme was solely destroyed by her untimely death.

Children supply in some respects the loss of the dead ; and where the surviving are childless they have the resources of their unmarried life to retreat on. But re-marriage is the popular consolation ; young widows in health marry at a faster rate than maids, and widowers marry three or fourfold as fast as bachelors. The weakly and sickly are left by this second selection, and swell the apparent mortality of the class. All these disruptions of wedlock, however, leave 'rooted sorrows,' and the day is to be desired when 'Conjux Univira,' or its equivalent, may be inscribed on nearly all tombs.

It is satisfactory to find that by a wise ordinance of Heaven, the fathers and mothers of a nation—those who transmit its life from generation to generation—live long. They sustain their children and live with their grandchildren. Families are thus not detached fragments. The traditions, the works, the thoughts of the nation go on continually ; and the common life flows like a mighty river. The immortality of the race on earth is secured by marriage ; and mortals in giving seem to receive life from the fountain of life. If 'nuptial love maketh,' it also preserveth mankind.

At all ages after twenty-five, married men enjoy an immunity from illnesses, or their diseases are less fatal than the diseases of the unmarried men of corresponding ages. And wives of the age of forty—after they have nursed children—enjoy a degree of health which neither their selection, nor the vices nor the virtues of the unmarried can explain. Yet we seem to hear the wails of the young mothers dying every year in childbirth. Those sorrows also can be mitigated by science. Through the progress of medicine the deaths of mothers are every year decreasing, and as sanitary science is diffused, by associations like this, they will become uncommon, if none but healthy women marry, and if young persons under age, except in rare exceptional cases, will postpone their marriage at this price—that they are at liberty to prolong what the Vicar of Wakefield called the happiest hours of life.

I have now passed in review the six classes of the population of France, and have ventured to draw some deductions of general application. The French differ from us in some respects ; but the English and French nations consist essentially of the same three races—Celts ; Franks or Saxons ; and Normans—in different proportions, and modified by position and climate. The state of manners among the married is not, we may fairly hope, represented by the common French novels. The French people have among them many vicious, and still many more virtuous characters. The mass of the small agriculturists and of the artisans is moral, yet I trust that in some respects they are excelled by the people of England. I trust that poor widows are better provided for in England than in France, and that the unmarried popu-

lation in England suffers somewhat less than in France. The husbands and the wives differ in one essential respect from their French neighbours. 6,948,828 wives in France gave birth to 898,254 children annually; 4,329,322 wives in the United Kingdom gave birth to about 809,000 children annually in the years 1849-53; and in the year 1856 the English births probably surpassed the French in numbers. They are our rivals—not our unworthy rivals—in arts, in manufactures, in arms, and in diplomacy. In the increase of population as well as of the power which it represents, and in planting colonies—future nations—France has been surpassed by England. This the country owes to the numerous children of English parents, who are added to the population, without injury to the health of the father or even of the mother. English mothers are, I believe, as healthy as French mothers; and therefore what we have proved holds in France holds also in England. But it is desirable that the question should be independently investigated in the United Kingdom.

TABLE I. FRANCE.—*Rate of Mortality per Cent. in 1853.*

Ages.	Males.			Females.		
	Unmarried.	Married.	Widowers.	Unmarried.	Married.	Widows.
All Ages.	2.093	1.756	7.249	2.024	1.534	5.804
15—	.668	2.934	18.688	.772	1.364	10.673
20—	1.128	.654	2.877	.874	.930	2.310
30—	1.236	.714	1.849	1.030	.911	1.365
40—	1.774	1.026	2.005	1.381	.999	1.366
50—	2.945	1.830	2.952	2.347	1.627	2.169
60—	4.986	3.544	5.414	4.977	3.540	4.670
70—	10.974	8.859	12.871	11.337	8.490	10.717
80—	21.072	18.363	24.799	24.143	18.044	22.850
90—	28.096	26.016	41.344	29.580	18.778	36.273
100—	76.767	98.674	48.605	45.847	70.505	42.856

The Table may be read thus:—In 1853 to every 100 *Unmarried* men living in France of the age 20-30 there were 1.128 deaths of *Unmarried* men, or 11 in 1000; to every 100 *Married* men at the same age .654 deaths of *Married* men, or nearly 7 in 1000; and to every 100 *Widowers*, 2.877 deaths of *Widowers*, or 29 in 1000.

A correction has been made for increase of population, on the assumption that the increase has been uniform at every age, and that the same rate of increase has taken place since 1851 as was observed between 1846 and 1851. A correction has also been made both in Population and Deaths for ages not stated.

The Tables II. and III. are condensed from M. Legoyt's Official Tables. To him I am indebted for the facts.

TABLE II.—FRANCE. Population in 1851 (vide 'Statistique de la France,' deuxième série, tome II., pp. 200-1).

Age.	Males.			Females.			Total.	
	Unmarried.	Married.	Widowers.	Unmarried.	Married.	Widows.	Males.	Females.
All Ages	9,972,232	6,986,223	856,509	9,351,795	6,948,828	1,687,583	17,704,964	17,088,206
0—	3,359,276	—	—	3,257,704	—	—	3,359,276	3,257,704
10—	3,193,271	2,859	153	3,045,597	52,185	573	3,198,283	3,098,355
20—	2,136,450	737,929	14,498	1,639,525	1,284,251	31,732	2,888,877	2,955,508
30—	694,507	1,893,356	59,132	592,010	1,916,310	119,557	2,646,995	2,027,877
40—	296,050	1,831,982	110,497	342,754	1,646,174	229,414	2,238,529	2,218,322
50—	103,024	1,432,170	182,496	243,082	1,233,019	383,115	1,777,090	1,859,216
60—	79,571	759,189	221,932	150,064	622,657	474,422	1,060,692	1,247,163
70—	33,891	282,874	187,826	62,947	170,042	339,897	504,591	572,886
80—	6,820	36,459	54,103	13,031	17,899	98,533	97,382	129,463
90—	678	1,793	4,214	1,115	985	7,663	6,595	9,761
100—	18	13	71	28	7	145	102	180
Not Stated	8,676	7,689	1,587	3,878	5,301	2,512	17,952	11,691
15—	973,866	48	1	933,168	8,393	55	973,915	941,616
18—	617,065	2,811	152	568,342	43,792	518	620,028	612,652
20—	1,299,980	151,217	2,805	1,028,979	455,636	8,240	1,484,062	1,522,855
25—	836,470	586,712	11,633	828,615	828,615	23,492	1,434,815	1,432,653
30 and upwards	1,274,559	6,237,746	820,271	1,405,031	5,607,091	1,652,766	8,332,576	8,664,888

TABLE III.—FRANCE. Deaths in 1853 (vide 'Statistique de la France,' deuxième série, tome III., 1^{re} partie, pp. 31-39.)

Ages.	Males.			Females.			Total.	
	Unmarried.	Married.	Widowers.	Unmarried.	Married.	Widows.	Males.	Females.
All Ages	211,334	124,195	61,388	191,609	107,918	99,163	396,917	398,690
0—	139,395	—	—	120,422	—	—	139,395	120,422
10—	19,175	85	29	21,596	721	62	19,289	22,379
20—	24,419	4,892	423	14,509	12,101	743	29,734	27,353
30—	8,695	13,697	1,109	6,176	17,687	1,655	23,501	25,518
40—	5,321	19,049	2,247	4,793	16,664	3,176	26,617	24,633
50—	4,864	26,558	5,463	5,777	20,321	8,423	36,885	34,521
60—	4,020	27,268	12,186	7,503	22,332	22,465	43,474	52,360
70—	3,768	25,396	24,518	7,223	36,929	33,682	53,682	58,777
80—	1,456	6,785	13,608	3,186	3,272	22,826	21,849	29,284
90—	193	449	1,767	334	187	2,818	2,409	3,339
100—	14	13	35	13	5	63	62	81
Not Stated	14	3	3	17	3	3	20	23
15—18	5,873	—	—	7,113	221	25	5,873	7,359
18—20	4,897	85	29	4,631	500	37	5,011	5,168
20—25	15,152	1,246	167	9,110	4,544	248	16,565	13,902
25—30	9,267	3,646	256	5,399	7,557	495	13,169	13,451

By William Farr, M.D.