

ON THE RELATIVE VITALITY OF THE SEXES.*

To the Council of the Statistical Society.

MY LORDS AND GENTLEMEN,—The Registrar-General having advised me to render public a table deduced from his 14th and 15th Annual Reports (1851-2), published this year, and whereof he has favoured me with a copy, I beg to communicate it herewith to your Society.

In the 14th (1851) Report are two companion tables (Table XII., p. 16), and in the 15th (1852) are similar tables (Table XI., p. 9), showing the per centage of mortality in each sex to the numbers living at that age in various years. Thus in the year 1838, of 100,000

males	}	then living, aged from 25 to 35, there died	1,064
females			1,046.

It occurred to me, that if the quotient of these two numbers $\frac{1\cdot064}{1\cdot046} = 1\cdot017$, were tabulated, it would nearly represent the law of mortality between the two sexes, independent of epidemics and other aggravating causes. Thus, if 10 men and 9 women, 20 men and 18 women, 50 men and 45 women, &c., died per 10,000 of the then existing population, the proportion of 10 to 9 would still remain unaltered.

These quotients are exhibited in the annexed table (*see next page*).

Thus, of a population of 100,000 of each sex between 35 and 45 years of age, in the year 1849, there died 978 males to every 1,000 females; in 1851, 1,036 males to 1,000 females, &c.

The last column shows how small are the extreme variations for the period 1838-52, or half a generation.

The table indicates that man is relatively weaker than woman at 0-5 years of age ($2\frac{1}{2}$ mean); this maximum is again apparent at 45-55 (*i. e.*, 50); they are nearly equal at 5-10 ($7\frac{1}{2}$), 35-45 (40); and at 25-35 (30), the principal period of reproduction, females are less able to resist death, in the proportion of 95 to 100. The general regularity of this *minimum at this age* is a most striking feature of the table: and if the birth-register would indicate the age of the mother and the rank of the child (as 1st, 2nd, 5th, &c.), we should have a still better elucidation of this FACT.

The irregularity in very aged persons, of 95 and upwards, is of no great moment, considering the smallness of the data, the occasional impossibility of accurately knowing the exact age of these time-honoured individuals, &c.

The *general agreement* of the two penultimate columns makes me suspect some little misprint in the Registrar's numbers for the ages 25-35, 35-45.

If the report-numbers could be ascertained for every single year of life, we might thence deduce the numbers for every single year of life, and perhaps light on the mathematical law of this portion of vital statistics.

I am, &c.

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* Extracted from the *Journal of the Statistical Society*, June, 1856.

The last column *e.g.* is 1·095—1·056 = 0·039.

Year	1896.	1889.	1840.	1841.	1842.	1843.	1844.	1845.	1846.	1847.	1848.	1849.	1850.	1851.	1852.	Mean. 1838-51.	Mean. 1843-52.	Dif. Max. Minim.
All Ages	1·089	1·077	1·074	1·068	1·076	1·076	1·076	1·079	1·078	1·070	1·075	1·056	1·065	1·072	1·076	1·075	1·072	·039
0—5	1·164	1·168	1·173	1·168	1·170	1·170	1·187	1·178	1·163	1·158	1·160	1·158	1·167	1·159	1·164	1·167	1·166	·031
5—10	1·007	·967	·973	·993	·974	·995	·994	1·029	1·014	1·020	1·046	1·019	1·005	1·010	1·032	1·003	1·018	·073
10—15	·956	·957	·953	·961	·979	·986	·940	·979	·951	·953	·936	·989	·951	·932	·968	·961	·959	·057
15—25	·997	·966	·959	·963	·943	·985	·946	·936	·987	1·011	·977	·959	·923	·949	·958	·966	·965	·088
25—35	1·017	·979	·963	·971	·923	·947	·934	·945	·979	·988	·941	·923	·890	·943	·939	·949	·938	·124
35—45	1·022	1·005	·998	·992	·981	·993	1·021	1·012	1·024	1·010	1·002	·978	·997	1·036	1·013	·989	1·068	·058
45—55	1·174	1·161	1·146	1·158	1·136	1·160	1·148	1·169	1·155	1·154	1·173	1·132	1·165	1·176	1·199	1·157	1·162	·067
55—65	1·145	1·169	1·111	1·145	1·108	1·117	1·100	1·115	1·124	1·131	1·142	1·089	1·135	1·136	1·155	1·126	1·124	·080
65—75	1·168	1·156	1·135	1·110	1·097	1·119	1·113	1·108	1·098	1·105	1·119	1·098	1·103	1·090	1·101	1·115	1·106	·078
75—85	1·111	1·108	1·070	1·067	1·114	1·081	1·086	1·105	1·092	1·087	1·102	1·083	1·105	1·097	1·075	1·093	1·091	·044
85—95	1·124	1·106	1·063	1·049	1·035	1·040	1·115	1·095	1·061	1·107	1·109	1·069	1·102	1·072	1·031	1·082	1·083	·093
95 and upwds.	1·209	1·080	1·050	1·016	1·084	·979	·969	1·167	·989	1·063	·906	·989	·898	·932	1·068	1·021	·995	·311