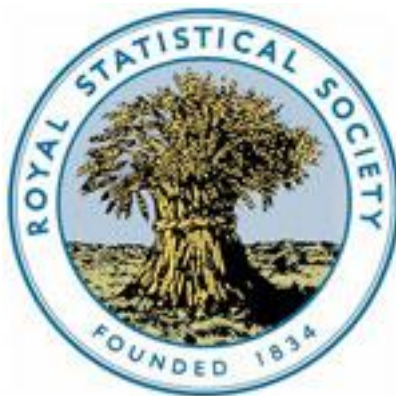


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Births, Deaths, and Marriages, and the Comparative Progress of Population in Some of the Principal Countries of Europe

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BIRTHS, DEATHS, and MARRIAGES, and the COMPARATIVE PROGRESS  
of POPULATION in some of the PRINCIPAL COUNTRIES of EUROPE.  
By FREDERICK MARTIN, ESQ., *Author of the "Statesman's Year  
"Book."*

[Read before the Statistical Society, 17th April, 1877.]

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It is one of the most singular facts in the history of civilised mankind that, up to a very recent date, no visible efforts whatever were made to ascertain either the number of births and deaths within a given period, or the actual number of persons living at a certain time, within the boundaries of a country, or of a political organisation, a State. Considering the extreme importance of the subject in all its bearings, it is really surprising that neither the highly-cultured Greeks, nor the practical Romans, world law-makers as much as world-conquerors, should have taken any measures to ascertain the number of individuals passing in and out of existence, within defined periods of time, and also to get at some facts respecting the number of persons forming the population of a town, a province, or a country. Perhaps it is less surprising that, after the extinction of Greek and Roman civilisation, and the gradual rise of West European culture, following upon the darkness of the Middle Ages, the new nations of Christianity should not have undertaken the task so long neglected. A misunderstood text of the Bible\* barred the road of progress in this direction, as much as it did in the study of astronomy, and the investigation of the planetary laws. And it was a long time after great Galileo came out of prison, muttering "E pur si muove," before any man came forward bold enough to state his conviction that it was not only not sinful, but a duty, to register births and deaths, and to make all possible endeavours correctly "to number" the people.

\* First Book of Chronicles, xxi, 1: "And Satan stood up against Israel and provoked David to number Israel." Also xxvii, 24, "Joab, the son of Zeruiah, began to number, but he finished not, because there fell wrath for it against Israel."

The honour of laying the foundation stone for the system of registration and enumeration, now in practice among nearly all the civilised nations of the world, belongs exclusively to Englishmen, and, more especially, to a native of London, Mr. John Graunt, "citizen and haberdasher." It is a real cause of wonder, looking back, with all our present knowledge, upon the remarks and conclusions of this inquiring haberdasher, "born and bred in Birchin Lane," and who seems never to have travelled out of reach of the sound of Bow Bells, how full they are of wisdom and of truth. With no other materials before him than the extremely defective London "Bills of Mortality," issued weekly by the guild of Parish Clerks, he arrived at results, laid down in his "Natural and Political Observations," as original as marvellous for their accuracy. "Seven out of every hundred live in England to the age of 70," he reasoned, among others, which was, probably, quite true for the time. The genial haberdasher of Birchin Lane had a worthy follower in Sir William Petty, founder of the noble house of Lansdowne. Although some of his speculations were rather fanciful, and modern statisticians, as well as men of science, would have good ground to quarrel with his calculations about the population of the earth, deduced from "Adam and Eve doubling themselves every sixty-four years," and, still more with his somewhat profane attempts to find out "the number of the dead who may rise at the last day"—which, he discovered, could lie in exactly "one-fifth part of the graves which the surface of Ireland will afford, without ever putting two bodies into any one grave"—still his conclusions regarding the number of people living at the time were very shrewd, as well as full of truth. They did not a little to draw the attention of learned and influential men to the necessity of establishing some system of registering births and deaths, more reliable than the old parish registers and "Bills of Mortality," from which facts might be obtained pointing to the laws regulating life. However, a long time had yet to elapse before anything practical was done in the matter, and it was not till 1753, eighty years after the death of John Graunt, and sixty-six after that of Sir William Petty, that a Bill was introduced into Parliament for taking a census of the population. It was not till nearly half a century later that the first census actually took place.

If England was the birthplace, in more than one sense, of the science of vital statistics, it has been no less, up to the present time, the seat of its greatest perfection, thanks to the services of a body of exceedingly able men, devoted heart and soul to their work. It is frankly admitted by the leading statisticians of Europe, chief among them the director of that model establishment, the Statistical Bureau of Berlin, Dr. Engel, that there is not a country in Europe

producing reports on vital statistics equal in breadth of view and true philosophical discernment, to those issued from the office of the Registrar-General in England. It is something for the Statistical Society of London to be proud of to have its dwelling in the shadow of that office, within the walls of Somerset House.

The attempt made in this paper to take a comprehensive survey of the great phenomena of life and death, as exhibited in the vital statistics of some of the principal countries of Europe, is based on the returns contained in the last issued "Annual Report of the Registrar-General," the thirty-seventh in number. In the chapter headed "Vital Statistics of European States," there are tabulated, after returns obtained from the various Governments, the rates of births, deaths, and marriages of eight foreign States, namely, Austria, Denmark, France, Italy, the Netherlands, Prussia, Spain, and Sweden, the "movement" of which—*mouvement de la population* as the French expressively call it—is compared with that of England. It was the original intention of the author of this paper, in preparing it for the Statistical Society, to make additions to the number of these States, so as to get the widest possible survey of European vital statistics; but the purpose only led to the discovery that its execution was at present impossible. An attempt to get returns of births, deaths, and marriages, if only approximately correct, of European Russia, proved a failure; and to enlarge the circle of smaller States seemed either unnecessary, or was beset with similar difficulties. The conclusion came to was that one might as well try to "gild refined gold, to paint the lily," as to attempt to improve the statistics of Somerset House.

The nine States, including England, of which the vital statistics are given in the "Annual Report of the Registrar-General," may be conveniently classed under three groups, in regard to size and political importance, as well as geographical position—the first embracing the three leading West European States, the second three of Southern, and the third three of Northern Europe. Thus the first group comprises England, France, and Prussia; the second group Austria, Italy, and Spain; and the third group Denmark, the Netherlands, and Sweden. The vital statistics of each of these groups of States are shown in the following series of tables, the first group giving the Births, the second the Deaths, and the third the Marriages.

### I.—Births.

The proportion of births per thousand of the population was as follows in the States of the first group during the twenty-two years from 1853 to 1874:—

Years.	England and Wales.	France.	Prussia.
1853.....	33·3	25·9	37·1
'54.....	34·1	25·7	36·3
'55.....	33·7	25·1	34·5
'56.....	34·5	26·4	34·7
'57.....	34·4	26·0	38·6
'58.....	33·7	26·8	39·4
'59.....	35·0	28·0	39·8
1860.....	34·4	26·2	38·6
'61.....	34·4	26·9	37·5
'62.....	35·6	26·5	37·0
'63.....	35·3	26·9	39·3
'64.....	35·4	26·6	39·4
'65.....	35·4	26·5	39·1
'66.....	35·2	26·1	39·2
'67.....	35·4	26·2	36·9
'68.....	35·8	25·7	36·8
'69.....	34·8	25·7	37·7
1870.....	35·2	25·5	38·1
'71.....	35·0	22·6	33·8
'72.....	35·8	26·8	39·7
'73.....	35·5	26·1	39·7
'74.....	36·2	26·2	40·1
Annual average.	34·9	26·1	37·8

A mere glance at this table will show two notable facts. The first is that the birth-rate of the population of Prussia was 2·9 per 1,000 higher, on the annual average of the twenty-two years, than that of England and Wales, and 11·7 per 1,000 higher than that of France; and the second is that during the same period the birth-rate both of England and of Prussia increased by no less than 3 per 1,000, while that of France remained nearly the same. It will also be seen that the great war of 1870-71 affected the birth-rate of France considerably less than that of Prussia; but, on the other hand, the subsequent recovery was far higher in Prussia than in France. In summary, the birth-rate of both England and Prussia—two States with a population of Teutonic origin, Protestant in religion—is high and continues rising; while that of France—Latin, and Roman Catholic—is low and remains stationary to a singular degree.

The vital statistics of the States of the second group, Austria, Italy, and Spain, are not as complete as those of the first. For Austria alone the Registrar-General is able to give, in his last "Annual Report," the full period of twenty-two years; while the official returns from Italy only go over twelve years, from 1863 to 1874; and those from Spain give but ten years, beginning with 1861 and stopping at 1870. The following table exhibits the pro-

portion of births per 1,000 of the population during these various periods :—

Years.	Austria.	Italy.	Spain.
1853.....	40·8	—	—
'54.....	38·4	—	—
'55.....	36·9	—	—
'56.....	39·6	—	—
'57.....	42·9	—	—
'58.....	42·2	—	—
'59.....	43·2	—	—
1860.....	40·6	—	—
'61.....	40·0	—	39·3
'62.....	40·3	—	38·3
'63.....	39·9	39·1	37·4
'64.....	40·4	37·8	38·5
'65.....	39·1	38·3	37·9
'66.....	44·2	38·7	37·3
'67.....	34·7	36·5	37·3
'68.....	39·3	35·3	34·4
'69.....	40·2	37·0	35·7
1870.....	40·5	36·7	35·4
'71.....	39·9	37·0	—
'72.....	39·9	37·8	—
'73.....	40·3	36·3	—
'74.....	40·1	34·9	—
Annual average.	39·9	37·1	37·2

All the States of the second group, it will be seen, have a very high birth-rate, the average of Austria surpassing considerably that of Prussia, highest in the first group. Both Italy and Spain surpass England in the proportion of births per 1,000 of the population. At the same time, while the birth-rate of Austria, like that of France, is stationary, that of Italy and of Spain is visibly decreasing, in each case at about the same proportion. In the twelve years from 1863 to 1874 the birth-rate of Italy fell 4·2 per 1,000, and in the ten years from 1861 to 1870 that of Spain 3·9 per 1,000. There is reason to believe that the birth-rate of Spain has continued falling since 1870; but no official returns exist on the subject.

In the States of the third group, Denmark, the Netherlands and Sweden, the proportion of births per 1,000 of the population was as follows in each of the twenty-two years from 1853 to 1874:—

Years.	Denmark.	Netherlands.	Sweden.
1853.....	31'9	33'0	31'4
'54.....	32'9	32'6	33'5
'55.....	32'1	32'0	31'8
'56.....	32'6	32'6	31'5
'57.....	33'2	34'6	34'4
'58.....	33'4	32'3	34'8
'59.....	33'8	34'9	35'0
1860.....	32'7	31'7	34'8
'61.....	31'8	35'2	32'6
'62.....	31'0	33'1	33'4
'63.....	31'1	36'1	33'6
'64.....	30'3	35'5	33'6
'65.....	31'4	35'9	32'8
'66.....	32'2	35'3	33'1
'67.....	30'5	35'2	30'8
'68.....	31'2	34'7	27'5
'69.....	29'5	34'5	28'2
1870.....	30'5	35'9	28'3
'71.....	30'2	35'3	30'4
'72.....	30'3	35'8	30'0
'73.....	30'7	36'0	30'8
'74.....	30'8	36'1	30'9
Annual average.	31'6	34'5	31'9

The three States of the third group have, as will be seen from the above table, a comparatively low birth-rate, the annual average of all of them being under that of England and Wales. It is noticeable that the birth-rate of the closely-packed population of the Netherlands, with 185 inhabitants per square mile, is much higher than that of Sweden, which has only 27 inhabitants per square mile.

The following table exhibits the comparative birth-rates per 1,000 of the population, of the whole of the nine States, arranged according to the *height* of the annual averages:—

States.	Average Annual Birth-Rate.	Highest Rate in any Year.	Lowest Rate in any Year.
Austria .....	39'9	44'2	34'7
Prussia .....	37'8	40'1	33'8
Spain .....	37'2	39'3	34'4
Italy .....	37'1	39'1	34'9
England and Wales ....	34'9	36'2	33'3
Netherlands .....	34'3	36'1	31'7
Sweden .....	31'9	35'0	27'5
Denmark .....	31'6	33'8	29'5
France .....	26'1	28'0	22'6

It is scarcely necessary to say that the preceding table does not show the actual position of each of the nine States so far as high

birth-rates denote an increase of population. In Austria, the first on the list, the rate is stationary, with a tendency to decline; while in Prussia, the second State, the rate is steadily and markedly progressive. Thus Prussia in reality holds the first rank. Spain and Italy again show unmistakable features of decline in the birth-rate; while the next following country, England, exhibits a progressive increase even surpassing that of Prussia. As regards the three Northern States, only one of them, the Netherlands, shows progress, the other two, Denmark and Sweden, exhibiting steadily declining rates. Thus the progressive movement is reduced to three countries, with population of kindred race, namely, England, Prussia, and the Netherlands. Contrasted with the figures shown by these States, the birth-rate of France, not only excessively low, but quite stationary, is a most singular phenomenon. The causes of the stagnancy, if not actual decline, of the population of France, are now occupying some of the most eminent men of that country, but their investigation lies not within the province of the statistician.

## II.—Deaths.

The proportion of deaths per 1,000 of the population was as follows, in the three States of the first group, England, France, and Prussia, during the twenty-two years from 1853 to 1874:—

Years.	England and Wales.	France.	Prussia.
1853.....	22'9	22'0	29'0
'54.....	23'5	27'7	27'6
'55.....	22'6	26'1	30'6
'56.....	20'5	23'2	26'2
'57.....	21'8	23'8	28'2
'58.....	23'1	24'1	27'6
'59.....	22'4	27'0	25'7
1860.....	21'2	21'4	23'7
'61.....	21'6	23'2	25'3
'62.....	21'4	21'7	24'5
'63.....	23'0	22'5	26'0
'64.....	23'7	22'8	26'0
'65.....	23'2	24'3	27'2
'66.....	23'4	23'3	34'1
'67.....	21'7	22'7	25'6
'68.....	21'9	24'0	27'3
'69.....	22'3	23'5	25'9
1870.....	22'9	28'3	25'9
'71.....	22'6	34'8	28'4
'72.....	21'3	22'0	29'3
'73.....	21'1	23'3	28'0
'74.....	22'3	21'6	25'8
Annual average.	22'2	24'2	27'1



It will be seen that the death-rate of England is much less subject to fluctuation than that of either France or Prussia, and that it is likewise considerably lower. At the same time, the death-rates of both France and Prussia show a more pronounced tendency to decrease, especially that of the latter State. A noticeable fact is that while the great war of 1870-71 is very strikingly marked in the French death-rate, which rose from 23·5 in 1869 to 34·8 in 1871, or no less than 11·3 per 1,000, the Prussian death-rate only rose from 25·9 in 1869 to 28·4 in 1871, or not more than 2·5 per 1,000, and was actually lower in 1871 than in 1872. It is evident that the Prussian loss of life is but insufficiently measured by the deaths on the battle field, but that the war had its enduring after-consequences—*Nachwehen*, says an appropriate German word.

The following table gives the death-rate per 1,000 of the population of the three States of the second group, Austria, Italy, and Spain, during the twenty-two years from 1853 to 1874 in the case of Austria, and for twelve and ten years respectively for Italy and Spain:—

Years.	Austria.	Italy.	Spain.
1853.....	35·0	—	—
'54.....	37·4	—	—
'55.....	46·0	—	—
'56.....	31·9	—	—
'57.....	29·6	—	—
'58.....	32·0	—	—
'59.....	30·7	—	—
1860.....	29·8	—	—
'61.....	31·4	—	26·3
'62.....	30·9	—	26·8
'63.....	31·1	30·8	28·5
'64.....	30·2	29·7	30·6
'65.....	31·0	29·8	32·8
'66.....	33·3	29·0	28·0
'67.....	28·1	34·2	29·1
'68.....	29·3	30·5	32·6
'69.....	28·9	27·7	32·6
1870.....	29·2	29·8	30·1
'71.....	30·0	30·0	—
'72.....	32·4	30·7	—
'73.....	38·5	30·0	—
'74.....	31·3	30·3	—
Annual average.	32·2	30·2	29·7

Compared with the death-rate of England, that of these three countries is very high indeed, being 8·0 per 1,000 more in Italy, and 10·0 per 1,000 more in Austria. As regards Austria, a strange feature is the extreme irregularity of the death-rate, which, sink-

ing in one year—and this, too, that following a great war—as low as 28·1, rose in another as high as 46. It ought to be remarked, however, that the whole of the vital statistics of Austria cannot be well compared for various periods, as the political organisation of the State led to repeated changes in the registration returns. Hungary, with its dependencies, was included in the returns from 1853 to 1862, but excluded subsequently; while up to the end of 1863 the returns embraced also the old Italian provinces.

In the three States of the third group, Denmark, the Netherlands, and Sweden, the death-rate per 1,000 of the population was as follows during the twenty-two years from 1853 to 1874:—

Years.	Denmark.	Netherlands.	Sweden.
1853.....	24·3	24·5	23·7
'54.....	18·5	23·9	19·8
'55.....	20·1	28·1	21·5
'56.....	18·9	23·4	21·8
'57.....	21·9	27·3	27·6
'58.....	23·3	27·8	21·7
'59.....	20·4	81·2	20·1
1860.....	20·2	24·7	17·6
'61.....	18·4	25·2	18·5
'62.....	18·4	23·7	21·4
'63.....	18·3	23·2	19·3
'64.....	23·3	25·1	20·2
'65.....	23·2	25·8	19·4
'66.....	20·9	28·7	20·0
'67.....	20·0	23·6	19·6
'68.....	19·3	24·8	21·0
'69.....	19·1	23·0	22·3
1870.....	19·1	25·7	19·8
'71.....	19·5	29·4	17·2
'72.....	18·3	25·7	16·3
'73.....	18·6	24·0	17·2
'74.....	19·9	22·6	20·3
Annual average.	20·2	25·5	20·3

The death-rate of these northern States is, it will be seen, much lower than that of the southern countries of Europe, and in the case of two, Denmark and Sweden, lower even than that of England. Though there were great variations from year to year, the general tendency in each of the three States during the period was towards a decline. It is stated in the official reports from both Denmark and Sweden, that the years of high death-rates were those of prevailing epidemics.

The comparative death-rates per 1,000 of the population of the whole of the nine States, are exhibited in the following table, in

which the States are ranged in the order of the *lowness* of the annual averages:—

States.	<i>Average Annual Death-Rate.</i>	Lowest Rate in any Year.	Highest Rate in any Year.
Denmark.....	20·2	18·3	24·3
Sweden .....	20·3	16·3	27·6
England and Wales ....	22·2	20·5	23·7
France.....	24·2	21·4	34·8
Netherlands .....	25·5	22·6	31·2
Prussia .....	27·1	23·7	34·0
Spain .....	29·7	26·3	32·8
Italy .....	30·2	27·7	34·2
Austria .....	32·2	28·1	46·0

It is a notable fact that the lowest death-rate in all the nine States shows less variations, not only than the highest, but less than the average annual rate. What is equally noticeable is that, notwithstanding wars and epidemics, the differences in the death-rates of all the States are considerably less than those of the birth-rates.

The following table exhibits both the average annual birth-rates and the average annual death-rates per 1,000 of the population of the nine States, with the surplus, if any, of the birth-rate over the death-rate. The States follow in the order of their average annual surplus, shown in the last column, representing the increase of population:—

States.	Average Annual Birth-Rate.	Average Annual Death-Rate.	<i>Surplus of Birth-Rate over Death-Rate.</i>
England and Wales ....	34·9	22·2	12·7
Sweden .....	31·9	20·3	11·6
Denmark.....	31·6	20·2	11·4
Prussia .....	37·8	27·1	10·7
Netherlands .....	34·5	25·5	9·0
Austria .....	39·9	32·2	7·7
Spain .....	37·2	29·7	7·5
Italy .....	37·1	30·2	6·9
France.....	26·1	24·2	1·9

It will be needless to dwell on the extreme significancy of the preceding table, the figures of which have an eloquence of their own. They proclaim very distinctly that there are five States, mainly with inhabitants of Teutonic blood, England, Sweden, Denmark, Prussia, and the Netherlands, the population of which is more or less rapidly increasing; that there are three other States, of either mixed or Latin race, the population of which grows at a moderate rate; and, finally, that in one State, France, the progress

of population is almost stagnant, the percentage of deaths differing not greatly from that of births. One is tempted to exclaim, in the famous words of Lamartine: "Malheureuse France—si riche et si pauvre."

### III.—*Marriages.*

Dividing the nine States into groups, the same as in respect of births and deaths, the following shows the proportion of marriages per 1,000 of the population in the three States of the first group, England, France, and Prussia, during the twenty-two years from 1853 to 1874 :—

Years.	England and Wales.	France.	Prussia.
1853.....	17·9	15·5	17·0
'54.....	17·2	15·1	15·6
'55.....	16·2	15·8	15·2
'56.....	16·7	15·8	16·3
'57.....	16·5	16·3	18·6
'58.....	16·0	16·9	18·9
'59.....	17·0	16·4	16·7
1860.....	17·1	15·8	16·8
'61.....	16·3	16·3	15·9
'62.....	16·1	16·2	16·8
'63.....	16·8	16·0	17·3
'64.....	17·3	15·9	17·2
'65.....	17·5	15·8	18·1
'66.....	17·5	15·8	15·5
'67.....	16·5	15·7	18·6
'68.....	16·1	15·7	17·6
'69.....	15·9	16·4	17·8
1870.....	16·1	12·0	14·7
'71.....	16·7	14·4	15·9
'72.....	17·5	19·5	20·6
'73.....	17·6	17·7	20·3
'74.....	17·1	16·5	19·4
Annual average .	16·8	16·0	17·3

The great steadiness of the English marriage-rate, compared with that of France and Prussia, is a notable feature of the above table. The fluctuations during the period were more considerable in the latter than in the former country; while, however, the great war affected the marriage-rate of France more than that of Germany, the French rate falling from 16·4 in 1869 to 12·0 in 1870, or 4·4 per 1,000, and the Prussian rate from 17·8 in 1869 to 14·7 in 1870, or only 3·1 per 1,000. It would seem that, on the whole, the tendency towards an increase is most pronounced in Prussia.

The following table shows the proportion of marriages per 1,000 of the population in the three States of the second group: in Austria during the twenty years from 1853 to 1874, in Italy during the twelve years from 1863 to 1874, and in Spain during the ten years from 1861 to 1870:—

Years.	Austria.	Italy.	Spain.
1853.....	16·8	—	—
'54.....	15·4	—	—
'55.....	14·6	—	—
'56.....	18·8	—	—
'57.....	17·6	—	—
'58.....	17·3	—	—
'59.....	14·8	—	—
1860.....	17·5	—	—
'61.....	17·1	—	16·5
'62.....	18·0	—	16·0
'63.....	17·3	16·3	15·3
'64.....	16·7	16·0	15·5
'65.....	16·0	18·0	15·7
'66.....	13·5	11·2	15·9
'67.....	17·8	13·4	14·2
'68.....	18·5	14·3	13·3
'69.....	20·7	15·9	16·2
1870.....	19·4	14·6	12·5
'71.....	19·0	14·9	—
'72.....	18·4	15·0	—
'73.....	18·5	15·8	—
'74.....	17·9	15·2	—
Annual average.	17·2	15·0	15·1

The very low rate of marriage in Italy and in Spain forms a singular contrast to the high rate of Austria. In both the former States the marriage-rate appears to be on the decrease, it being very marked in Spain, where the figure had fallen from 16·5 per 1,000 of the population in 1862, to 12·5 per 1,000 in 1870, being a decline of not less than 4 per 1,000 in six years.

In the States of the third group, Denmark, the Netherlands, and Sweden, the proportion of marriages per 1,000 of the population was as follows during the twenty-two years from 1853 to 1874:—

Years	Denmark.	Netherlands.	Sweden.
1853.....	18.5	15.5	14.4
'54.....	17.5	14.9	15.4
'55.....	17.1	14.5	15.0
'56.....	17.3	15.1	14.9
'57.....	18.0	15.8	15.5
'58.....	17.5	15.9	16.2
'59.....	16.9	16.3	16.6
1860.....	16.0	16.2	15.6
'61.....	14.9	16.1	14.5
'62.....	14.7	15.6	14.1
'63.....	15.0	16.5	14.5
'64.....	11.3	16.7	14.0
'65.....	17.8	16.9	14.1
'66.....	16.8	16.7	13.4
'67.....	15.3	16.7	12.2
'68.....	14.6	15.3	10.9
'69.....	14.7	15.5	11.3
1870.....	14.7	15.8	13.1
'71.....	14.6	15.9	13.0
'72.....	15.0	16.4	13.9
'73.....	16.2	17.0	14.6
'74.....	16.4	16.6	14.5
Annual average.	15.9	16.0	14.1

The same as the two southern States, Italy and Spain, the two northern States, Denmark and Sweden, show a steadily declining marriage-rate. In Sweden, it will be seen, the rate fell in one year, 1868, to 10.9 per 1,000 of the population, being probably the lowest found in recent years in any State of Christendom.

The following table exhibits the comparative proportion of marriages per 1,000 of the population in the whole of the nine States, ranked according to the *height* of the average annual marriage-rates:—

States.	<i>Average Annual Marriage-Rate.</i>	Highest Rate in any One Year.	Lowest Rate in any One Year.
Prussia .....	17.3	20.6	14.7
Austria .....	17.2	20.7	13.5
England and Wales ....	16.8	17.9	16.0
France.....	16.0	19.5	12.0
Netherlands .....	16.0	17.0	14.5
Denmark.....	15.9	18.5	11.3
Spain .....	15.1	16.5	12.5
Italy .....	15.0	18.0	11.2
Sweden .....	14.1	16.6	10.9

It will be seen that there are enormous fluctuations in nearly all the States between the highest marriage-rate and the lowest, the

principal exception being England, which points to this country having enjoyed a more uniform prosperity than the rest of the States of Europe comprised in the list.

A survey of the average rates of marriages and of births, and the differences in them per 1,000 of the population, in the whole of the nine States, is given in the subjoined table, in which the countries are ranked according to the figures of the last column, expressing the comparative fecundity of the marriages :—

States.	Average Annual Birth-Rate.	Average Annual Marriage-Rate.	Difference between the Birth and Marriage-Rates.
Austria .....	39·9	17·2	22·7
Spain .....	37·2	15·1	22·1
Italy .....	37·1	15·0	22·1
Prussia .....	37·8	17·3	20·5
Netherlands .....	34·5	16·0	18·5
England and Wales ....	34·9	16·8	18·1
Sweden .....	31·9	14·1	17·8
Denmark.....	31·6	15·9	15·7
France.....	26·1	16·0	10·1

It will be seen that while in eight out of the nine States there are two births and above to one marriage per 1,000 of the population, in the ninth, France, there are little more than three births to two marriages. With a proportion of marriages rather above the average of the nine States, France shows a want of fertility in them as striking as it is unique.

#### IV.—*Summary.*

As far as can be ascertained from the vital statistics of the nine States passed under review, and leaving out of view disturbing elements, such as emigration, the average increase of population is largest in England. While its birth-rate is not so high as that of some other States, its death-rate is among the lowest. It seems probable that at the end of the present century the population of England and Wales will have risen to 32 millions. Next in rank to England, in respect to increase of population, stand Sweden and Denmark, both with a moderate birth-rate, but an exceedingly low death-rate, that of Denmark being the lowest of any of the nine States. The population of Sweden may be expected to rise to not far from five millions and a half by the end of the century, and that of Denmark to two millions and a quarter. Next in order of increase stands Prussia. The leading German State has a very high birth-rate, but likewise a high death-rate, which latter, however, is steadily decreasing, while the former is even increasing. Taking these elements into consideration, the population of Prussia may be

expected to have risen to about 30 millions by the end of the century. It is known that the increase of population of the other German States, taking them as a whole, is not as large as that of Prussia; but it may be fairly calculated that the great empire of Central Europe will have about 50 millions in the year 1900. The Netherlands stand fifth in the list of States as to increase, with a birth-rate nearly equal to that of England, but a much higher death-rate, and the population may be calculated to have increased to five millions by the end of the century. These five States, England, Sweden, Denmark, Prussia, and the Netherlands—all, it will be noted, inhabited by Teutonic races—virtually comprise all out of the nine in which there is a tendency to marked increase of population. In three more, Austria, Spain, and Italy, the birth-rate is high, but the death-rate is still higher, with a tendency even to mount upwards, and the growth of population therefore will be comparatively slow. Still Austria and Italy may both be expected to add about a million and a half to their respective populations before the century has run out, and Spain nearly a million. The only country among the nine enumerated—and probably the only State of Europe—showing scarcely any increase of population whatever, is France. As exhibited in the figures of one of the tables, giving the average annual birth-rates and death-rates, these are not very far from equal. The returns for the twenty-two years from 1853 to 1874—a period including some years of disaster, but likewise many years of the highest material prosperity, such as the country scarcely ever before knew—give the average annual birth-rate at 26·1 per 1,000 of the population, while the average annual death-rate was 24·2 per 1,000. Thus the excess of birth-rate over death-rate in France was not more than 1·9 per 1,000, while in England it was 12·7 per 1,000. At the same time, the average annual marriage-rate of France was above that of Italy, Spain, Sweden, and the Netherlands, and very nearly as high as that of England and Wales. What has been said of the wealthy, highly intelligent, and highly prosperous nation in respect to her politics, holds no less true as to her vital statistics—France is the riddle of Europe.

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DISCUSSION *on* MR. FREDERICK MARTIN'S PAPER.

MR. LUMLEY, Q.C., wished to ask Mr. Martin whether, in the preparing of the tables, due regard had been paid to the variations that had taken place in the territories of the different countries in Europe during the last twenty-five years. It was by no means clear whether the figures given were with reference to countries as they stood at any particular time, or whether they referred to the present state of those countries. The country of Denmark, for instance, was very different now from what it was in 1853, a considerable portion of it having been transferred to Prussia. Was this portion included in the returns for Prussia and omitted in the returns for Denmark? Italy was now a country constituted of one united district, and was very different from what it was in 1865. Again, as regards the last returns from France, did they include the provinces that had been added to Prussia? He could not help thinking also, that Belgium had not been very well treated by the paper, considering what was its nature and character, and the famous statistical returns that have been supplied by that country. He should like, therefore, to know whether the word "Netherlands" was meant to include only the Kingdom of Holland.

MR. N. A. HUMPHREYS entered into a minute critical examination of the various tables, and took exception to many of the inferences drawn from the figures by the author. He thought that instead of drawing conclusions from comparisons of results for single years, Mr. Martin should have used averages of groups of years. The paper stated it was "probable that at the end of the present century the population of England and Wales will have risen to 30 millions," but according to his (Mr. Humphreys') calculations he estimated that it would rise to 33 millions. It was also stated that the high death-rate of Prussia was steadily decreasing; unfortunately, however, it was increasing, for if the period of twenty-two years under observation was divided into two periods of eleven years, the last period would show an increased death-rate. He did not undervalue the paper, which dealt with important figures, but it appeared to him that the figures had not been dealt with scientifically, that the paper contained errors and contradictory statements, and that it was well that these matters should be discussed with a view to their being rectified.

MR. F. L. CÖSTER (Vice-Consul in London for Sweden and Norway) said he wished to say a few words in explanation of the variations or fluctuations as regards Sweden. It would be seen, on reference to the tables, that the births in Sweden declined considerably during the years 1867-70. When this was first pointed out to him, he attributed the decline entirely to the failure of the harvests; but he looked into the reports of Dr. Berg, the head of

the statistical department of Sweden, and he found that the decrease had recurred periodically, and that Dr. Berg attributed the origin in a great measure to the distress in Sweden during the years from 1806 to 1810. Sweden had then war with Russia, Denmark, and France, typhus fever was brought home by the soldiers and raged in the country, and famine prevailed at the same time. The consequence was that there were comparatively few children born in this period of about five years, and hence in about thirty years afterwards, from 1836 to 1840, there were few people arriving at the marriageable state, and the same recurring period took place from 1866 to 1870. In addition to that there was almost a total failure of the crops of Sweden in 1867-68, the effect of which was immediately shown in the decreased number of marriages. The births declined from 137,000 in 1866 to 115,000 in 1868; and the marriages, which were in 1866 27,797, decreased in 1868 to 22,833. In 1869, they were 23,503, and in 1870, 25,072; this being mainly the effect of the bad harvests. In connection with this it was found from the Swedish statistics, that 45 per cent. of all the marriages in Sweden took place in October, November, and December. The country being entirely agricultural, it was only after the harvest was over that people could get married.

Mr. CORNELIUS WALFORD said, that lately he had looked particularly into the statistics of France. He was not one of those who believed that the population of that nation was to die out. He thought that this theory had been rather overstated; he had made a population table for the last one hundred and fifty years, and there were only two periods during those years where the population showed any decrease whatever, and this had been the result, he believed, in both cases of a decrease of territory. An able article had lately appeared in the "Journal of the Statistical Society of Paris," in which there were some facts stated which went to show that the ultimate tendency might be a decline of the population, unless the causes which had been in operation in the past were modified. No doubt it showed in a very marked manner, that the increase of the population was much less there than in some other States. In regard to France, England, and Germany, he would give the general results from that article as to the number of births in relation to each 1,000 married women between the ages of 15 and 50. In France the number of births per 1,000 of married women was 173; in England 268; and in Germany 270 annually. Those facts were quite in conformity with the conclusions arrived at in Mr. Martin's paper. Of course it was always disadvantageous to take the statistics of any one year, but taking the year 1875, which seemed to be a fair average year for France, he found that the total number of births in that country was 950,975, showing a decrease of 2,600 on the preceding year, but an increase of more than 4,000 on the year 1873. In 1875 the deaths amounted to 845,062, being an excess over those of 1874 of 63,000. The marriages were 305,457, or about 2,000 more than the preceding year. The total increase of the population, therefore—subject to some correction for emigration, which did not, as far as he could judge, seem to be made in the

table—was in 1875, 105,913. This did not show a tendency in the population to die out, and he was satisfied in his own mind that there was a misapprehension in regard to that very popular belief. The total number of illegitimate births in 1875 was 66,000, against 884,975 legitimate, being 7.4 per cent. The number of still-born children—which he was sorry to say we had never been wise enough to register in England—was in France in 1875, 43,000, against 43,334 in the preceding year; but what proportion the still-born births bore to the legitimate as against the illegitimate births was not shown. He commended the perusal of the article in question to those who desired to have exact information on the subject; and he ventured to say that if Mr. Martin's paper had no other effect than to draw careful and rational attention to these facts with regard to France, he was confident that the result of that investigation would be, that some of the illusions that had hitherto existed with regard to France and her population ratio would be removed.

Mr. L. L. COHEN said there were two points connected with the subject which had not occupied the attention of the meeting, and he was sorry he had not provided himself with statistics on the subject. It was a remarkable fact that in France there was a greater movement of the population from the country to the towns than there was in this country; this was especially the case since the war of 1870, and he had been told by French statisticians that this was one of the causes why the birth-rate had remained stationary and that the marriage-rate had rather decreased. The change in the habits of the people's lives had been so great, that it arrested the progressive movement of the country to a remarkable extent. This was borne out by what had taken place in the Netherlands; there the converse had taken place to what had occurred in France. The great proportion of the population in Holland some years ago was in the towns, and it had now gone from the towns to the country, because Holland was now to a greater extent agricultural than manufacturing than it formerly was. The result was, that the births had increased and the marriages had rather increased. In considering this question, it should be borne in mind that it had a great deal to do with the vital statistics of the country, whether the people were engaged in different pursuits and whether, comparing one period with another, there had been a considerable movement of the population so as to disturb the ordinary vital statistics. It appeared to him that in considering these statistics, it was an important element to be considered whether this movement from countries to towns or great cities where wealth and luxury were abundant, was attended with a retrogression in the population of the country. He was not aware whether the rate of births in London was higher than that of the country at large, but he was told that it was not so but that the opposite was the case. This was an important element in considering the vital statistics of a country, and he thought that an inquiry in this direction would be advantageous.

Mr. F. MARTIN said he had taken all the figures from the returns

of the Registrar-General, and no doubt Dr. Farr would help him to explain those figures. The word Netherlands was the official and real name of the kingdom of which Holland was a mere province.

Dr. FARR said that Mr. Martin's paper was remarkable for the number of facts it contained, and was very interesting. Mr. Martin had selected the figures from what he thought a good source, namely, the Reports of the Registrar-General. He (Dr. Farr) must say that a great deal of trouble was taken with these reports, which were compiled from official returns from the different countries in Europe. He was sure that Mr. Humphreys, who had rather severely criticised Mr. Martin's paper, would not deny that the facts as stated by Mr. Martin were correct, although he might dispute the inferences drawn from the facts. Instead of taking an extreme year, Mr. Humphreys said that Mr. Martin should take an average of years. That was desirable, and he was sure that Mr. Martin would be glad to do it. What the paper was chiefly remarkable for, was its exhibiting in a clear light the facts about the population of the great States of Europe, and no one could deny the importance of these facts. Investigating them in a scientific way, there were a great number of things to be taken into account besides mere facts. With regard to marriages, he had observed that in Italy they varied considerably from a great number of causes, marriage being a voluntary act. The mode of recording the marriages there had varied. A marriage law had been passed in Italy converting marriage from an ecclesiastical ceremony into a civil procedure. A great number of the population objected to this change, and became greatly alarmed at it. In 1863 16 per 1,000 of the population married annually; in 1864, 18 per cent. This increase of rate was owing to the law having just passed. Great numbers of the people of Italy in anticipation of the passing of the Act accelerated their marriages, because they did not choose to marry under civil procedure. In the year 1866 the marriages suddenly fell down to 11 per 1,000; in the following years the percentage rose to 13, 14, and 16, and was now about 15, having attained their normal state. It was also curious to observe the influence of the war upon marriages in France and Germany. As to the deaths, Dr. Engel took a great deal of trouble to get a return of the deaths of all the German soldiers in France, and they were inserted in the statistics of Germany. As to the variation of the birth-rate in France, it was now perfectly well known to exist as a fact. The number of children born to a marriage was much fewer than it was last century, as Mr. Walford could testify.

Mr. WALFORD: Something less, but I cannot say much less. It is owing perhaps to the thrift of the people who do not desire to have more children than they can support.

Dr. FARR said that the average of births in England and Wales was 35 annually per 1,000 of population, and the birth-rate was remarkably steady, and this being low in earlier years was owing to the fact of registration not being compulsory then as it was now, the

births having been, however, most completely registered for the last ten or twenty years. In England the number of births annually per 1,000 was 35, in Sweden 32, in Denmark 32, and in France instead of 35, it was only 16. The population of France was stationary, but he did not think it was declining or would decline. The French people did not seem to care to procreate children so freely as the English or the Germans. They had a certain standard which he would not attempt to explain; but it was a fact that attracted the attention of eminent French as well as of English statisticians. He was sure that Mr. Martin would feel that his paper was appreciated by the Society. It had set forth in a very happy way some of the most vital statistics of the great States of Europe. Mr. Martin himself would not say that he could not draw other or more important inferences from the facts he had stated than he had already done, and the members of the Society would not fail to draw inferences for themselves when the paper was in their hands.

Mr. MARTIN, after thanking Dr. Farr for the compliment he had paid him, said that there was a prevailing mistake in believing that the practical operation of the Malthusian theory was the cause of the unprogressive character of the French population. The stationary condition of the population was due, he thought, chiefly to one cause, namely, the great Napoleonic wars. During these wars the flower of the population of France was destroyed in the field. After ravaging the greater part of Europe, Napoleon took with him a million to Russia, and contemporary historians relate that, at that time there were none but old men and children left in many places. It was a great mistake to say that the French did not want children, they were passionately fond of children. The French race had suffered since the time of Napoleon I, the same as the Swedish race suffered after the exhausting wars of Gustavus Adolphus and Charles XII. The chief reason why England stood ahead of all the great countries was because she had no wars. The best men remained at home, and men had children when in the prime of life.

Dr. FARR said that the population of England never increased faster than during the great war.

Mr. MARTIN: Which cost England more money than men. The loss in men was altogether inconsiderable compared with the losses of France.

Dr. FARR said that the reason was not so much that the French did not marry, but after marriage they did not produce so many children as in Prussia, or Austria, or England. The Registrar-General for Ireland had shown, that there was a very small proportion of bastards in Ireland compared with England. That had been ascribed to the want of registration, but the Registrar-General had shown that it was also partly due to the great emigration of people from Ireland at the marrying age. This did not hold good, however, in France.

Dr. GUY said, that as far as his own observations of France, made many years ago went, there seemed to be a stronger affection between the brother and the sister in that country than there was in nations where there were more brothers and sisters in a family; and when the family was small the affections of the parents seemed to be more concentrated. But he did not think that this state of things materially affected the question why the French on the average had smaller families than the English. He (Dr. Guy) hardly thought that Mr. Martin's explanation could be the true one. After such a lapse of time the effects of war must have passed away; so that if one short series of years before the war could be compared with another like series after the war, the difference in the productiveness could not be attributed to the circumstance of a drain having been made so many years ago on the manhood of France. There was a very interesting question not touched upon by the author, namely, the annual fluctuations of births, marriages, and deaths. Quetelet it was who had called attention to the fact that the annual fluctuations in the number of marriages, in respect of which people consulted and deliberated before they acted, were less than in the case of the number of deaths, which occurred independent of the human will.

Mr. WALFORD said that Mr. Martin had asked him to call attention to the table at the bottom of p. 602. In the composition of that table the averages of all the other tables were concentrated, and therefore the fluctuations of the different years would only affect the tables generally; and so far it seemed to get over the difficulties expressed by some of the speakers. The feature which Mr. Martin dwelt upon was in the last column of the table, which showed the surplus of the birth-rate as against the death-rate. He (Mr. Walford) was disposed to think on reading the table that the figures were somewhat exaggerated. In regard to the small families in France, he thought the land question had a very important influence. Those who were acquainted with the land system in France, must be struck with the smallness of the holdings, and a prudent parent might consider that if even that small holding was to be cut up amongst his children, it was material that the number of them should not be very large. Other economic considerations might also prevail in the same direction.

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