CIRCULATION.—COUNTRY BANKS.

Average Amount of Promissory Notes in Circulation in ENGLAND *and* WALES, *on Saturday, in each Week during the* FOURTH QUARTER (*Oct.—Dec.*) *of* 1863; *and in* SCOTLAND *and* IRELAND, *at the Three Dates, as under.*

ENGLAND AND WALES.				SCOTLAND.				IRELAND.		
DATES.	Private Banks. (Fixed Issues, 4·26.)	Joint Stock Banks. (Fixed Issues, 3·27.)	TOTAL. (Fixed Issues, 7·54.)	Three Weeks, ended	£5 and upwards.	Under £5.	TOTAL. (Fixed Issues, 2·75.)	£5 and upwards.	Under £5.	TOTAL. (Fixed Issues, 6·35.)
1863.	£ Mlns.	£ Mlns.	£ Mlns.	1863.	£ Mlns.	£ Mlns.	£ Mlns.	£ Mlns.	£ Mlns.	£ Mlns.
Sept. 26	3,17	2,93	6,10							
Oct. 3	3,31	3,04	6,35							
„ 10	3,40	3,05	6,46							
„ 17	3,44	3,03	6,47	Oct. 17	1,63	2,70	4,34	2,88	2,78	5,66
„ 24	3,41	3,01	6,43							
„ 31	3,38	3,00	6,38							
Nov. 7	3,36	3,00	6,36							
„ 14	3,33	2,98	6,31	Nov. 14	1,74	2,79	4,53	2,99	3,02	6,02
„ 21	3,29	2,95	6,25							
„ 28	3,26	2,93	6,19							
Dec. 5	3,19	2,87	6,06							
„ 12	3,13	2,84	5,98	Dec. 12	1,70	2,94	4,64	2,86	3,08	5,94

FOREIGN EXCHANGES.—*Quotations as under,* LONDON *on Paris, Hamburg & Calcutta; —and New York, Calcutta, Hong Kong & Sydney, on* LONDON—*with collateral cols.*

1	2	3	4	5	6	7	8	9	10	11	12	13	14
	Paris.				Hamburg.				Calcutta.				
DATES.	London on Paris.	Bullion as arbitrated.		Prem or Dis on Gold per mille.	London on Hambg.	Bullion as arbitrated.		New York.	India Council	At Calcutta on London.	Hong Kong.	Sydney.	Standard *Silver* in bars in London.
	3 m.d.	Agnst. Engd.	For Engd.		3 m.d.	Agnst. Engd.	For Engd.	60 d.s.	60 d.s.	6 m.s.	6 m.s.	30 d.s.	pr.oz.
1863.		pr.ct.	pr.ct.			pr.ct.	pr.ct.	pr.ct.	*d.*	*d.*	*d.*	pr.ct.	*d.*
Oct. 3 ..	25·57½	—	0·3	¼ pm	13·8⅜	—	0·6	151	23⅜	24⅜	57¾	1 p.	61¼
„ 17 ..	25·60	—	0·3	½ „	·8¾	—	0·6	157	23¼	„	58	2 „	61⅜
Nov. 7 ..	25·62½	—	0·1	1½ „	·9	0·4	—	163¼	23⅜	24½	„	„	61⅜
„ 14 ..	25·75	—	0·1	2 „	13·9½	0·5	—	161	24	24⅜	„	„	„
Dec. 5 ..	25·80	—	0·1	2½ „	13·9¼	0·1	—	162½	23⅝	25⅛	57½	„	61⅜
„ 19 ..	25·75	—	0·2	3 „	13·8½	—	—	161½	„	25½	„	„	61¼

Vol. XXVII.] [Part II.

JOURNAL OF THE STATISTICAL SOCIETY,

JUNE, 1864.

REPORT *of the* COUNCIL *for the* FINANCIAL YEAR *ended* 31*st December*, 1863, *and for the* SESSIONAL YEAR *ended March*, 1864, *presented at the* THIRTIETH ANNIVERSARY MEETING *of the* STATISTICAL SOCIETY, *held at the Society's Rooms*, 12, *St. James's Square, on Tuesday*, 15*th March*, 1864; *with the* PROCEEDINGS *of that Meeting.*

COLONEL W. H. SYKES, M.P., F.R.S., *President, in the Chair.*

THE Council have much pleasure in placing before the Fellows of the Statistical Society upon this the *thirtieth* anniversary a brief report of the proceedings of the past year.

The number of Fellows now on the list (March, 1864) is 357, including 63 Life Members — against 368 (including 67 Life Members) at the same date last year. The losses by death, withdrawal, and default have been 27; the new elections are 16. In 1862-63 the losses were 35; and the new elections, 26.

The Income of the Year ended 31st December, 1863 (exclusive of the balance of 233*l.* from 1862), was 766*l.* (against 770*l.* in 1862); and the expenditure was 669*l.* (against 763 in 1862), leaving a Cash Balance, on 31st December, 1863, of 330*l.* (against 233*l.* at the end of 1862).

The Surplus of Assets, on the 31st December, 1863, was 1,767*l.*, after providing for all Liabilities; on 31st December, 1862, it was 1,720*l.* These figures afford the best evidence of the satisfactory condition of the Society's finances.

No diminution has been experienced in the number, variety, or importance of the subjects which, during the past year, have been brought under the notice of the Society. The following Papers were read at the Monthly Meetings:—

March, 1863.—*Mr. Walford.*—Recent Financial and Taxation Statistics of the United States.

April, „ *Mr. Frederick Purdy.*—The Expenditure of the United Kingdom for Colonial Purposes.

May, 1863.—*Major-General Tulloch, K.C.B.*—On the Pay and Income of the British Soldier, as compared with the Rate of Agricultural Wages.

June, „ *Dr. Guy.*—On Sufficient and Insufficient Dietaries, with especial Reference to the Dietaries of Prisoners.

Nov., „ *Mr. H. J. Chapman.*—The Industrial Progress of Victoria as connected with its Gold Mining.

„ „ *Mr. Hendriks.*—On the Progress of Official Statistics in the Netherlands, with a New Dutch Life Table, by Dr. von Baumhauer.

Dec. „ *Professor Rogers* (Oxford).—On the Continuous Price of Wheat for 102 Years (1380-1481).

„ „ *Colonel Sykes.*—On Edibles and Potables in 1500.

Jan., 1864.—*Professor Hind.*—On the Commercial Progress and Resources of Central British North America.

Feb., „ *Mr. W. L. Sargant.*—On certain Defects and Results of the Registrar-General's Reports.

The Thirty-third Meeting of the British Association was held at Newcastle-upon-Tyne, in August last. Mr. Tite, M.P., one of the Fellows of this Society, was President of that Section which is devoted to the study and discussion of questions of Economic Science and Statistics. Several papers were contributed to the Section by our own Fellows, and one in particular by the President of this Society, of a very elaborate and practical character, upon the comparative cost of the English and French armies. This paper, upon a subject of special interest at the present time, will be found in the March number of the *Journal*.

The National Association for the Promotion of Social Science met in Edinburgh, under the Presidency of Lord Brougham, in the early part of October last. The Fellows have been already informed by Mr. Walford, who attended the Meeting as one of the Delegates of the Statistical Society, of the success which as usual attended the researches of that cosmopolitan body. Mr. Walford was struck by the large application of statistical methods to the investigation of topics brought under the notice of the various Sections assembled at Edinburgh.

The International Statistical Congress met at Berlin in September last. Mr. Samuel Brown, who was a Delegate from this Society, has already told us of the proceedings of that Meeting. The Delegates sent to the Congress by Her Majesty's Government were Dr. Farr, Mr. Hammick, and Mr. Valpy. The Report presented by each of those gentlemen to the Congress is published in our *Journal*.

The Council are happy to say that, during the past year, the useful task of preparing a General Index to those volumes of the *Journal*, ten in number, which have been published since 1852, has been successfully accomplished, at a cost which has been entirely limited to the charge for printing; and, consequently, it can be supplied to the Members at an extremely moderate price. At the same time the Council have deemed it advisable to reduce the price of the Index to the first fifteen volumes to half the original charge.

In conclusion, the Council beg to assure the Fellows that it will be their endeavour to maintain the usefulness of the Society by extending its numbers and influence.

The Chairman moved the adoption of the Report, together with the Abstract of Receipts and Payments and the Auditors' Report.

The Resolution having been seconded was carried unanimously.

A Ballot was then taken for the election of a President, Council, and Officers for the ensuing twelvemonths, and the following was declared to be the list, viz.:—

COUNCIL AND OFFICERS FOR 1864-65.

President.

COLONEL W. H. SYKES, M.P., F.R.S.

Council.

Charles Babbage, M.A., F.R.S.
Colonel George Balfour
James Bird, M.D.
Sir John Boileau, Bart., F.R.S.
Samuel Brown
William Camps, M.D.
James Caird, M.P.
Edwin Chadwick, C.B.
Leonard Henry Courtney
William Farr, M.D., D.C.L., F.R.S.
Right Hon. Earl Fortescue
William Augustus Guy, M.B.
James Thomas Hammick
Frederick Hendriks
James Heywood, F.R.S.
William Barwick Hodge
Charles Jellicoe
Leone Levi, F.S.A.
William Golden Lumley, LL.M.
The Right Hon. Holt Mackenzie, F.R.G.S.
Matthew Henry Marsh, M.P.
Right Hon. Lord Monteagle, F.R.S.
Sir Roderick Impey Murchison, K.C.B., G.C.St.S., D.C.L., LL.D
William Newmarch, F.R.S.
Frederick Purdy
Colonel W. H. Sykes, M.P., F.R.S.
W. Tite, M.P.
Major-General Sir A. M. Tulloch K.C.B.
Richard Valpy
Cornelius Walford
Rev. William Whewell, D.D., F.R.S.

The names of the New Members of the Council are given in Italics.

Treasurer.

William Farr, M.D., D.C.L., F.R.S.

Honorary Secretaries.

William Augustus Guy, M.B. | William Golden Lumley, LL.M.
Frederick Purdy.

Mr. Taylor moved a vote of thanks to the President, Council, and Officers, for their services during the past year, which was carried unanimously.

At the motion of Mr. James Heywood, and seconded by Dr. Farr, it was unanimously resolved:—

> "That the Fellows desire to call the attention of the "Council to the recent amalgamation of the Social Science "Association with the Society for the Amendment of the "Law, by which opportunities will probably be afforded of "occasional large assemblies in London on subjects connected "with Social Science, Economic Science, and Statistics."

A vote of thanks to the Chair brought the proceedings to a close.

The following is the Report of the Auditors:—

"Statistical Society,
"12, St. James's Square,
"*London, 8th March*, 1864.

"The Auditors appointed to examine the Accounts of the Statistical Society for the year 1863

"Report:—

"That they have carefully compared the Entries in the Books, with the several Vouchers for the same, from the 1st January to the 31st December, 1863, and find them correct. The *Receipts* (including the Balance from 1862, 232*l.* 19*s.* 4*d.*) have been 999*l.* 9*s.* –*d.*, and the *Payments* 668*l.* 19*s.* 4*d.*, being a Balance in favour of the Society of 330*l.* 19*s.* 4*d.*

"They have also examined the statement of *Assets* and *Liabilities* prepared by the Council; the *former* amount to 1,917*l.* 13*s.* 5*d.*, and the *latter* to 150*l.* 7*s.* –*d.*,—showing a Balance in favour of the Society of 1,767*l.* 6*s.* 5*d.*

"They also find that at the end of 1862, the number of Fellows was 368, of whom 10 Died, 15 Resigned, and 2 are Defaulters, making in all 27, and 16 new Fellows were elected during the year, leaving 357 as the number of Fellows on the list, on the 31st December, 1863.

(Signed) "Cornelius Walford,
"Henry G. Bohn,
"R. C. Griffith, } *Auditors.*"

The statement of Receipts and Payments, and Assets and Liabilities, is as follows:—

(I.)—Receipts *and* Payments *of the* Statistical Society *for the* Year 1863.

RECEIPTS.	£	s.	d.	PAYMENTS.	£	s.	d.
Balance in Bank, 31st December, 1862..	232	10	4	Rent	75	–	–
1863.				Salaries	174	10	–
Dividends	20	1	3	Printing *Journal* £270 14 6			
Subscriptions:—				Advertising „ 21 17 6			
279 for 1863 at £2 2*s.* £585 18 –					202	12	–
1 „ 1861 „ 2 2*s.* 2 2 –				Library	20	1	9
Arrears—8 „ 2 2*s.* 16 16 –				Index to vol. xxvi of *Journal*	4	4	–
	604	10	–	Stationery and Sundry Printing	38	13	3
Composition	21	–	–	Postage	18	16	10
Journal Sales £88 2 5				Ordinary Meetings	24	3	6
„ Advertisements 26 10 –				Fire and Light	2	9	3
	114	12	5	Incidental	12	9	1
				Balance in Bank, carried to 1864 £329 13 5			
				Balance of Petty Cash in hands of Assist. Secretary – 15 11			
					330	9	4
	£999	0	–		£999	0	–

(II.)—Balance Sheet *of* Assets *and* Liabilities *on* 31*st* December, 1863.

LIABILITIES.	£	s.	d.	£	s.	d.	ASSETS.	£	s.	d.
Printing *Journal* for Dec., 1863	76	4	3				Cash Balance	329	13	5
Printing General Index to last Ten Volumes of *Journal*	40	18	–				Investments:—			
Stationery and Sundry Printing	0	0	0				3 per Cent. Consols (328*l.* 15*s.* 4*d.*) cost £300			
				135	0	–	New 3 per Cents. (569*l.* 17*s.*) „ 567			
Advertising Dec. *Journal*	10	14	–					867	–	–
Index to vol. xxvi (1863)	4	4	–				Property (Estimated Value):—			
				14	18	–	Books in Library £400			
Balance in favour of Society				1,767	6	5	*Journals* in Stock 200			
							Furniture 100			
								700	–	–
							Arrears due and recoverable (say)	21	–	–
				£1,917	13	5		£1,917	13	5

On Certain Results *and* Defects *of the* Reports *of the* Registrar-General. *By* William Lucas Sargant, *Author of "Social Innovators and their Schemes," "Science of Social "Opulence," &c.*

[Read before the Statistical Society, 16th February, 1861.]

The principal conclusions at which I arrive in the following paper are these:—

1. Comparing the last decennial period (1851-60) with the previous one (1841-50), the improvement in the rate of mortality is very small, and is far from fulfilling the expectations of sanitary reformers, p. 175. The excess of mortality in towns as compared with that of rural districts, is an evil too deeply seated to be corrected by improved drainage and water-supply, p. 177.

2. The rate of mortality among young children has been greatly exaggerated; partly through an erroneous mode of calculation, p. 181.

3. The infant death-rate of London is low: the death-rate of London children *past* infancy is singularly *high* by comparison, p. 198. The Bethnal Green statistics are remarkable, p. 199.

4. The rate of farm wages has little comparative influence on the death-rates of counties, p. 184.

5. Dr. Gairdner's opinions published in the "Social Science "Transactions for 1860" are unfounded, p. 201—207.

6. The *male* death-rate is the true test of comparative mortality, p. 179.

7. In comparing one place with another, the *ages* of the inhabitants must be taken into account. More deaths will happen in a healthy foundling hospital than in an unhealthy barrack, p. 173.

8. The *classes* of society must also be taken into account. It is useless to compare Whitechapel with Clifton.

9. In comparing one town with another, we must take the *borough* and not the parish which bears the name of the borough. The Registrar-General takes the parish in some cases; and in other cases a large district with the town for its centre, p. 187.

10. Neglect of the precautions mentioned in 6, 7, 8, and 9, has led to some false inferences. Of the very great provincial towns Birmingham is the healthiest: but the Registrar-General represents it as *less* healthy than London by $\frac{21}{1000}$ or $\frac{3}{1000}$; I contend that it is considerably *more* healthy than London, pp. 203, 204.

11. Some alterations are required in the Registrar-General's Reports. Every volume ought to have a preface with instructions to

inquirers: with examples of modes of calculating the rates of mortality: with the latest life table, male and female, or notice where to find it, pp. 207—210.

The boroughs ought to have their mortality given: and the substitution of parishes and districts in the places and under the names of boroughs ought to be abandoned.

The tables occasionally given, *e.g.*, at XX, xix, should be explained in an intelligible manner, p. 196; and a distinction should be drawn between the two modes of calculating the death-rates:—viz. from the number left alive, and from the number exposed to the risk of death, p. 181.

A better and fuller 10 years' volume is wanted, with male and female population distinguished; and with columns of percentages of every district, sub-district, and borough, pp. 207, 208.

Introduction.

The title of this paper indicates my intentions in writing it. I have presumed to think that the Registrar-General fails to supply us with some results that it is important for us to know; and further, that the returns themselves are as yet imperfect. The general excellence of the reports is confessed by all; and if I had undertaken the task of forming an estimate of their value, I should have had to perform the first and most pleasing duty of a critic, by praising the copiousness of their materials and the lucidity of their arrangements. The task I have set myself is a far humbler one: it is to call the attention of this Society to some parts of the reports which, as I have found, present needless difficulties to inquirers; as well as to suggest and partly supply final results hitherto withheld.

When the system of registration was established more than a quarter of a century ago, the first object proposed was, to furnish Parliament with facts necessary for sound legislation as to the marriages, births, deaths, and health of the people. This object has undoubtedly been to a considerable degree attained. The conclusive evidence supplied of the comparative unhealthiness of towns, has led to sanitary measures which have not altogether failed to lessen the reproach. The standard of average mortality deduced from the registers, demonstrated the murderous waste of life that had long been going on in our barracks; and introduced changes which, we are told, have greatly lessened the evil. I wish it were found possible to go a step further, by carrying into effect the authoritative suggestion of employing the soldiers in trades. Perhaps it is to the same ascertained standard that we must attribute the present movement in favour of our Indian army: though to condemn its sanitary management it was unnecessary to go farther than our own barracks, which, unhealthy as they were, were palaces of health compared with

those of India. On the whole then, the Registrar-General's office has not been barren.

The reports however, are mines to be worked by men who are not legislators. All students of social economy should naturally resort to them for materials: so should those who want sanitary information as to a county or a town; particularly the members of town-councils. To such inquirers the greatest facilities ought to be given, by an intelligible arrangement of the tables, by copious indexes, and by preliminary instructions. I shall have to point out many deficiencies in these respects.

Prudence compels me to confess that many errors may be found in the schedules I have appended. The calculations I had to make were so numerous as to occupy part of every day during six months; and I know by experience that I cannot attain perfect accuracy: but I do hope that there is no blunder of sufficient importance to vitiate my conclusions.

I.

In the appendix will be found three Tables, A, B, and C: I will proceed to explain these, column by column.

Appendix A.—Table A has a series of figures relating to all England and Wales, to London, to 39 English counties, to the three ridings of Yorkshire, as well as to North Wales and South Wales, each reckoned as one county.

Column 1—contains simply the population of each division as determined by the recent *census*.

Column 2—contains the population of each division as given by the Registrar-General. An uninitiated person is surprised to find that these two enumerations vary considerably: Bedfordshire for example appearing in one column with 5,000 more persons than in the other column; Berks with 30,000 more. The explanation is this: —the Registrar-General, on commencing operations in 1837, instead of dividing the country anew, adopted the districts already formed by the Poor-Law Board; and these divisions, made for the convenience of pauper management, occasionally absorbed a corner of one county in a union of another county. Such allocations, if well explained in the registers, would not be inconvenient. But at present they are not well understood except by experts, because no warning to inquirers is prefixed. Thus, if I want to find Edgbaston, I look in the index, but it is not there: I search through the sub-districts of Warwickshire, but in vain: if I possess unusual patience I discover my parish at last removed from its own county to Worcestershire. I have now learnt the lesson which a preface ought to have given me; but a casual inquirer generally shuts the volume for ever. This evil would be easily remedied.

Columns 3 and 4—give the density of population in each division. We all know that a town life is unfavourable to health, and that a closely packed population has a high rate of mortality. In column 3 we have the number of acres to each person: the number being for all England and Wales less than 2; for London $\frac{1}{50}$th; for Westmoreland nearly 8; for North and South Wales 4 to 5. But this test of crowding is imperfect; because a particular division, North Wales, *e.g.*, with 5 acres to each person, might have 4 acres taken up with hills and wastes and waters; while the inhabitants were generally packed in a few towns. Column 4 is intended to correct this possible error: I constructed it by adding together in each county, the population of all the towns enumerated in the census, and then comparing this total urban population with the total rural population of the same county. I find that in Bedfordshire, Cambridgeshire, the North Riding, and some other parts, the rural population is about twice as great as the town population; whereas in North Wales it is eight times as great, in South Wales and Westmoreland four times as great, in Huntingdonshire and Rutlandshire three times as great: that in Nottinghamshire, Worcestershire, the East Riding and the West Riding, the town and the country are about equal; but that in Lancashire, Warwickshire, and Surrey (extra metropolitan) the rural population is only half that of the towns. And this column No. 4 does not give the same results as the previous column of acreage to persons; as may be seen by comparing Westmoreland and Wales. I have perhaps made a mistake in taking all the towns in the census, *i.e.* all towns of 2,000 inhabitants and upwards: if time and patience had permitted, I would have given other columns limited to towns of 5,000, 10,000, or 20,000. I believe however, that column 4 as it stands supplies a better test of crowding or sparseness, than does column 3 with only the acreage per head.

Column 5.—In the fifth column I copy from the census the decennial increase of the counties; which is great in some, and small in others, while in five instances there is a decrease. The high rate of increase is generally found where great towns prevail; though there has been a marked increase in some counties in which, as seen in column 4, the rural population is greatest; as in Essex, Herefordshire, and Wales.

Specific Mortality.—One point is here deserving of attention. The ages of persons living and dying in one place vary considerably from the ages of persons living and dying in another. Dr. Price, in the absence of any enumeration, conjectured that in consequence of the large immigration of young persons, the towns contained a superabundance of the healthiest ages; and he contended that the numerous deaths in towns were the more disgraceful on that account. On the other hand it might have been guessed that the

adult immigrants soon married and had a brood of children, and by the inevitable prevalence of deaths among these children, increased the apparent mortality of the towns. In a foundling hospital which only retained the children till 5 years old, the death-rate would be numerically high, however healthy the children might be; and a town with an abnormal number of young children would in that respect, though in a low degree, resemble a foundling hospital. A high numerical mortality so caused, would not prove unhealthiness. Dr. Price's conjecture and the antagonistic conjecture could be tested only by a comparison of facts.

Seven or eight years ago,* I spent some time in comparing what I ventured to call the *Specific Mortality* of all England, Cornwall, London, Liverpool, Manchester, and Birmingham. I must content myself with stating that I found the differences less than I had suspected: that taking 1,000 deaths as the standard, Cornwall was worse than it appeared by 18; London was worse by 29; Liverpool (much damaged by cholera and Irish famine) was worse by 68; Manchester was better by 9, and Birmingham was better by 28. Thus, comparing the two extremes, London and Birmingham, there was an appreciable difference of $\frac{57}{1000}$, or nearly $\frac{1}{18}$th part.

A misunderstanding of this principle has made it appear as an apology for parental neglect. Now there are two ways in which a place may have a high infantile mortality:—the first is the existence of an abnormally large number of infants; the second is the prevalence of parental neglect or other circumstances unfavourable to infant life. The former is the case with which we are now dealing. But in no case can the deaths of 1,000 infants be held to indicate the degree of insalubrity which the deaths of 1,000 youths indicate.

Column 6—gives the number of persons living on an average in each house. On this I have only one remark to make:—that though a low average is generally satisfactory, as showing the possession of a separate house by each family, yet a higher average is in particular parishes a result of opulence; because among the richer classes the family is increased by the domestic servants; so that in St. George's Hanover-square for example, a high average in a house does not indicate crowding as it does in Shoreditch.

Columns 7 and 8—supply the rate of mortality in each county, as well as for London and for the whole country: first for the ten years ending at Christmas 1850, and then for the ten years ending at Christmas 1860. The former I have had to calculate for myself: the latter I copy from the table of the register (XXIII, xiv).† By

* "Economy of the Labouring Classes," 415.

† The Registrar's figures are slightly different from mine. The death-rate is commonly reckoned to be $\frac{\text{10 years' deaths} \times 100}{\text{average population}}$, giving for all England and Wales 22·16 against the Registrar's 22·24; and for London 23·63 against the Registrar's 23·77. For the purpose of comparison with previous periods the difference is worth noting. The difference is caused by the Registrar-General's including in the average the intercalated years, instead of confining the calculation to the two extremes from which the intercalated years are reckoned. This mode is more accurate, but too tedious for ordinary purposes.

glancing from one to the other, we can judge of the sanitary progress in each county.

For all England and Wales the death-rate during the earlier period was 22·28 to the 1,000: during the latter period it was 22·16. These two numbers approximate so nearly as to prevent us from claiming any palpable improvement during the second decade. Nor shall we derive any comfort from going back to an earlier register; for the death-rate from the commencement of the register to 1845 was only 21·76, a number lower than those I have given by about $\frac{1}{20}$th part. Remembering the inevitably crude state of the registers in their earlier years, I think little of this second comparison; but on the whole I feel that the absence of progress is a severe disappointment. While by a few years of earnest effort the mortality among our soldiers has been reduced to a comparatively low rate from a shamefully high one; while we confidently hope that an equal or a greater improvement will soon be effected in our barracks abroad; we have to confess that our boards of health, our inspectors of nuisances, our millions spent on drainage, our grand aqueducts and our subterraneous rivers, have left us to die as we died before. We still hear that this place has ceased to be a charnel-house since its thorough drainage was completed; that the closing of the cellar-dwellings has saved thousands of lives annually: but when we get at the totals of the kingdom, we have lost in one part what we have gained in another.

Even under this discouragement I do not regret the costly efforts which we have made to purify the country. It is in itself an excellent thing to banish filth and stenches and to secure a purer water to drink. Besides, though the number of lives saved has not been large enough to tell sensibly on the registers, yet the most miserable of our people must have been spared much suffering and some demoralisation.

The percentage in our favour too, is somewhat larger than it looks. Our population becomes in each decade more urban and less rural: we ought to learn whether this variation accounts for our slow progress.

Of the increase of two millions from 1851 to 1861, far more than half belongs to the counties in which there is a prevalence of towns or mines: to Middlesex, Kent, Surrey, Hants, Lancashire, Cheshire, Staffordshire, Warwickshire, Durham, Northumberland: and even in

counties which have a predominance of rural population, as Cornwall, Derbyshire, Northamptonshire, the increase may have taken place in towns. But let us see what result would follow if we assumed the whole 2 millions of increase to have taken place in towns; and if we assumed further that at the penultimate census of 1851, the town and the rural population were equal. We should then have,

In 1851 ..... 9 millions in towns, 9 millions in the country.
„ '61 .....11 „ 9 „

If we turn to the Register XXI, xxx, we shall find the population divided in a similar way, but with a considerable preponderance of rural population. The respective rates of mortality are set down as 20 and 26½. Assuming the same difference from 1851-60, the calculated death-rate of 22¼ gives 19 for the country death-rate and 25½ for the town. The account will then stand thus:

Assumed Mortality:—

		Average.
1851	9 millions of town at 25½ and 9 millions of country at 19	= 22·25.
'61	11 „ 25½ „ 9 „	19 = 22·58.

From this it follows that on the assumptions I have made, the last decennial death-rate ought to have been ·33 in the 1,000 worse than the previous decennial death-rate. But the case is not really so strong as this; and even after allowing for the small improvement exhibited in columns 6 and 7, the advance is too trifling to be worth notice: for if the year 1860, instead of being a favourable one, had been as unhealthy as 1854, the improvement for the 10 years would have disappeared. Any conclusion founded upon so slight a variation, is open to the censure passed by Professor Radicke on rash inferences in the case of medical observations.

For the sake of simplicity I assumed that the decennial increase of 2 millions took place in towns; but it should be observed that so large a part as 840,000 was added by London and Lancashire; and further, that the fall in the death-rate of both of these was so considerable, that the two together did not weigh more heavily in the scale during the second period than during the first.

I am obliged to conclude therefore, that the result of our national efforts for purification has been, as regards the death-rate, something like a failure; and that it has by no means realised our magnificent expectations of reducing the mortality of towns to that of the country as it was, and of reducing the mortality of the country to that of Grayrigg in Westmoreland, or of Calbourne in the Isle of Wight.

I have for some years suspected that too much stress has been laid on external causes of death; particularly on bad drainage and impure water: and that any great general reduction of mortality must be effected by means far different from the laying out of millions, or scores of millions, of money. As to towns:—people generally live and work under cover. Now Mr. Neison has long inferred from his observations on friendly societies, that the difference of longevity in town and country, is not principally caused by the quality of the air breathed: for he has found that sedentary pursuits in the country are something like as injurious as they are in towns. It is not so much *country* air that is wanted as *open* air. But I have no hope of inducing our mechanics to pull out their glazed windows: nor am I sure that they could do their nicer work with numbed fingers. Much less could we get textile factories thrown open. And I see no other way of giving to in-door occupations the salubrity of those carried on out of doors.

Then as to both town and country, there are the questions of habits, of morals, of education. Improve these, and mortality will diminish: but how slow is the progress! I do not despair of raising the working classes to the present level of the middle classes, and I hope that my great-grandsons may see the improvement. Happily, such a change would probably be permanent; and I no more fear that, in the ordinary course of events, the lower classes once raised will sink again, than I fear that the educated classes will relapse into the drinking, swearing, practices of their grandfathers.

Comparing our death-rate with that of other countries, we have moderate grounds for self-gratulation. We much surpass Russia and Germany; and our small superiority over France is augmented by the necessary allowance for the greater prevalence of our towns over our rural districts. If we go to Sweden, we find that its long-continued and accurate statistics prove a lower mortality than ours (*Statistical Journal*, xxv, 111); but the paucity of Swedish towns vitiates the comparison; and a separation of the town and the country (Id. p. 169) shows that the Swedes are inferior to us, especially in the towns. Norway, we find, during 30 years had the low death-rate of 18, a singularly favourable condition even for a purely agricultural people. Belgium from 1841-50 had a death-rate little exceeding ours.

Coming to those parts of our own country not included in the Registrar-General's Reports, Ireland has only now the first promise of a register. It has been conjectured that its mortality, in the absence of famine, is low: a strange result, if it be such, of chronic squalor and destitution.

Scotland has had a registration during several years, and the returns are remarkable. The lower Scotch, compared with the lower English, are a dirty people; worse housed, more addicted to spirit drinking, and exposed to a severer climate: yet they live

longer. Our Registrar-General attributes this superiority, as I have attributed that of Sweden, to the less prevalence of town populations; but the explanation is questionable. Scotland indeed, has no metropolis of three millions, but Glasgow is as large to Scotland as London is to England. Edinburgh weighs as heavily in the Scotch scale as the aggregate of two or three of our large towns in the English scale. Comparing the two registers (Scotch Register IV, xxviii and English Register XXI, xxx) we find that the Scotch town population is more than a third of the whole, and the English town population is less than a half (·37 to ·46): a trifling difference. Some allowance however, is due to the fact that the mortality of towns is apt to increase in a geometrical ratio as the numbers increase; though this is not true of our greatest town, London.

Let us now appeal to the Scotch Registrar. In his Fourth Report (pp. xxv and xxviii) he says that in the Insular Districts the death-rate is only 14·6 in the 1,000. This applies to 162,000 persons; a number relatively equal to a million in England. We find no such low rate among ourselves. Little Rutland, with 23,000 has a death-rate of $\frac{14}{1000}$: Surrey with 273,000 and Westmoreland with 61,000, are above $\frac{18}{1000}$. Thus 357,000 people in the healthiest of our counties have a death-rate of 18 at least: an excess of a fourth above that of the Scotch insular districts.*

The Scotch mainland rural districts have a death-rate of $\frac{17\frac{1}{2}}{1000}$, and these contain more than half the population. Our rural districts have a death-rate of 20; *i.e.* an excess of $2\frac{1}{2}$ above those of Scotland. (English Registrar-General XXI, xxx.)

On the other hand, our town districts have a death-rate of only $25\frac{1}{2}$ against $26\frac{1}{2}$ in the case of Scotland.

I therefore conclude that notwithstanding dirt, cold, and whiskey, the north of our island has a decided superiority to the south, in the rural districts, but some inferiority in the towns. It appears also, that a Scotchman by migrating from the country to the town, loses more than an Englishman does by the same change; the Scotchman losing $\frac{9}{1000}$, the Englishman only $\frac{5\frac{1}{2}}{1000}$: and perhaps it is here that the dirt and the whiskey produce their fatal effects. The farm-wages of Scotland are now something higher than ours, but there is not any notable difference. It is worth inquiry whether the superiority of Scotch education, as shown by the marriage signatures, is not an important element in the estimate, especially with reference to the judicious treatment of infants. London, with a comparatively

* From a paper read by Dr. Farr before the Royal Society, 7th April, 1859, it appears that in the "Healthy *Districts*" of England, from 1849-53, the death-rate was $\frac{17\frac{1}{2}}{1000}$. See p. 861.

high state of education, and a low infant mortality, strengthens this presumption.

Column 9.—My next column gives the death-rate of males only. The Registrar-General in one of his earliest reports, propounded an opinion, that the respective occupations of the two sexes made the female death-rate more uniform than the male. The reverse seems to me to be true.

If we compare one place with another, we find that the proportion of males to females varies greatly, though in most cases the women are the more numerous. The excess of females is occasionally very large. It is not the manufacturing districts which furnish the most remarkable examples: for Manchester, Salford, Bradford, have a female excess of only 11 to 15 per cent.; while Birmingham has only 5 per cent., and Sheffield has even a small excess of males. It is in the parishes where persons of independent means congregate that the disproportion is most marked: as, for example, in St. George's Hanover square, where females predominate by 34 per cent., and females over 20 years old predominate by 44 per cent.; and still more in Leamington which has 43 per cent. more females, in Edgbaston parish which has 45 per cent. more, and in Clifton which has 73 per cent. more. It needs no argument to prove that the larger part of this surplus consists of domestic servants.

Now it has long been remarked that this introduces a disturbing element into the calculations of mortality. Domestic servants are for the most part of very favourable ages; with the sickly members eliminated; to a great extent immigrants from other parishes, who seldom die in service, but rather in their relations' houses or in hospitals. Therefore, for such places as Hanover Square or Leamington, the male mortality is the more instructive. I will pursue this topic further when I explain my Tables B and C, of town populations. I will only remark now, that the excess of females over males for all England is rather more than 5 per cent.; that the excess in London is almost 15 per cent.: that the male death-rate for all England exceeds the general death-rate by only 8 in 10,000, while the excess in London is 19 in 10,000. It appears therefore, that the female servants in London much disturb the general death-rate; and that resorting to the male death-rate as the truer test, London instead of being only $1\frac{1}{2}$ worse than all England, is more than $2\frac{1}{2}$ worse.

In a few of the counties, the male and the female death-rates vary singularly. In Bucks, Northamptonshire, and Rutlandshire the male death-rate is less than the female: in Derbyshire and Durham they are nearly uniform.

Dismissing the comparison, and looking at the male death-rate

only, we find that of the counties, Lancashire is the worst with 27½: then come Staffordshire and the West Riding with 25; Warwickshire with 24; Cheshire, Durham, Monmouthshire, Northumberland, Nottinghamshire, and the East Riding with 23. It will be asked whether this male death-rate does not increase, just as the prevalence of the town population increases. My column 4 enables me to answer that this is not so. Lancashire and Warwickshire have just the same proportions of town to country, but their respective male death-rates are 27½ and 24: London is nearly all town, but its male death-rate is almost 2 less than that of Lancashire, which has a considerable rural district.

The best counties as to male deaths are Rutland and Surrey with 18; Westmoreland with 19; Dorsetshire, Essex, Herts, Lincolnshire, the North Riding, Salop, Suffolk, and Sussex, all with 20.

But here is another defect, as I think, in the Registrar's volumes. In order to calculate the male death-rate, we must know the number of male deaths and the number of males living. The register supplies the one but not the other. The male deaths are scrupulously recorded; but the male population is not separated from the female. To have to refer to the census is a trifling obstacle to me, but it is a formidable obstacle to an occasional inquirer. And even on me a wearisome task is imposed.* The census very properly furnishes a multitude of particulars but not the totals. For example: to calculate the male death-rate of Bolton, I ascertain from the Register, XXIII, 234, that Bolton lost in 10 years 17,028 males: but turning to the census for the male population, instead of finding this given in one line, I learn that Kerslay township had 2,043 in 1851 and 2,424 in 1861; that Farnworth had 3,085 and 4,113 respectively; and so on through every sub-district and every minor division of every sub-district of which the district of Bolton consists. To get my totals I must add up two columns each containing 30 lines. The register ought to supply these totals. The case of York is worse; for it requires the adding up of two columns each of 96 lines: and Chester has two columns each of 120 lines. The counties fortunately, have the totals given (Census I, 194), but these should be copied into the register.

Column 10.—I arrive now at columns which raise questions of peculiar interest:—I mean as to the death-rate of young children. Sanitary reformers, in their zealous advocacy of improvements, have

* I leave this passage as I read it to the Society; but the totals have been pointed out to me in another part of the census. I had trusted too implicitly to the census index, which gives no reference to the places where the totals occur. The logical arrangement of the census is excellent; but for reference a full index surpasses the best logic.

made statements of a shocking character. Seventy years ago, Arthur Young told his readers that the London Foundling Hospital made it a boast in 1756, that only three-fourths of the children died in the year. We learn also from official authority, that in Dublin about the same time, the Foundling Hospital lost nearly half the children even before they were sent out to nurse. As to the present day, loose statements are made, about a frightful mortality in some parts of England. Dr. Gairdner, an eminent Edinburgh physician, asserts ("Social Science Transactions, 1860," 644) that in the great towns far more than one-fourth of the infants die in the first year. In an early number of the *Journal* of this Society (v, 230), appears a calculation made by the Secretary of the Poor-Law Commissioners, from which it appears that among agricultural labourers, artizans, and servants, half the children die under 5 years old. Such assertions though authoritative are baseless; but a hundred pens reproduce them.

I am acquainted with three modes of arriving at these inaccurate results:

1. The first of these consists in calculating the mean age of those who die, and in assuming that as this age is high or low, the rate of mortality is high or low: it overlooks the fact that in whatever institution, or neighbourhood, children are unusually numerous, the mean age of the deaths *must* be low.

2. The second mode is founded on the proportion of young deaths to all deaths. In England, the male and female deaths under 5 years old, are about two-fifths of all deaths. The false conclusion is drawn, that two-fifths of the children born, die under 5 years.

The Registrar-General has condemned both these modes, and has pointed out that they both omit the consideration of the number of children living. With a given condition of health, the number of deaths must be in proportion to the number of children among whom deaths can take place.

3. But as far as I know, the Registrar-General has not condemned the third mode. This consists in calculating the deaths from the number of persons left alive, instead of from the number who have been exposed to the risk of death.

If 1,360 new-born infants are placed in an asylum on the same day, and if their number is reduced by death, in 5 years, to 1,000, the quinquennial death-rate is $\frac{360}{1360}$ or $\frac{265}{1000}$; but the mode I condemn would call the death-rate $\frac{360}{1000}$. The difference between 265 and 360 is very large. I give this imaginary case merely as an illustration of the *principle*.

The case I originally gave was a different one, and assumed the introduction of new-born infants from time to time, to fill up the gaps in the numbers. To this it was objected that the infants so

introduced after the first day, were not exposed to the risk of death during the whole 5 years.

The question is, I confess, a very difficult one: to discuss it fully, would require more space than I have at command. But those who object to my proposed mode, have two points to consider. First, my proposed mode, applied to the Census of 1851 and 1861, gives a result as to childrens' deaths pretty nearly the same as the result deduced from the births: secondly, my proposed mode gives a result not very far from the same as that in the life table (Registrar-General, XII). On the other hand, the results obtained by the mode I condemn, very wide of those deduced from the Censuses, and from those of the life table. Judged by results, my mode is right, and the other is wrong.

My column 10 gives the death-rate of male infants under 1 year old; and I will first enumerate the best of the counties in order of merit. In all England the deaths to 1,000 are 161: in Westmoreland 104; Rutland and Surrey (extra metropolitan) 126; Hants, Sussex, and Devon 130; North Wales 131; the North Riding 136; Herefordshire and South Wales 137; Cornwall, Cumberland, and Herts 139; Kent and Middlesex (extra metropolitan) 141; Salop 142; Oxon 145.

In order of *demerit*, (against 161 for all England) we have Lancashire 192; Staffordshire 182; East Riding 181; Notts 180; West Riding 177; Warwickshire 176; Leicestershire 175; Norfolk 174; Bedfordshire and Cambridgeshire 172; Cheshire 170; Huntingdonshire 164. London has only the same number as all England;—161. This is for the first year of life, and for boys only: the deaths of girls are fewer by far.

Column 11.—I now come to the deaths in the 2nd, 3rd, 4th, and 5th years of life; *i.e.*, of children under 5 omitting the first year. We might expect to find that this column would follow the proportions of the last; that counties fatal to infants, would be about equally fatal to children past infancy: but this is not altogether the case. The most remarkable exception to uniformity is London, which loses only about as many infants as the whole kingdom, but which loses nearly *one-third more* young children (over 1 and under 5) than the whole kingdom. I will reserve my remarks on this example till we come to Table B.

There are several counties which vary in the opposite direction: *i.e.*, in which the infants die relatively faster than the young children. Bedfordshire, Cambridgeshire, and Norfolk, are examples. Column 14 gives the ratio for each county, and I shall come to it immediately.

As to the absolute number of deaths of young children over 1 and under 5, the rate per 1,000 is as follows. All England and Wales 105; London 137; Rutland 56; Westmoreland 64; the North Riding 66; Herefordshire 67; Suffolk 69; Lincolnshire 70; Herts 73; Huntingdonshire 74; Norfolk 76; Salop and Somerset 77; Dorset and Sussex 79; Wilts, Oxon, and North Wales 80; Northamptonshire 81; Surrey (extra metropolitan) 84.

The bad counties come thus. All England 105; Lancashire 144; London 137; Staffordshire 126; Warwickshire and Monmouthshire 113; Durham and the West Riding 111.

Column 12.—My next column includes the results of the two previous ones, by giving the death-rate of children from birth till 5 years old.

I have already mentioned the exaggerated statements made on this topic, by persons who erroneously believe that in some places half the children die under 5. I shall show presently that this is not true of the worst town in the worst county; and is far from being true of any other place.

The worst counties lose as follows. All England 266; Lancashire 336; London 298; Staffordshire 308; Warwickshire 289; the West Riding 287; Durham and Notts 275; the East Riding 272; Cheshire 271; Leicestershire 268.

All these numbers are for boys only: a return of boys and girls together would be more favourable. Then we ought carefully to recollect that the prevalence of towns in any county makes a high death-rate inevitable. In Lancashire and Warwickshire the town population is more than twice as numerous as the rural population (100 to 43): whereas in Leicestershire the rural population is much in excess (137 to 100).

Column 13.—Some persons would feel sure that the death-rate of children in each locality, would follow the general death-rate of the same locality. Other persons would expect an abnormally high juvenile death-rate in places where women are employed away from home. It may be true also, that particular climates are favourable to one age rather than another: that the mildness of South Devon may spare the fragile constitution of infancy, while the severer air of Yorkshire may brace the nerves of parents. My column 13 is an attempt to make the comparison between the infantile and the general death-rate.

In all England and Wales, the death-rate under 1, is 7 times as great as the general death-rate: in London it is over $6\frac{1}{4}$ times as great (6·26); Bedfordshire goes up to 8 times; Lincolnshire and Cambridgeshire about the same; Northamptonshire nearly the same; Norfolk, Notts, the East Riding and Leicestershire to a little under 8. London as we have seen, stands singularly low (6·26); yet Hants is still lower (6·19), and Devonshire is as low as London. Many other counties are a good deal lower than the average of England.

Still confining our attention to the ratio of infantile to general death-rate, we see that it is not in the great manufacturing counties that the ratio is high. Even Lancashire with its frightful loss of infants, loses its people of other ages in equal proportion.

Column 14—is the one to which I referred, in commenting upon columns 10 and 11: it is a comparison, not of young with all ages, but of young with young. I was led to it by the remarkable contrast in London, between the mortality of infants and the mortality of other young children.

I will use the word infants here in the sense of all children under 1; and the word children for all children over 1 and under 5. Comparing, throughout the country, the deaths of children for the four years with the deaths of infants for the one year, they are 65 to 100; so that for each year on an average they are only one-sixth as numerous. Against 100 infants all England loses 16 children each year: London loses 21; Lancashire, South Wales, and Monmouthshire 19; Devon and Hants 18; Northumberland 17½. The low ratios are in Lincolnshire, Norfolk, and Rutland, 11; Suffolk, Northampton, the North Riding, Herefordshire, and Bedfordshire, 12; the East Riding, Bucks, and Cambridgeshire, 12½. We must remember that these are only proportions: Devon, *e.g.*, stands unfavourably, not because it loses many children, but because it loses very few infants; and London looks far worse than Lancashire partly because it loses more children; to a great degree because it loses far fewer infants.

Column 15.—I have added two columns for the convenience of those who are disposed to conjecture the causes of the varying mortality. The first gives the rate of farm-wages in recent years, according to Mr. Purdy's valuable paper. (*Statistical Journal*, xxiv, 328.) We know from other documents,* that the middle and upper classes are longer-lived than the labouring class; and that this is especially true of children. We naturally inquire whether within each class the more affluent are longer-lived than the less affluent: whether, *e.g.*, the well paid labourer lives longer than his ill paid brother.

There are two distinct kinds of labourers, the town and the country: we know that town wages are far higher than country wages; we know also that town mortality is not lower, but far higher, than country mortality. So far the deaths increase with the affluence. But the superiority of country labourers is probably owing to their working out of doors, and not to their low remuneration. It is probable at the same time, that the high wages of many

* See Vital Statistics of the Society of Friends in *Statistical Journal*, xxii, 221: and of the Peerage in *Statistical Journal*, xxvi, 51.

artizans shorten their lives by furnishing an excessive allowance of beer and spirits.

The really valuable comparison however, is between one town district with another, and between one rural district with another. Of all the counties, Northumberland, Cumberland, and Westmoreland, have the highest farm wages; and the male mortality there is pretty good, good, and very good, respectively. The four counties in which the farm wages are lowest, are Devon, Dorset, Wilts, and Hereford; and in all these the male death-rate is at least good. Taking the aggregate death-rates of these seven counties, the ill paid are to the well paid as $\frac{3}{2}\frac{0}{0}\frac{5}{0}$, giving a trifling advantage to the ill paid. Among children under 5, the ill paid have also a small advantage, as $\frac{4}{3}\frac{1}{1}\frac{9}{9}$. No one will suppose that the low wages of the south are the cause of this trifling superiority; but I think we must infer that even these miserable wages are sufficient in the south to maintain health. The average wages of the three highest counties are 14*s.* 5*d.*: those of the four lowest are only 9*s.* 3*d.*; a difference of more than 5*s.* a-week. Gladly therefore, as I would see an augmented rate of wages among the southern labourers, I cannot hope that the improvement would of itself much lessen the rate of their mortality.

(I should mention that my averages are struck roughly, by counties, and not by the aggregate populations of the counties, *i.e.*, Devonshire for instance, with a population of 584,000, counts for as much as Herefordshire with 124,000).

Column 16, the last of this table, gives the number of women in each county who sign the marriage register: a test of education generally accepted as the most accurate we can get. I have given the women's signatures rather than the men's, because the state of instruction of mothers has the more direct bearing on the health of children.

It is remarkable (Registrar-General XXIII, vi) that in 12 counties (reckoning North and South Wales each as a county), more women than men can write: the difference being as much as from 5 to 8 in 100 marriages. In many counties however, there is a decided superiority on the male side: as in Lancashire, where 71 men and only 46 women sign; and as in the West Riding and South Wales, where there is a difference of 22 between the sexes.

One interesting question presents itself:—does juvenile mortality diminish, *cæteris paribus*, as the education of the mothers improves? It seems probable that such should be the case; and there are known facts which support the opinion. M. Le Play tells us that in one ill peopled part of Russia, a reward is offered to parents who bring up six children, and that the reward is seldom earned. He attributes the great juvenile mortality to ignorant

treatment, such as exposing to the cold the children attacked with measles. In the progress of Sweden as we learn from the excellent paper by Mr. Hendriks (*Statistical Journal*, xxv, 111) far the greatest diminution of mortality has taken place among the very young.

Some facts in my tables point in the same direction. Of 100 women who marry in all England, the marriage register is signed by 64; in London by 81: and this surplus of female education in London is accompanied by a singularly low death-rate of infants. In Surrey (extra metropolitan) the education is as good as in London, and the juvenile deaths are very few. In the other counties near London the same law holds good; since Berkshire, Kent, Essex, Hertfordshire, and Buckinghamshire, are all above the average in female education, and below it in the infantile death-rate. Bucks is the worst of them in both respects. Lancashire supplies decided confirmation; for that unfortunate county is disgracefully low in female education, and notorious for its high juvenile death-rate.

As usual, there is apparent evidence in the opposite direction. Both the East Riding and the North Riding are remarkable for the general extension of female education: whereas the East Riding has a high juvenile death-rate, and the North Riding a low one. But the force of the comparison is much weakened by finding, when we consult my column 4, that the East Riding has as many towns as Notts or the West Riding, and that in the North Riding the country predominates greatly. It is not pretended that the education of mothers will counteract all evil influences.

I should be glad if I had the means of doing for the towns what I have done for the counties, in comparing female education and infantile death-rates of different places. Unfortunately I do not find in the reports any table of signatures in towns. The smallest county has it: the largest town has it not. This want ought to be supplied.

I cannot suppose that if we had such an account, we should find a uniform combination of high female education and low infantile death-rate. A great demand for the labour of women, will everywhere cause a neglect of maternal duties; and no degree of education will correct this evil. The case of Coventry confirms this obvious truth. The registers completely support the statement that the distress of that town saved the lives of hundreds of infants, by keeping their mothers at home.

Recapitulation of A.

I have now gone all through the columns of my first table, and I have few more remarks to make upon it. I may say that it

strengthens the notion that the worst counties as to mortality whether of adults or of children, are those in which great towns prevail. Formerly perhaps, we might have said in which great *manufacturing* towns prevail: but we now know that the ill sanitary condition of Lancashire is owing more to its great seaport than even to its manufacturing towns. London too, was once thought to be pre-eminent in deaths. We see now that it is far surpassed by one whole county, and all but equalled by another, even taking the true test of male mortality: besides that to compare town with country is an unfairly severe trial for the town.

We learn also, that the sanitary improvements of the country have as yet made little impression on its rate of mortality; and that the diminished death-rates of certain parts have unfortunately, been all but balanced by augmented death-rates in other parts. We see too, that the apparent healthiness of some parishes, set apart for the especial residence of the affluent, is partly owing to the fact that many of the numerous female servants go elsewhere to die; and we conclude that the male death-rate is there the true standard of longevity. We find that some parts are more favourable to adults, some to young children: and what is more extraordinary, that some parts are more favourable to infants and some to children who have survived the first year.

I will explain hereafter the mode in which I have calculated the juvenile death-rate; the ordinary mode of calculation by a comparison of the number living with the number dying being impossible as regards the towns, without further data than those at my command.

II.

TABLE B.

My second table, containing about 30 of the principal towns, has been more difficult, and has cost me more labour, than my Table A, of counties. My difficulty has arisen from the fact that the Registrar-General has treated the towns too much as mere constituent elements of counties, instead of recognizing their substantive existence as aggregates of people placed under very different circumstances, and exhibiting very different sanitary laws, from those found among the rural districts. Though he has given the births, marriages, and deaths, of each parish, he has not given them for the towns, since these are often made up of several parishes and parts of parishes. Besides this, his epitome of results is generally confined to counties; a disregard of towns not so marked in the earlier years of the register (*see* Report IX); though even then the parish in some cases, or the district in other cases, was made to do duty as a town.

Now as I have already pointed out, Liverpool, Manchester, Birmingham, Leeds, and Sheffield, have each a greater population than 11 of the smaller English counties; and there are only 10 of the larger counties which exceed Liverpool. But this comparison is not the most important matter. In the towns, the mortality is greater, the marriages and births are more numerous, the average age of the people is lower, the wages are much higher, the occupations are more sedentary, the minds are more lively. Yet for these fifteen years no epitome has been given of the vast collection of figures relating to them.

More than this; the form of registration is such that it is impossible for anyone outside of Somerset House to get at the results. A few years ago, Mr. Commissioner Hill took some part in a controversy as to the sanitary condition of the borough of which he is recorder: he referred to these reports to ascertain the mortality: he confessed that he found himself baffled. Now in such matters many lawyers are easily baffled: but Mr. Hill, besides being an eminent lawyer, is familiarly acquainted with what we now call social science; and is moreover an arithmetician of unusual excellence. A register unintelligible to him must be quite inaccessible to the public. With reference to the same controversy, two other gentlemen searched the reports; and so entirely with the same result, that they were driven to ask the local registrars to supply the figures they wanted. Of these two inquirers, one was the able editor of a newspaper, the other was a professional accountant in large practice. If the registers are sealed books to such men, what must they be to people generally?

I now proceed to explain, as I did with Table A, each column of figures.

Columns 1 and 2.—My first two columns state the population of the various towns, first as given by the *census*, and then as given by the *Registrar-General*. In noticing the corresponding columns in the table of counties, I pointed out that the Registrar made some counties contain 5 or 10 per cent. more or less than they contain by the census; and that as a consequence, certain border parishes were transplanted into counties to which they did not belong topographically.

But these county irregularities are nothing compared with those now before us. Liverpool with a census-population of 444,000, is reduced by the Registrar to 270,000: Manchester is reduced from 339,000 to 244,000; Birmingham, from 296 to 213; Bristol, from 154 to 66 (less than half); Leeds, from 207 to 118; Sheffield, from 185 to 128; Hull, from 98 to 57.

Other towns are greatly exaggerated: as Bath, from a census-population of 53,000 to a register-population of 68,000: Blackburn from 63 to 120 (nearly double); Bolton from 70 to 130; Bradford from 106 to 196; Macclesfield from 36 to 62; Oldham from 72 to 111; York from 40 to 60; Wolverhampton from 61 to 127 (more than double). Comparing Bristol and Bradford by the census, Bristol is the larger by one-half; by the register Bradford is three times as large as Bristol.

Chester has no independent existence; it is merely a portion of the district of Great Boughton. On turning to that unknown place, you find that it consists of four sub-districts, of which Chester Castle and Chester Cathedral are two: but by adding together the register-populations of these two, you find that they exceed by one-third that of the city of Chester, which I must therefore pronounce to be absent from the reports.

Leamington again, is wanting, and appears only as a sub-district of Warwick.

Inquirers may certainly demand that Chester and Leamington should appear in the index; and it is highly desirable that all sub-districts should be indexed.

One great evil attends this disregard of the real boundaries of towns:—I mean the weakening of that influence which the register ought to exercise over the municipal authorities. The boundaries of the great provincial boroughs are neither antiquated nor unmeaning: they have been drawn rather recently, and include pretty nearly all those whom business or pleasure has brought together so as in the aggregate to constitute a town. According to the modern habits of the middle classes, few persons except artisans and medical men reside at their places of business: employers generally live in the suburbs and environs of towns. The old parish therefore, contains the poorest and least healthy portions of the population; while the neighbouring parishes contain the more affluent and healthy. But the borough includes both these kinds of population; and is therefore the true town, of which the death-rate ought to be studied and quoted. The register fails to give the means of doing this. If we desire to compare the mortality of Liverpool with that of London, we easily find the deaths of the parish of Liverpool; but for the deaths of the 174,000 persons who constitute the remainder of the borough, we may search in vain. If we want to make such a comparison for Blackburn, Bolton, or Bradford, we find districts called by those names, but each containing nearly twice as many souls as the real towns.

As an illustration of the difficulty of disentangling the necessary figures, I will take the case of Birmingham; a case which my local knowledge, aided by some familiarity with the first volume of the recent census, enables me to explain. The borough consists of the parish of Birmingham, the hamlets of Deritend and of Duddeston,

and the parish of Edgbaston, which latter has been shifted by the registrar into Worcestershire. I propose to calculate the death-rate for the 10 years, 1851-60. To do this, I have to learn first, the average population, and secondly, the average deaths. The first I learn from the census; the second I have to pick out from the register for each portion separately.

The average deaths are a tenth part of the aggregate deaths during the 10 years. These are given for the parish at XXIII, 232, as 51,238. But as Deritend, Duddeston, and Edgbaston, are only sub-districts, I must refer for them to p. 202. It is likely enough that an inquirer, not seeing these sub-districts following the parish, and having no instructions elsewhere, may set about, as I did, to collect the deaths from the register of each year. Instructions ought to be furnished, unless it is desired to seal up the registers from profane inquirers.

The 10 years' deaths in Deritend, Duddeston, and Edgbaston, are found to be respectively, 5,985, 7,190, and 2,070: and adding these to the 51,238 deaths in the parish, we have a total in the borough of 66,483 for the 10 years; and an average of 6,648 for each year.

The census (I, xxi) has supplied me with the population of the borough in 1851 and 1861, and from these figures I infer the average of the 10 years. But to prevent mistake, I compare with this the populations given by the register. Adding together the numbers assigned to the parish, the two hamlets, and the parish of Edgbaston, I find that the total is too large by 2,795. After revising my figures again and again, I comfort myself with pronouncing that a difference of 2,795 in 264,458 is not a formidable one.

Subsequently however, I find an explanation of the difference, but I find it in the census, not in the register. I discover (Census I, 476) that what the register calls Edgbaston, is not the parish but a sub-district with that name attached to it: that it contains the parish indeed, but that it also contains the considerable agricultural parish of Northfield. The population of Northfield is 2,795, the very excess that had perplexed me.

But a correction is now required; because the deaths recorded against Edgbaston, are really the deaths of Northfield as well as of the parish of Edgbaston. Making a proportionate reduction, I conclude that the death-rate of the borough is 25: and this is near enough to the truth, though it involves the assumption that the agricultural parish of Northfield, and the suburban parish of Edgbaston, are equally healthy.

But if in this instance, with my local knowledge, and by turning, with that for my guide, backwards and forwards to the register and the census, I arrive at last only at a near approximation to the

truth; any attempt to understand the mortality of other boroughs must be hopeless. I find, *e.g.*, by the census (I, 59), that the borough of Liverpool consists of the parish of Liverpool, part of the parish of Toxteth Park, part of the parish of West Derby, and the townships of Everton and Kirkdale. Turning to the register, I see nothing of Kirkdale, and I find the mortality for the whole of Toxteth Park, with no note of what part of it belongs to the borough.

I confess that as regards Blackburn, Bolton, and Bradford, where the population given by the register is nearly twice as great as that given by the census, I have not made an attempt to calculate the death-rate of the boroughs. But I must remark that the places set down under these names, instead of being towns, are districts each with a town for a centre. When therefore, we are led to believe that the death-rate of two of these places is 26, and of the other 27, we are greatly misled, because such a statement implies that it is the towns which are intended.

It is equally untrue that the death-rate of Liverpool is 33, that of Manchester 31½, that of Birmingham 26½: these are the death-rates of the worst parts of these boroughs; and the mistake is peculiarly great as to Liverpool, because the population given by the register is unusually below that of the census.

This is the most serious deficiency I have to point out. The town councils of boroughs are responsible to the country for the adoption of sanitary measures within their boundaries. The first information they need is the comparative death-rates of their own and of other boroughs. If they require their town clerk, or their inspector of health, to consult the reports, they learn as the result that boroughs are unknown to the Registrar-General: that in one case a parish, containing probably the greater part of the borough, in another case a district twice as large as the borough, stands under the name of the borough itself. Though I have shown how the death-rate of one borough may be culled from the figures given, I have before given proof that men of unusual competency, with their faculties whetted by controversy, have failed to discover the mode of doing this. The remedy I will suggest elsewhere.

Column 3.—In my next column I state the number of acres there are, not as in the counties to each person, but to every 100 persons. This does not conclusively determine whether or not the people are crowded; because many towns have extensive areas not built on; others have vast docks and blocks of warehouses; Liverpool and London have a considerable expanse of water included in their acreage; and the areas given for places like Blackburn, Bolton, and Bradford, are those of districts and prove nothing as to the towns. A large nominal area therefore, may co-exist with crowding:

but a confined area, like that of Liverpool, further narrowed by water and warehouses, does definitively prove over-crowding. It appears that the densest populations, judged by this imperfect standard, are those of the parish of Liverpool with three-fourths of an acre of land and water to every 100 persons; of the parish of Birmingham with 1¼ acres of land; of the parish of Leeds with 1¾ acres; of Nottingham and Plymouth with 2½ acres; of London and of the parish of Bristol with 2¾ acres; of Brighton with 3 acres. This order is far from corresponding with that of the death-rates: for though Liverpool is at the top of both lists, Manchester, which is a particularly unhealthy place, has 5 acres to every 100 persons, an area four times as great as that of Birmingham, the healthiest of the great towns.

Column 4—gives the increase of population as furnished by the register: information of little value, because the partial limits fixed on reduce the high decennial increase of Liverpool to 4 per cent., and that of Manchester to 7 per cent.; while Bristol is represented as being about stationary.

Column 5—consists of the number of persons in a house. London is well known as having a high number: but this is not entirely owing to the crowding of families into a part of the large old houses, and to the absence of detached cottages; it is also partly caused by the great number of domestic servants in London, just as in Bath, Brighton, and Cheltenham. Plymouth has, of all these towns, the highest number in a house:—viz., more than 10; against 5½ in all England, and against nearly 8 in London. Gateshead, Newcastle-on-Tyne, and Sunderland, have about the same as London, and the parish of Liverpool has not much less. The manufacturing towns generally, do not much exceed all England.

Columns 6 and 7.—We now come to the death-rates of the towns: and I have given first, those for the ten years 1841-50, and then those for the ten years 1851-60. Comparing these two decennial periods, I find some examples of marked improvement. This is notably the case with several of the largest and most unhealthy places. The parish of Liverpool improved from 39 to 33; but so much of the frightful 39 was owing to the famine-stricken Irish driven across the straits to die, to say nothing of exceptional cholera (as in the case of Hull), that I cannot pronounce what has been the real amendment caused by the closing of cellars and by other sanitary measures. Hull improved from 31 to 25; but the cholera-pestilence was chargeable with much of the excess of the former period.

Coventry improved by more than 2; Bath, Portsmouth, Leeds, and Bristol by nearly 2; Salford and Manchester by about 1½; Leicester, Chester, and Plymouth by about 1¼; Macclesfield and Cheltenham by more than 1; London by less than 1.

Many places however, deteriorated: as Preston by fully 2 in the 1,000; Sheffield and Southampton by less than 2; Yarmouth and Gateshead by less than 1½; Blackburn, Nottingham, and Norwich, by more than 1; Bradford and Brighton by less than 1.

I must notice here an inaccurate statement publicly made as to a supposed improvement connected with an outlay on drainage. A gentleman of authority in Bradford, in a paper ("Social Science "Transactions, 1862," liv), correcting some unfortunate mistakes made three years before, stated that in Leeds, after the execution of the main sewerage, the death-rate fell from nearly 34 to 28. Now I find that the Leeds death-rate from 1841-50 was only 29½ instead of 34; and that the reduction to 28 was a fall of less than 2 instead of a fall of 6.

Columns 8 and 9.—I now come to two columns, one containing the male death-rate, the other the excess of females living over males living. I have made some remarks on these topics, in my explanation of column 9 in Table A. I have noticed that in certain parishes containing an unusual number of affluent families, the proportion of the sexes is greatly disturbed by the aggregation of female servants; who are generally persons of favourable ages, and of more than average health; and who often return to their homes elsewhere to die. I mentioned several places, of which the most remarkable was Clifton; where at the last census the females of all ages exceeded the males of all ages by 73 per cent. I inferred that the male death-rate was more worthy of attention than the female. In my present Table B, I find that in all England the deaths in 10,000 males exceed the deaths in 10,000 males and females by 8: that in London the male excess is 19; in Clifton 36; in Leamington 31; in Southampton, Brighton, and Bristol 30; in Bath 27; in Edgbaston 24; in Yarmouth and Nottingham 23; in Manchester parish 22; in Liverpool parish 19; in Cheltenham and Leicester 18; in Bolton district and Leeds parish 17; in Birmingham parish and Coventry 15. It will be seen that it is not in manufacturing towns, but in resorts of the affluent, that the male death-rate is most in excess. Of manufacturing towns Nottingham is the highest, and Manchester is the next; both these, and only these, being above London.

It is not pretended that all the excess of females over males consists of domestic servants. Throughout the kingdom there is an average excess of 5 per cent. Then in places like Bath and Clifton, the number of ladies much exceeds that of gentlemen. Thirdly, it is only a part of the domestic servants who return to their native places to die. The excess therefore, of male over female deaths in certain parishes, is not so great as the excess of females living over males living.

Columns 10, 11, and 12.—The next matter I have to enter upon is

the death-rate of young children in towns. In explaining the corresponding columns of my table of counties, I mentioned that social reformers have indulged in exaggerations on the subject: going so far as to say that in many towns half the children born die before attaining their fifth year; and that more than a fourth die in their first year. I believe these errors have arisen from a false mode of calculating the death-rate.

I also deferred the explanation of my mode of calculation, and this I will now give. Two modes are possible. By the first, we ascertain the number of children living each year, and the number who die each year. A town that had 1,000 infants during the year exposed to the risk of death, and in which 150 infants died, would have an infantile death-rate of 150. This mode, to be accurate, would require an annual census. But we have to content ourselves with taking the mean of two decennial censuses.

For ordinary purposes this calculation is accurate enough, but it is not so for minute comparisons. It might happen that the year before the census, the deaths of infants were unusually numerous or unusually few; and in fact, the census of 1851 must have been sensibly affected by the low mortality of the year before, and by the consequently abnormal number of young children living. Again the rate of marriages fluctuates a good deal, according to the prosperous or adverse circumstances of the country: and if an unusually large number of marriages took place immediately after one census, say in 1852, and during a year or two afterwards, there would be an unusually large number of births during the first half of the decennial period; and if from 1855 to 1860 the marriages fell to their average rate, or below it, the young children living at the census of 1861, would be moderate: the augmented births of the first half of the decennial period appearing in the unusual number of children over 5 years old. The mean of the two censuses may therefore be far from accurately expressing the number of young children that have been exposed to the risk of death during the 10 years.

That these two causes, an irregularity in the death rate and an irregularity in the birth-rate, or that some other causes which have escaped me, do produce a sensible effect, is proved by the last census. In vol. ii, p. x, we find the numbers of the population at each age; and we see that of every 1,000 children under 5 years old, the number in the first year of life was 220; in the 2nd year 201; in the 3rd year 198; in the 4th year 191; in the 5th year 190: giving decrements of 19, 3, 7, and 1; decrements far indeed from those which would follow on the average from the ascertained laws of uniform births and deaths.

But since there is so much irregularity in the whole country,

where an excess in one corner is corrected by a default in another, we might safely assume that the various divisions would exhibit still less uniformity. I have not diligently sought for examples: but I find that in Bedfordshire in 1855, the deaths of infants were 463, in the next year, only 384; a difference of 79 or 17 per cent.: that in the same two years, the deaths of children over 1 and under 5 were 363 and 201 respectively; a difference of 162, or 44 per cent. How different would a census have looked as to the young children of Bedfordshire, if taken in 1855 or in 1856!

A similar instance, but in a town, is that of Nottingham; where the deaths of all under 5 were 584 in 1859, and only 372 the next year; a difference of 212, or 36 per cent.: and this irregularity, occuring just before the last census, would vitiate the enumeration as to that town. What happened in Nottingham, may have happened in a score of other towns and parishes.

It appears then that the authoritative mode of calculating the juvenile death-rates is far from perfect, in the absence of an annual census. This diminishes my regret that it is impossible to apply that mode to towns, without further data than we possess. The impossibility is caused by a want of harmony between the register and the census: the one giving the deaths in the *parishes*, the other giving the ages in the *boroughs;* and parishes being, in the absence of further information, incommensurable with boroughs. I know how many children there were in the borough of Liverpool at the last census: I do not know how many children died in the borough of Liverpool from 1851 to 1860.

It follows that another mode of calculation is necessary to ascertain the children's death-rate: this mode is to compare the deaths with the births. In places where the births and deaths were all accurately registered, and no migration went on, this mode would be perfect, and therefore preferable to the one founded on the census. As however, the registration is imperfect, and as young families are sometimes carried from one place to another, the results will be only an approximation to the truth, after every possible correction. This mode however, has one obvious advantage over the other, that it is not disturbed by the variations of births and deaths from year to year: it takes all the registered births and deaths during ten years, and it matters not whether these predominated in the beginning, the middle, or the end of the decennial period. Probably, for particular places, though not for the aggregate of the country, this birth-mode is more accurate than the decennial-census-mode.

At the head of columns 10 and 12, in the line for all England and Wales, I give the death-rate of male infants under 1, as $\frac{161}{1000}$: of male infants under 5 as $\frac{266}{1000}$. In the English life table (Registrar-General, XII, Appendix, 73) it is stated that of 513 male

infants under 1, 82 die the first year and 142 the first five years: making the death-rates respectively $\frac{160}{1000}$ and $\frac{211}{1000}$ against my $\frac{161}{1000}$ and $\frac{266}{1000}$; a difference of 1 in the one case and 11 in the other: the series of years however, not being the same in the two cases.

In the later reports, the epitome of results confounds all the first 5 years of life, a classification I regret. Besides this, the epitome is ambiguous, and to a casual observer quite unintelligible. If, *e.g.*, we turn to Report XX, xix, we find that in the 10 years 1847-50, the deaths of male children under 5 were $\frac{73}{1000}$. An inquirer, comparing this 73 with the 277 deduced from the Registrar's life table, is sorely perplexed. He supposes that the 73 is the average of 5 years of life, and that five times 73, or 365, represent the aggregate deaths; but 365 so much exceeds 277 that the conjecture is dismissed, and the volume is closed.

It is much to be regretted that the register should contain a table so hard to comprehend, and so liable to be misunderstood. I attribute partly to this ambiguous table, and to the reiterated statements of similar results in other parts of the reports, the gross exaggerations of sanitary reformers as to the deaths of young children. It was the duty of the Registrar-General, as I think, to explain the true import of this table, and to guard inquirers against the probable misinterpretation of it. But the language used in the register itself, confirmed the popular misapprehension, and even left it open to doubt, whether the Registrar-General himself did not share it. Thus, at XX, xx, under the head of "*Ages*," we see the words, "The mortality of males under 5 years of age was at the "rate of 73 in 1,000:" which I believe would be generally interpreted to mean that out of 1,000 children born, 73 die in each of the first 5 years, or 365 in all the first 5 years. Again at the foot of the table itself, there is the remark, "Of 100 males living of "the age of 35 and under 45," so many died: meaning that to 100 males *remaining alive* at the end of the year, so many died. The same equivocal notion in another form is to be found in an early report (IV, 17) where there are instructions how to calculate the death-rate; and where the number left alive is confounded with the number exposed to the risk of death. I trust that in future reports the Registrar-General will put inquirers on their guard against this ambiguity.

I have mentioned that in calculating the children's death-rates, a correction was required for the imperfection of the registers. Few bodies, even of the youngest infants, are buried without some public rites: registration follows of course. But many parents, through carelessness or procrastination, omit to register births. I conjectured formerly that this would happen especially in the case of illegitimate births; but two competent district registrars have assured me that, on the contrary, mothers anxiously register putative fathers, under the fallacious notion that they thus secure evidence of paternity. It is certain however, that the register of births is imperfect: a fact proved by comparing the registers with the census; the excess of births over deaths, the emigration and the immigration, with the decennial augmentation of numbers. We can only conjecture what is the proportion of omissions: but as I am unwilling to understate the children's death-rate, and as the larger the number of births the lower must be the death-rate, I have assumed that the omissions are at the moderate rate of $\frac{1}{40}$. I have made a deduction therefore, of $\frac{1}{40}$th, from all the figures in columns 10, 11, and 12, in Tables A and B, and of the corresponding columns in Table C.*

I may add that to save time, I took the births as well as the deaths of the 10 years 1851-60; though the infants that died in 1851 must, some of them, have been born in 1850; and though the children over 1 and under 5 must, all of them, have been born before 1851. In an increasing population, the births I have taken would be too numerous, and the death-rate therefore too low. I have consequently consulted my column that marks the rate of increase; and in each place for every 10 per cent. of increase, I have added to my juvenile death-rates, one-third per cent. in the case of infants, and 1 per cent. in the case of all children under 5. The death-rate of children over 1 and under 5 is found by subtracting one of these from the other:—column 10 from column 12.

After all the care I have taken, I know that my figures cannot be regarded as accurate; but I do hope they are sufficiently near the truth to indicate the *comparative* mortality of different places: and even if my juvenile death-rates should prove to be $2\frac{1}{2}$ or 5 per cent. too high or too low, such a divergence would not invalidate my principal inference that the juvenile death-rates have been grossly over-stated by sanitary reformers.

Column 10; *results.*—I will now mention some comparative results. As to male infants under 1, the highest death-rate is that of Liverpool parish:—240: against 161 of all England and of London. The next highest are Coventry 224; Nottingham 223; Manchester parish 220; Leicester and Preston 212; Norwich 208; Leeds parish and Oldham district 206; Blackburn district and Bradford district 205; Stockport district 204; Wolverhampton

* Since I read this paper, the third volume of the Census has appeared; we learn from it (p. 6) that the excess of unregistered births over unregistered deaths is about 5 per cent. of the births. My argument as to infantile deaths, is all the stronger. I have altered my tables in the appendix by deducting a second one-fortieth from the figures in columns 10, 11, 12, and by calculating column 13 afresh.

district 203; Yarmouth 202; Hull parish 201; Sheffield parish 196; Bolton district 194; Birmingham parish 189. The favourable cases are those of Portsmouth 147; Cheltenham and Chester district 156; London and Bath (as all England) 161; Derby 172; Brighton and Gateshead 174; Plymouth 175.

Columns 11 and 14.—Column 11 gives the death-rate of children over 1 and under 5. The most singular fact it reveals, is the large number of such deaths in London, when compared with the moderate mortality of infants: a fact I have already noticed. Whereas the London death-rate of infants under 1 is the same as that of all England, the London death-rate of children over 1 and under 5 is higher than that of all England by 30 per cent.: it is as 137 to 105.

Why should London infants be healthy, and London children past infancy be very unhealthy? Is it the impurity of the air? Surely that would injure infants more than others. It cannot be the want of domestic care, or of medical attendance; for if so, why should the infants escape? I conjecture that it is the want of space, and the consequent confinement of the children to the house or room in which they live: a circumstance not so injurious to infants, comparing them with infants of the same class in society elsewhere, because as they cannot run about, they are everywhere confined to the same room as their mothers.

If indeed, we satisfied ourselves with glancing at the density of the populations, as exhibited in my column 3, we should dismiss this opinion: since London appears there as having twice the space per head that Birmingham has; and three times the space that Liverpool has. But we know that Liverpool and Birmingham in the register, are the town parishes with all the suburbs cut off; while London includes Chelsea, Hampstead, Woolwich, and Sydenham. To make a fair comparison we must go to my Table C, of the different London districts; and then we shall see that Marylebone, the Strand, Whitechapel, the City, and other districts, are at least as much crowded as the parish of Liverpool. Besides this, the streets of these parts of London being narrow, are so filled with horse and foot passengers, that children are almost excluded from them.

Now of late years, nothing has been more clearly proved and more strongly brought into relief, than the necessity of open-air exercise, and the fatal effects of living under cover. Scavengers, we are told, are a healthy race: and the only explanation offered is, that the impurities they inhale are more than neutralized by the open air in which the men work.* The successful treatment of the insane,

* I am aware of the statement that the effluvia from animal ordure, even when fermenting, are generally innocuous.

takes out-door exercise as its basis. Mr. Neison, in his vital statistics, infers from his study of friendly societies, that the superiority of health in rural populations is not caused so much by greater purity of air as by labouring in the open air: since small shopkeepers and other sedentary persons in the country, have no great vital superiority over the same classes in towns; whereas the farm labourers who work out of doors attain, notwithstanding wet and rheumatism, much greater longevity than mechanics who work behind glass windows.

It is no wonder then, that London children, cooped up in part of a house, set maternal care and medical attention at defiance, and die by thousands. Persons who have lived in the great provincial towns, and have driven or ridden through the streets, are familiar with the annoyance caused by the swarms of children who turn the thoroughfares into playgrounds. Occasionally, a poor child is killed or maimed for life: but for one child thus cut off, a hundred probably, have their constitutions strengthened, and their lives saved from disease.

An inference too, may be drawn in favour of the practice of having a separate house for every family, as distinguished from model houses with a family occupying each story. The young children living on the flats above the ground floor, cannot be constantly running out of doors. Model houses, furnished with every other convenience, still lack the playground.

In some towns, the cheap houses are seldom built fronting the street: they are placed in yards and courts. These often look confined, sunless, and dismal; but they have this advantage, that they are safe playgrounds.

While I was writing this paper, there arose a painful discussion as to the sanitary condition of the children of Bethnal Green: and grave allegations were made as to diseases prevailing. As far as I know, no one thought of appealing to the Registrar-General about the juvenile death-rate: a proof I think, that the experience of a quarter of a century has failed to establish Somerset House as the ultimate authority in questions of mortality.

The last line of my Table C gives many particulars of Bethnal Green. We find that the population is dense, but not so dense as in many other parts of London: that the increase of population from 1851-61, and the number of persons in a house, were rather lower than those of all London: that the general death-rate from 1851-60 was considerably lower than that of all London; and that the male death-rate (the true test) was lower than that of all London. Bethnal Green appears to have very few female servants; for its whole excess of females over males is only $3\frac{1}{2}$ per cent., against 5 per cent. in all England and nearly 15 per cent. in all

London. But notwithstanding this, the number of persons in a house is large. Considering therefore the class who live there, and the considerable density of population, the death-rate is rather remarkably low.

The outcry however, was principally about the condition of the children. The leading fact was, that many of the children, failing other play places, ran among the pigstyes and contracted a loathsome skin disease. Consulting my columns 11, 12, and 13, of Table C, I find that the death-rate of infants under 1 year is singularly low; being 5 under that of all England and of all London; while that of Liverpool parish is higher by one-half (240 against 156). But under 1 year old, children cannot run among the pigs. When I come to the ages over 1 and under 5, the evidence of the figures confirms the medical testimony; for the death-rate, instead of being low as in the case of infants, is no less than $\frac{139}{1000}$, which is actually one-third higher than that of all England, though scarcely higher than that of all London, and less by a-third than that of Liverpool parish.

Healthy infancy, and sickly childhood: this combination surely, cannot mean impure air or maternal and medical negligence: it must mean want of space for the open-air sports of children. The great sanitary want of London, as it seems, is not better drainage, or burning of smoke, or better houses, so much as juvenile playgrounds within reach of every house. London does not want the *Crèche* of Paris, which in manufacturing towns, or in Liverpool, might save thousands of infants: it wants a Lisbon earthquake, or a Stuart fire, to give the opportunity of re-construction and extension. It does not want close infant schools, but children's open-air play-places.

But do these columns give similar results in other places? They certainly do in the case of the City of London. Its general death-rate judged by column 8, which includes a fair proportion of deaths in public institutions, is lower than that of all London: its infant death-rate is apparently low, though many infants may be sent elsewhere to die: its children's death-rate (over 1 and under 5) is higher even than that of Bethnal Green, besides the children that may die elsewhere; it is therefore, higher by more than a-third than that of all England. One comparison here is a striking one. In all England, more children by one-half die in the first year than in the four following years together: in the city, more children die in these four years together than in the first year. The column 2, of density of population, appears inconsistent with these results; for the area of the city is greater per head of population, than the area of Bethnal Green; in the proportion of 95 to 72. But besides the space taken up with public buildings, warehouses, and crowded streets, there is a large deduction to be made for the area of the part of the Thames included within the city boundaries.

Going to other towns, we find that Liverpool parish even exceeds London in its *proportion* of children's mortality to infantile mortality, while its *absolute* juvenile death-rate is far higher. The deaths of infants (under 1 year) out of 1,000 births, are in London 161, in Liverpool 240, or one-half more: the deaths of children (over 1 and under 5) out of 1,000 births, are in London 137, in Liverpool 227, or considerably above one-half more. The proportion of children's deaths to infantile deaths, is in London 85 per cent., in Liverpool 95 per cent.; being for all England only 65 per cent. It may seem unfair to compare the parish of Liverpool, with the whole of London; but if the comparison is made with either the City of London or with Bethnal Green, matters are not much mended. Then comes the question whether this prodigious death-rate of children in Liverpool parish is accompanied by great crowding of the people. I answer that it is so. The area per head in the parish of Liverpool is about one-third of that of London: it appears better than that of Bethnal Green, but the water included in the case of Liverpool makes its land area less than that of Bethnal Green, by about one-fifth (viz. as 58 to 72).

Birmingham parish at first sight points the other way. The density of its population is high, as compared with that of other large towns; though it is less than half that of Liverpool, water being allowed for; nor is it anything near that of the London districts. It is undeniable also, that nearly every family has a separate house; and that the courts and streets furnish plenty of playground for the children. The death-rate of infants is higher than that of Bethnal Green by one-fifth; the death-rate of children (over 1 and under 5) is about the same as that of Bethnal Green: the Birmingham ratio therefore, is much lower, and neither contravenes the law, nor strongly supports it.

In Table B, column 14, I give for each town, the ratio of children's death-rate to infantile death-rate. After Liverpool come Plymouth and Portsmouth, each with a high ratio, though the density of the population is not great, even allowing for the water included in the area. Plymouth and Portsmouth therefore, do contravene the law. It is remarkable that both these are, like Liverpool, seaports.

If the law exists, the ample spaces for playgrounds in rural districts, ought to reduce the ratio far below that of towns. My Table A, of counties, is not one of rural districts only, but takes the counties including the town populations. The ratio in question therefore, ought to be lower than that of towns, but not so much lower as if the rural districts only were given.

I find then, that for every 100 infantile deaths, there are in the three worst counties 75 children's deaths: but thirteen towns have a ratio as high or higher; and instead of merely 75, Liverpool has 95, Plymouth and Portsmouth have 87, and London has 85. Again, three counties have a ratio as low as 44, while the best town on my list has 51. These facts are quite consistent with the supposed law.

Recapitulation of B.

I will now sum up the results of my remarks on Table B, of towns. Comparing the two decennial periods of 1811-50 and 1851-60, there has been a marked decrease in the death-rate of several towns: especially of Hull, which fell from 31 to 25; and of Liverpool, which fell from 39 to 33; making a decrease of 6 in each case. But in both these towns, the high mortality of the earlier period was exceptional; having been caused by frightful visitations of cholera, aggravated in Liverpool by the Irish famine and the consequent Irish immigration of dying persons. Manchester also, has a diminution of 1½ in the 1,000, and London of less than 1: perhaps these two improvements may be permanent. In Birmingham the death-rate was a shade higher in the latter period; though a large sum had been spent in drainage, and many nuisances had been removed. As no cholera was ever known there, the comparison of the two periods is a more satisfactory one than that of London and of Manchester, and still more than that of Hull and of Liverpool. Bradford district was worse during the second period, notwithstanding great efforts at improvement. Some other towns exhibited a slight deterioration, many others a slight improvement.

On the whole it appears that the large outlay on drainage and purification, has done nothing like what it gave promise of twenty years ago. I am therefore, brought to think that causes other than an impure atmosphere, must be assigned for the painfully high death-rate found in great towns. In the case of the men, and partly of the women, one cause is the working under cover instead of in the open air: another doubtless, is the expenditure of high wages in coarse pleasures, unchecked by a knowledge of the laws of health. In many towns the undue employment of mothers causes the deaths of many infants: in all, but especially in London and Liverpool, the want of open-air amusements is answerable for the deaths of many children who had survived infancy. Unfortunately, these mischiefs are incapable of speedy correction. Ten years, and so many millions of outlay, would reform the whole drainage of the kingdom: but a generation will not do much to alter the habits of the nation; and a century will not, as far as we know, banish glass windows from workshops, and turn cotton-spinning into the open air.

I have contended that for the purpose of comparison, the male mortality is the most important. The adoption of this, and of several other necessary corrections, would modify materially some of the Registrar-General's conclusions.

Of the very large towns, Birmingham stands next to London in *recorded* healthiness: the two having death-rates of 24 and 26½ respectively. The necessary corrections, I believe, show that Birmingham is the healthier of the two. The difference in the male death-rates is 2·35; but this is for Birmingham parish, compared with the whole of London, including Hampstead and Sydenham. The difference in the male death-rates of London and the borough of Birmingham is less than 1 (·71). Again, London has a far larger proportion of affluent and educated persons than any manufacturing town has. Column 9 of B shows that London has probably three times as many domestic female servants, and therefore at any rate twice as many affluent families. Now by taking in the surburban parts of the borough of Birmingham the death-rate is reduced by more than 1½: by doubling these affluent and educated parts, the death-rate would be reduced a second time by 1½; at once turning the scale against London. Nor is this all. We ought to compare not only class with class, but also age with age. An infant asylum however healthy, will have twenty times as many deaths as a public school of equal numbers. A fast increasing town faintly resembles an infant asylum; London, which increases less fast, faintly resembles a public school. On this principle, according to my calculations of specific mortality eight years ago, a reduction of $\frac{1}{1000}$ should be made in the death-rate of Birmingham as compared with that of London.

The comparison will then stand thus:—

	London.	Birmingham.
Recorded mortality	24	26½
„ of males	25·70	28·05
„ „ in the borough	—	26·41
Deduct—		
1. On supposition that Birmingham had as many affluent families as London 1·61	—	2·64
2. For excess of juvenile population 1·00		
	25·70	23·77

This account, if it be correct, shows that whereas according to the register, Birmingham has a death-rate higher than that of London by 2½, it has really a lower death-rate by 2. An alleged

difference of $4\frac{1}{2}$ in the 1,000, say one-sixth of the whole, is startling enough, but I believe my statements to be correct.

As to juvenile mortality I need scarcely recapitulate what I have said. I have given my reasons for believing that there has been great exaggeration as to the deaths of children in towns; and I have attributed this error in part to the fallacious mode of stating the death-rate from those left alive instead of from all those exposed to the risk of death. I have also given the reasons for my conjecture that it is not impurity of town air so much as want of open air that multiplies the deaths of children.

III.

TABLE C.

There is a striking paper on the subject of mortality, in the "Social Science Transactions for 1860," pp. 632—618. It was written by Dr. Gairdner, an eminent Edinburgh physician; and he arrives at these startling conclusions:—First, that in unhealthy places, not only do infants die faster than in healthy places, just as adults do; but that unhealthy places are more fatal to infants than to adults; (*see* pp. 633—635 and 614): Secondly, that agricultural counties, and particularly the great corn-growing counties, are fatal to infants (pp. 610, 614): Thirdly, that the west-end of London has an unduly high death-rate of infants under 1 year (p. 618). My three tables will enable me I believe, to dispose very shortly of these three propositions.

I. The first is, that as a place increases in mortality, children suffer more than adults. Now the most unhealthy considerable place in England is Liverpool: its male death-rate is $\frac{35 \cdot 23}{1000}$; something *more* than 50 per cent. worse than that of all England: its male infant death-rate is $\frac{216}{1000}$; something *less* than 50 per cent. worse than that of all England: in Liverpool therefore, infants suffer less, and not more, than adults. If the proposition had referred to children over 1 and under 5, Liverpool would, as far as it goes, have been on Dr. Gairdner's side.

But to fully investigate the question, I will refer to column 13 of my two first tables, A and B; and we shall there find the proportion between the male infant death-rate, and the male general death-rate, for every county and principal town: my figures, it will be found, contravene Dr. Gairdner's opinion. For in Table A, the highest proportion of infant death-rate is in Bedfordshire, Cambridgeshire, Lincolnshire, and Northamptonshire; and in none of these is the general death-rate high: in Table B far the highest proportion is in Coventry; then come Norwich, Oldham, and Leicester; but in all four places the general death-rate is decidedly under that of Liverpool, Manchester, Leeds, and Sheffield. I have selected these

cases; but a further inspection of my columns will justify my disbelief in Dr. Gairdner's statement.

II. The second proposition is, that agricultural counties generally, and corn-growing counties especially, have a high infant death-rate: and this, not merely in comparison with the general death-rate of the same counties, but in comparison with the infant death-rate of other counties. The counties in which the agricultural population predominates over the town population, can be readily found by my column 4 of Table A: the most remarkable are North Wales, South Wales (each regarded as one county), Westmoreland, Essex, Herefordshire, Huntingdonshire, Rutlandshire. In these, with one exception, the infant death-rate is either low or very low. The exception is Huntingdonshire, which as we are told, has many persons engaged at home in manufactures, and which therefore, is not really agricultural, but resembles those counties in which towns prevail. Dorsetshire and Somersetshire, also, have a prevalence of agriculture and a low infant death-rate. I conclude that the second proposition, as far as agricultural counties are concerned, is unfounded.

As to the corn-growing counties the case is not so clear, though I have no means of determining exactly which counties come under this denomination. If Lincolnshire, Norfolk, Suffolk, and Cambridgeshire are fixed on, it is true that these except Suffolk have a high infant death-rate, as compared with that of the other agricultural counties I have mentioned. But then they are situated on the eastern side of the island, and have generally a marshy character. It is open to great doubt whether corn-growing has anything to answer for. The probability that climate is a predominating cause is strengthened by the fact, that a low infant death-rate prevails in the five south-western counties, Devon, Somerset, Wilts, Cornwall, and Dorset, to say nothing of the southern Hants. I conclude as to this second of Dr. Gairdner's propositions, that half is untrue and the other half unproved.

III. The third proposition is more startling than the other two: it is (pp. 616—618) that the west-end of London is fatal to infants; fatal both absolutely in the number of deaths, and comparatively with the adult deaths in the same locality. My reply is that Dr. Gairdner's table and mine are quite at variance. We agree pretty nearly, considering that we take a different period, as to Hampstead and Lewisham; but as to St. George's Hanover Square, Marylebone, and other districts, there is a difference of a-fourth or a-fifth; a difference so considerable, that if it had occurred in all the districts, it would have led me to believe that this infant death-rate had been calculated from those left alive instead of from those exposed to the risk of death. Dr. Gairdner's special warning is founded on the

case of St. George's Hanover Square, a district that consists of "Hanover Square, May Fair, and Belgrave." Any close examination of the statement is unsatisfactory: partly because though written in 1860, it is founded on the mortality so far back as 1838-44, the latest period of any detailed calculations by the Registrar-General: partly because the general mortality of the district, fell in the last decennial period from 24 to 21: lastly, because the distribution of hospitals and workhouses over the metropolis, makes minute comparison impossible. All I can say is, that my figures, as they stand, make the male infant death-rate for St. George's Hanover Square, very low; for a town district singularly low; lower by 9 per cent. than that for all England; lower by nearly two-fifths than that of Liverpool; lower than that of any town in my list B except Portsmouth. If indeed, Dr. Gairdner had extended his inquiry to the case of children over 1 and under 5, he would have found that this west-end district has the fatal peculiarity I have discovered in the City and in Bethnal Green, though not in the same degree. It is not against infants, but against young children past infancy, that Hanover Square sins; but the evil is less than that of the other London districts I give, with the exception of Lewisham and Hampstead, which belong to the country rather than the town.

But if the case were worse than it is as regards children past infancy, the inference would be quite different from that to be drawn from a high infant death-rate. In this latter case one might attribute the mischief to the custom of employing wet nurses, and generally to maternal neglect; but as to children past infancy, it seems more probable that the want is rather of gardens and playgrounds in which the children might live out of doors as they would in the country; a want only partially relieved by a morning and afternoon run in the parks.

I have mentioned the complication caused in the London districts by the irregular distribution of workhouses and hospitals. West London is an extreme case. The general death-rate appears to be $\frac{45}{1000}$: it is really only 24, as appears from column 8. The explanation is that it has St. Bartholomew's Hospital within its boundaries, and that the deaths there, added to those in the workhouse, are more than half the deaths of the district. I do not mention this obvious correction as any new discovery. The register furnishes the number of deaths in these institutions; I wish it also distinguished the sexes and ages; as for want of this classification I have been unable to correct my Table C so as to make it of much value.

As regards Dr. Gairdner's statements therefore, I conclude that they are unfounded. It turns out that, if my tables are correct, unhealthy places are not more fatal to infants than to adults: that the infant death-rate is not high in agricultural counties: that it is not high at the west-end of London. It does seem that that rate is high in some corn-growing counties, but it seems as probable that this is caused by damp and bleak situation as that it is caused by maternal neglect.

Changes Wanted in the Register.

In the course of my remarks, I have pointed out what seem to me defects in the Registrar-General's reports, as well as certain additions which I regard as desirable. I will briefly recapitulate these.

First, the register should be so complete in itself, as to enable any competent person to calculate the death-rates for any parish, town, or borough, and for either sex, without referring to the census. It should also be so arranged as to give every possible facility to casual inquirers; and for this end there should be prefixed notices and instructions, with examples. The form of the register is generally excellent; but it would be advantageous if in all parts a space were left after every five lines of figures. The table given several times, and for example, at XX, xix, requires explanation; readers should be told what it does and what it does not indicate. The first year of life too, should be given separately.

Most of the other changes have reference to towns; but in the counties there is one much wanted: I mean where a border place is carried out of its own county: notice of such an irregularity should be given at the head of each county; the preliminary instructions should mention that such changes in topography occur: and the general index should be extended to sub-districts.

I have shown that the information about towns is very defective: that in the greatest towns the parish stands for the borough, although it may contain less than half the population, as in Bristol; and although such a statement may much exaggerate the death-rate, as in Liverpool from 1841-50. The remedy is not obvious. It is undesirable to increase the difficulties of reference and comparison by disturbing the present form and uniform paging of the register. Probably the best way would be to add to the decennial volume which follows the census, full particulars of every *borough*, with numbers of births, marriages, and deaths, and the rates per 1,000 of each of these.

The index wants large additions. Many towns, Chester and Leamington, *e.g.*, do not appear in it, because they happen not to be separate districts. Every sub-district should be given.

There is another signal deficiency. The report supplies us each

year with the proportion of men and of women who sign the marriage register; but this is given only for each county and for London. This important information as to the state of education in the towns is entirely withheld from us.

In the London register notice is given in each district of the number of persons that die in hospital, workhouse, &c. In "West "London" half the deaths are thus accounted for. The same should be done for other towns, that each sub-district may be judged of fairly. Notice should also be given of every case in which any public institution is situated outside a borough; and the number of extruded deaths should be stated, with sex and age.

In London, this notice, H, W, &c., should be repeated in every page where the number of deaths is given. And what is of greater importance, the sexes and ages should be given at pp. 83, 84.

Decennial Volume.

But of all improvements the greatest would be the compilation of a good epitome of results once in 10 years, after the census has been taken.* The present epitome is feeble and lame. An elaborate series of tables was given in 1816, of results for the years 1838-41; *i.e.* for seven years taking the census year 1841 as the pivot. Since that time the Registrar-General's statistical zeal has cooled, and the calculation of results has been left to the irregular efforts of individuals, who are quite unable to accomplish it fully. After the lapse of 18 years it is time that a new official effort should be made.

No doubt, in the decennial epitome, as for example in Vol. XXIII, there is a summary of the registers of the 10 years, but it is a mere summary, unaccompanied with any results. We have the marriages for each of the 10 years, and for all together: we have the population for 1851 and for 1861; from these data any competent person may calculate the marriage-rate. But in my opinion the rate should be added; for each county, each borough or town, each district and sub-district. This column of percentages would be useful for reference by the authorities of any place: it would be highly useful for inquirers who desire to compare place with place, and who find that to make the calculations themselves would require the devotion of their life to this one pursuit. Who has time and patience to calculate the marriage-rates in 21 pages of 50 or 60 lines in each? The same question may be asked as to the births: and as to the deaths, these occupy 100 pages of districts and sub-districts. I ask therefore, that the decennial volume should have the *rates* of births, marriages, and deaths, added to the *absolute numbers*.

I do not ask for an annual column of percentages: for as I have

* I am glad to hear that such a volume is being prepared.

shown in the case of Bradford,* no enumeration is to be relied on but the census; and the assumption of an uniform rate of increase will often prove untrue.

It is especially to be desired that the decennial volume should give the rates for boroughs: not, as in the annual returns, setting down a parish for a borough in one case, and a district for a borough in another.

These rates too should be given in each decennial volume, for 1811-50, for 1851-60, and hereafter for 1861-70: and this for counties, boroughs, and other divisions. An estimate of progress or retrogression would then be easy.

The decennial columns of population should distinguish males and females. At present we have the male deaths and the female deaths; but we can get the male population and the female population only by going to the census.

Then we want a summary for the 10 years of the deaths at different ages. At present, to ascertain the decennial deaths of young children for any county or town, we have to refer to ten reports, extract the figures and add them together. The summary should be accompanied with a percentage column, calculated in either of the two modes I have pointed out. If the census mode is adopted, the calculation should be made from all exposed to the risk of death, and not from those remaining alive. If the birth mode is adopted, the needful corrections should be made, and the principle of the correction should be stated. To me it would be more satisfactory if there were two columns, one for each mode. In this case, the number of births, and the population at each age and for two censuses, should be stated.

The sub-districts should be treated in the same way. Since places like Leamington and Chester are ranked as sub-districts, these minor divisions ought, once in 10 years, to have an opportunity of knowing their condition: and indeed every town or parish however small, is entitled to the same information.

The life tables at present, are for ordinary persons almost inaccessible, with no note to mark the volume and page in which they are buried. The male table is in one place, the female in another. The decennial volume should contain a life table, of males and females, whether a new one or a repetition of the old one. Every annual report should state where the life table is to be found.

A summary of the 10 years' deaths in hospitals and other public

* The Bradford statement was suspected by a disinterested authority. Mr. Winder, Assistant Commissioner, said in 1859, that the Bradford population was estimated by the municipal authorities at 130,000; but that after looking at the calculations, if the authority had not been so high, he should have been inclined to suspect that the estimate was too liberal. (Education Commission 2, 179.)

institutions should be given. The sexes and ages should be distinguished. This should be done for the country generally, and not for London only.

These are the principal additions which have occurred to me as desirable in the decennial report. But many others might probably be found by consulting other students of the registers.

Instructions Wanted.

On first opening one of the reports, the reader is bewildered with the multitude of particulars: he wants a guide to point out his way. A stereotyped preface should be given to each volume, and especially to the decennial volume. The rules for calculation should have examples added.

The following is some of the instruction required. "England" means "England and Wales." The Registrar-General has adopted the districts of the Poor-Law Board, and therefore does not strictly observe the geographical boundaries of counties. For example, Berkshire takes from its neighbours, 30,000 persons. Border places therefore, will often be found in adjoining counties. The index does not contain sub-districts.

The register takes no notice of boroughs, because *the poor-law* has no concern with them: Liverpool and other great towns are represented by parishes of the same names: Bradford and similar towns are concealed in districts of the same names. An ingenious and patient accountant may extract approximate statistics of the boroughs, with the help of the census. An example may be found in the *Statistical Journal* of June, 1861, pp. 188, 189.

Sub-districts.—Some places of considerable importance are ranked as sub-districts, *e.g.*, Leamington is part of the district of Warwick: Chester is merged in Great Boughton, and appears partly as Chester Castle, partly as Chester Cathedral, two minor divisions which do *not* together agree in numbers with those of Chester.

Calculations of rates.—The death-rates in the register, at XX, xix, for example, are calculated by a comparison of deaths with persons left alive: *e.g.*:—if the whole deaths of a particular year are set down as 22, this means that 22 have died to every 1,000 persons left alive. But the number exposed to the risk of death was $1{,}000 + 22 = 1{,}022$; and the true death-rate was $\frac{22 \times 1{,}000}{1{,}022} = 21{\cdot}53$.*

In juvenile deaths the irregularity is much greater: *e.g.*:—if 360 children die in the first five years, this means that 360 have died to every 1,000 left alive. But the number exposed to the risk of death was $1{,}000 + 360 = 1{,}360$; and the true death-rate was

* This, I believe, is strictly true, only on the supposition of a stationary condition of population and of uniform ages.

$\frac{360 \times 1{,}000}{1{,}360} = 265$. That is, out of 1,000 children born, the number who die in the first 5 years is 265, not 360. This ought to be explained in the Register.

The life tables are not given in each volume, nor in the decennial volume: nor is the female table given with the male. There is one life table at IV, 23: another of males at XII, 73, and one of females at XX, 177.

Calculations of percentages require experience and care. The returns of one or two years, and an estimated population for any particular place, may lead to grave errors, as will be seen in the case of Bradford, given in the "Social Science Transactions for 1862," introduction, lii. The returns for the 10 years between one census and another are the only safe data, as the average population for such periods is known. Summaries of the returns for the 10 years are partly furnished: other summaries must be obtained by consulting the separate volumes for each year. For 1851 to 1861 the summaries given will be found in Vol. XXIII, pp. 174—327:—viz., the summary of marriages at districts at p. 174; of births in districts at p. 196; of births in sub-districts at p. 240; of deaths in districts at p. 218; of deaths in sub-districts at p. 240. No summary is given of marriages in sub-districts. This can be obtained by consulting the volumes for each year: and the same is true of the deaths at different ages.

The population of each place for 1851 and 1861, according to the conventional boundaries assigned by the Poor-Law Board, will be found in the summary at XXIII, 174, &c.; the acreage at p. 2, &c.; the male and female population are not given separately, but will be found in the census.

In making calculations as to the London districts, the hospitals and other public institutions must be taken into account. They are irregularly distributed; the City, *e.g.*, having none. All the districts that have such institutions are marked H, W, &c., in the 10 years' summary, but not in the annual reports. Each annual report contains, at pp. 83, 84, the number of deaths in these institutions during the year: but no 10 years' summary is given. Outside of London, no such institutions are marked in the districts; the sub-districts however, have the workhouses marked, but no other institutions.

No extensive calculations of percentages are added to any of the late reports; but some important ones deduced from the early reports, will be found in Vol. IX.

Forms of Calculation.

To find the death-rate of any place.—Add together the population of 1851 and 1861 (not according to the census, but according to

Registrar-General, XXIII, 218, &c.): half the total is the average population. Find the 10 years' deaths (Registrar-General, XXIII, 218, &c., for districts, 240, &c., for sub-districts): multiply by 100 and divide by the average population.

Example.—Bedfordshire, p. 218.

Average population, $\frac{129,805+140,479}{2}=135,142$

Number of deaths 28,170.

Death-rate during the 10 years, $\frac{28,170\times100}{135,142}=20{\cdot}85$.*

To find the male death-rate.—Refer to the Census I, 101, &c., for population of 1851 and 1861: half the total of the two will be the average. The summary of male deaths in districts is given by the Registrar-General, XXIII, 218: no summary in sub-districts is given, but it can be collected from the separate volumes. Multiply the 10 years' deaths by 100, and divide by the average population.

To find the juvenile death-rate of any place.—The number living at any age must be found in the census. In boroughs the numbers are given for the whole borough: and as the Registrar-General knows nothing of boroughs as such, any calculation for boroughs by this mode is impossible. For places which are not boroughs one caution is necessary. To ascertain how many children die out of 1,000 who are born, the calculation must be made by a comparison of all who die and all who have been exposed to the risk of death. *E.g.*: if the census gives 1,000 as the number of children under 5, living in a certain place; and if the annual deaths under 5 have been 350, the number who have been exposed to the risk of death is 1,000+350=1,350. The death-rate will be $\frac{350\times1,000}{1,350}=259$.

Another mode is to compare the *births* with the deaths; making an allowance of 5 per cent. for excess of unregistered births over unregistered deaths. The deaths will be found in each report p. 98, &c.: the births for the 10 years are summarised in XXIII, 196, &c., and 240, &c.

Example.—If a place has annually 1,350 registered births, and 350 registered deaths annually under 5 years, the death-rate will be $\frac{350\times1,000}{1,350}=259$, subject to a deduction of 5 per cent. for excess of unregistered births over unregistered deaths.

These are the instructions which have occurred to me as examples. Others should be added as to marriages and births. By consulting different inquirers the list might be made complete.

* My Table A gives 20·78 and is taken from Registrar-General, XXIII, xiv. I explained before that the Registrar's averages are slightly altered by taking the intercalated years into his account.

I have now finished the task I have undertaken, of first, explaining my three tables, column by column; and then briefly collecting my practical inferences under a few heads.

NOTE.—While was I revising the proof of this article, I became acquainted with a House of Commons Return, "Deaths," ordered 21th July, 1863. This paper has enabled me to test the accuracy of some of the figures in my appendix, as to which I have expressed fears that errors would be found among them. My column 7 of Table B, and my column 6 of Table C, contain a set of figures, which appear in the Parliamentary Return. I am glad to find that I am acquitted of any error of even slight importance.

The column, "At less than 1 year of age—All Causes,"—throws light on the most difficult question in my paper. The total infantile deaths, male and female, are set down as $\frac{177}{1000}$. This means that there were 177 deaths in proportion 1,000 infants *left alive:* I contend that it would be far more perspicuous to say that there were 177 deaths out of 1,177 infants exposed to the risk of death; and that therefore the true infantile death-rate was $\frac{150}{1000}$.

My infantile death-rate, at A, column 10, line 1, is 161; but this is for *boys* only: for boys and girls my rate would be 147, *i.e.*, 3 less than the 150 in the Parliamentary paper.

Considering that my calculation is made from births, while the other is made from the enumeration of two censuses, the difference of $\frac{3}{150}$, or 2 per cent., seems very small. This confirms me in my opinion that my proposed amendment, though not theoretically true, leads to a correct result in the present condition of the register.

APPENDIX.

TABLE A.—*Vital Statistics of each County in England and Wales in the Two Decades, 1841-50 and 1851-60.*

1 Population, in Thousands, 1861, by the Census.	2 Population, in Thousands, 1861, by the Registrar-General.	Registration—Counties, &c.	3 Number of Acres to each Person.	4 Rural Population in Proportion to Town Population.	5 Increase of Population per Cent. in 10 Years by Census.	6 Number of Persons in a House.	7 Death-rate, 1841-50, to 1,000 of Population, Registrar-General, 13, 191.	8 Death-rate 1851-60, Registrar-General, 23, xiv.	9 Male Death-rate, 1851-60, Registrar-General, 23, 218, and Census, 191.	10 Male Death-rate under 1 Year to 1,000 Births, Registrar-General, 14 to 23, and 23, 196.	11 Male Death-rate from 1 to under 5 Years. (Total of 4 Years.)	12 Male Death-rate from Birth to under 5 Years. (Total of 5 Years.)	13 Proportion of Male Death-rate under 1 to General Male Death-rate.	14 Number of Male Deaths in the 4 Years, over 1 and under 5, in Proportion to 100 Male Deaths under 1.	15 Rate of Farm Wages, 1860, *Statistical Journal*, xxiv, 328.	16 Number of Women per Cent. who sign Names to Marriage Registers, Registrar-General, xxiii, vi.
															s. d.	
20,066	20,066	England and Wales	1·86	—	11·03	5·37	22·23	22·21	23·05	161	105	266	7·00	65	*s.* —	63·8
112	2,804	London	·0279	—	18·70	7·8	24·55	23·77	25·70	161	137	298	6·26	85	—	81·4
135	140	Bedfordshire	2·18	2·10	0·	4·03	21·65	20·78	21·30	172	85	257	8·08	49	10 3	51·8
176	206	Berkshire	2·56	1·57	4·	4·93	20·11	20·21	20·53	135	78	213	6·57	58	10 8	75·8
168	147	Buckinghamshire	2·78	1·56	3·	4·81	21·43	20·82	20·65	154	77	231	7·45	50	No return	65·0
176	182	Cambridgeshire	2·98	2·18	minus 5·	4·68	21·54	20·55	21·33	172	86	258	8·06	50	10 –	65·5
505	470	Cheshire	1·39	·76	11·	5·16	23·14	22·49	23·28	170	101	271	7·30	60	11 8	54·9
369	365	Cornwall	2·37	2·68	4·	5·06	18·97	20·41	21·43	139	89	228	6·49	64	10 6	56·9
205	205	Cumberland	4·87	1·30	5·	5·06	21·10	20·81	21·45	139	87	226	6·48	63	15 –	66·4
339	294	Derby	1·04	2·21	15·	4·90	21·24	21·71	21·69	156	88	244	7·19	56	12 –	61·5
584	589	Devonshire	2·83	1·11	3·	5·76	19·69	19·77	20·74	130	95	225	6·27	73	9 2	72·6
189	182	Dorsetshire	3·35	2·03	2·	5·01	19·56	19·35	19·71	132	79	211	6·69	60	9 4	71·0
509	542	Durham	1·22	1·07	30·	6·	22·41	23·30	23·29	164	111	275	7·04	68	14 3	57·8
405	380	Essex	2·62	3·48	10·	4·98	20·19	20·18	20·44	145	84	229	7·09	58	11 3	69·1
486	444	Gloucestershire	1·66	·83	6·	5·23	21·96	21·11	22·13	149	94	243	6·73	64	9 5	73·2
482	457	Hants	2·22	1·09	19·	5·57	20·23	20·26	21·01	130	93	223	6·19	71	12 –	76·1
124	108	Herefordshire	4·32	3·38	7·	4·89	20·81	20·28	20·67	137	67	204	6·63	49	9 –	71·1
173	177	Herts	2·25	2·89	4·	4·97	20·18	18·93	19·43	139	73	212	7·15	52	10 –	66·6
64	59	Huntingdonshire	3·57	3·34	·1	4·69	21·85	19·69	20·56	164	74	238	7·98	54	10 9	67·9
—	545	Kent (*extra metropolitan*)	1·4	·78	19·	5·81	20·58	20·11	20·75	141	88	229	6·79	62	12 –	75·9
2,429	2,465	Lancashire	·5	·44	20·	5·54	27·52	26·30	27·44	192	144	336	6·99	75	12 7	45·9
237	244	Leicestershire	2·16	1·37	3·	4·58	21·69	21·86	22·43	175	93	268	7·80	53	13 6	66·3
412	404	Lincolnshire	4·31	2·23	1·	4·76	19·65	19·47	19·75	159	70	229	8·05	44	13 –	72·3
—	187	Middlesex (*extra metropolitan*)	·08	·19	17·	7·90	19·44	20·67	21·76	141	92	233	6·48	65	No return	80·1
175	197	Monmouth	2·11	2·32	11·	5·28	22·64	22·58	23·36	151	113	264	6·46	75	11 8	48·9
435	427	Norfolk	3·12	2·34	minus 2·	4·50	20·97	21·20	21·94	174	76	250	7·93	44	10 7	70·0
228	231	Northamptonshire	2·77	2·38	7·	4·69	21·51	21·26	20·99	169	81	250	8·05	48	11 –	69·2
343	343	Northumberland	3·64	·90	13·	6·17	21·72	22·09	22·71	148	104	252	6·52	70	14 –	69·4
294	324	Nottinghamshire	1·79	·93	9·	4·70	20·83	22·49	22·81	180	95	275	7·89	52	12 9	61·4
171	171	Oxon	2·77	1·79	·3	4·74	21·38	20·65	20·97	145	80	225	6·91	55	No return	71·7

APPENDIX.

TABLE A.—*Vital Statistics of each County in England and Wales in the Two Decades*, 1841-50 *and* 1851-60—*Contd.*

1 Population, in Thousands, 1861, by the Census.	2 Population, in Thousands, 1861, by the Registrar-General.	Registration—Counties, &c.	3 Number of Acres to each Person.	4 Rural Population in Proportion to Town Population	5 Increase of Population per Cent. in 10 Years by Census.	6 Number of Persons in a House.	7 Death-rate, 1841-50, to 1,000 of Population, Registrar-General, 13, 191.	8 Death-rate, 1851-60, Registrar-General, 23, xiv.	9 Male Death-rate 1851-60, Registrar-General, 23, 218, and Census, 191.	10 Male Death-rate under 1 Year to 1,000 Births, Registrar-General, 14 to 23, and 23, 196.	11 Male Death-rate from 1 to under 5 Years (Total of 4 Years.)	12 Male Death-rate from Birth to under 5 Years. (Total of 5 Years.)	13 Proportion of Male Death-rate under 1 to General Male Death-rate.	14 Number of Male Deaths in the 4 Years, over 1 and under 5, in Proportion to 100 Male Deaths under 1.	15 Rate of Farm Wages, 1860, *Statistical Journal*, xxiv, 328.	16 Number of Women per Cent. who sign Names to Marriage Registers, Registrar-General, xxiii, vi.
22	23	Rutlandshire	4·36	3·26	minus 5·	4·71	19·34	18·	17·87	126	56	182	7·05	44	*s. d.* No return	78·8
211	260	Salop	3·43	1·61	5·	4·98	20·85	20·10	20·49	142	77	219	6·93	54	10 –	59·9
415	463	Somersetshire	2·35	2·62	·2	5·09	20·28	19·78	20·52	135	77	212	6·58	57	10 –	69·4
747	770	Staffordshire	·97	·72	23·	5·08	23·85	21·85	25·31	182	126	308	7·19	69	12 6	48·3
337	335	Suffolk	2·81	2·33	minus ·01	4·62	19·93	20·23	20·43	147	69	216	7·19	47	10 7	69·7
—	273	Surrey (*extra metropolitan*)	·58	·48	22·	6·38	18·07	18·02	18·19	126	84	210	6·93	67	12 9	82·0
364	367	Sussex	2·58	·79	8·	5·55	18·29	18·95	19·69	130	79	209	6·60	61	11 8	81·6
562	561	Warwickshire	1·	·43	18·	4·83	23·25	23·28	24·06	176	113	289	7·31	64	10 9	64·0
61	61	Westmoreland	7·98	4·06	4·	5·16	19·31	18·31	18·55	104	64	168	5·61	61	14 3	77·7
249	236	Wiltshire	3·47	1·09	minus 2·	4·70	20·69	20·66	20·79	135	80	215	6·49	60	9 6	69·8
307	295	Worcestershire	1·54	·98	11·	4·87	20·95	20·36	21·02	157	88	245	7·47	56	10 –	63·6
210	275	Yorkshire, East Riding	3·19	·91	9·	4·89	23·54	22·18	23·04	181	91	272	7·86	50	13 6	71·1
40		„ City	·07		11·	4·90		19·47	19·56	136	66	202	6·95	49	13 6	74·3
245	211	„ North Riding	5·5	2·10	14·	4·88	19·04	23·89	24·55	177	111	287	7·21	63	13 6	53·4
1,508	1,530	„ West „	1·13	·93	14·	4·65	23·02									
427	416	North Wales	4·70	8·11	3·	4·69	19·54	20·18	20·44	131	80	211	6·41	61	11 2	46·1
685	700	South „	4·	4·52	6·5	5·07	20·48	21·69	22·48	137	103	240	6·09	75		42·1

Note.—Columns 3—6 are taken from the Census.

TABLE B.—*Vital Statistics of some of the Principal Cities and Towns of England in the Two Decades*, 1841-50 *and* 1851-60.

1 Population, in Thousands, 1861, Municipal, by the Census, I, xxi.	2 Population, in Thousands, 1861, by the Registrar-General, 23, 222, &c.	Districts, Towns, &c.	3 Number of Acres to 100 Persons according to Registrar-General, 23, 6, &c.	4 Increase of Population per Cent. in 10 Years, Registrar-General, 23, 196.	5 Number of Persons in a House by the Census.	6 Death-rate, Male and Female, 1841-50, to 1,000 of Population, Registrar-General, 13, 191.	7 Death-rate, Male and Female, 1851-60, to 1,000 of Population, Registrar-General, 23, 220.	8 Male Death-rate, 1851-60, to 1,000 of Population, Registrar-General, 23, 218, and Census, 191.	9 Excess of Females over Males per Cent., 1861, Census, 192.	10 Male Death-rate under 1 Year to 1,000 Births, Registrar-General, xiv to xxiii, and xxiii, 196.	11 Male Death-rate over 1 and under 5 Years (Total of Four Years).	12 Male Death-rate from Birth to under 5 Years. (Five Years.)	13 Proportion of Male Death-rate under 1 to General Male Death-rate.	14 Number of Male Deaths in the 4 Years over 1 and under 5, in Proportion to 100 Male Deaths under 1.
20,066	20,066	England and Wales	186	11·93	5·37	22·28	22·24	23·05	5·25	161	105	266	7·00	65
112	2,804	London	2·79	18·7	7·80	24·55	23·77	25·70	14·48	161	137	298	6·26	85
53	68	Bath	44·37	minus 2·16	6·55	24·02	22·03	24·78	53·30	161	95	255	6·50	59
—	213	Birmingham parish	1·25	22·23	5·01	26·16	26·51	28·05	4·65	189	140	329	6·74	74
296	—	„ borough	—	—	—	—	25·20	26·41	5·61	—	—	—	—	—
13	16	Edgbaston	—	—	—	—	14·90	17·33	44·5	—	—	—	—	—
—	—	„ parish	—	—	—	—	—	—	57·20	—	—	—	—	—

TABLE B.—*Vital Statistics of some of the Principal Cities and Towns of England in the Two Decades,* 1841-50 *and* 1851-60—*Contd.*

1 Population, in Thousands, 1861, Municipal, by the Census, I, xxi.	2 Population in Thousands 1861, by the Registrar-General, 23, 222, &c.	Districts, Towns, &c.	3 Number of Acres to 100 Persons, according to Registrar-General, 23, 6, &c.	4 Increase of Population per Cent. in 10 Years, Registrar-General, 23, 196.	5 Number of Persons in a House by the Census.	6 Death-rate, Male and Female, 1841-50, to 1,000 of Population, Registrar-General, 13, 191.	7 Death-rate, Male and Female, 1851-60, to 1,000 of Population, Registrar-General, 23, 220.	8 Male Death-rate, 1851-60, to 1,000 of Population, Registrar-General, 23, 218, and Census, 191.	9 Excess of Females over Males per Cent., 1861, Census, 192.	10 Male Death-rate under 1 Year to 1,000 Births, Registrar-General, xiv to xxiii, and xxiii, 196.	11 Male Death-rate over 1 and under 5 Years (Total of Four Years.)	12 Male Death-rate from Birth to under 5 Years., (Five Years.)	13 Proportion of Male Death-rate under 1 to General Male Death-rate.	14 Number of Male Deaths in the 4 Years over 1 and under 5, in proportion to 100 Male Deaths under 1.
63	120	Blackburn district	36·32	32·18	5·58	25·18	26·34	27·30	6·99	205	136	341	7·51	67
70	130	Bolton „	33·69	13·56	5·36	26·79	26·88	28·60	7·12	194	133	327	6·78	68
106	196	Bradford „	20·53	7·97	4·72	24·88	25·69	26·89	15·59	205	126	331	7·63	61
78	78	Brighton	2·99	18·19	6·24	21·36	22·00	24·99	31·23	174	111	285	6·96	64
—	66	Bristol parish	2·79	·47	6·53	28·60	26·71	29·68	16·00	177	136	313	5·96	76
154	—	„ borough	—	—	—	—	—	—	23·18	—	—	—	—	—
—	95	Clifton	—	—	—	—	17·50	21·15	73·50	—	—	—	—	—
40	50	Cheltenham district	49·96	12·61	5·66	20·12	19·00	20·78	38·20	156	83	239	7·51	53
31	59	Chester „	183·85	10·49	5·21	23·49	22·21	23·27	4·63	156	98	254	6·70	63
41	42	Coventry	13·18	13·14	4·55	26·85	25·27	26·73	11·52	224	113	337	8·38	50
43	51	Derby	5·82	16·86	4·80	23·98	24·08	25·33	11·60	172	111	283	6·79	65
34	59	Gateshead	43·07	23·56	7·65	24·53	25·82	26·23	minus 2·50	174	128	302	6·63	74
98	57	Hull	3·21	12·26	5·00	30·63	24·69	26·06	6·35	201	131	332	7·71	65
18	19	Leamington	15·45	11·81	5·51	19·19	19·00	22·10	43·20	—	—	—	—	—
207	118	Leeds	1·79	16·11	4·61	29·56	27·72	29·43	6·89	206	146	352	7·00	71
68	68	Leicester	5·81	12·44	4·66	26·75	25·41	27·19	14·20	212	122	334	7·79	58
444	270	Liverpool parish*	·82	4·07	7·28	39·22	33·29	35·23	3·05	240	227	467	6·81	95
—	—	„ and West Derby	—	—	6·75	34·95	—	—	5·80	—	—	—	—	—
36	62	Macclesfield	132·51	minus 2·82	4·33	25·96	24·83	25·43	10·58	191	102	293	7·51	54
339	244	Manchester	5·18	6·81	5·69	33·08	31·48	33·65	10·96	220	168	388	6·54	76
—	—	„ and Chorlton	—	—	5·51	30·69	28·60	—	11·53	205	156	361	—	76
102	105	Salford	4·58	20·35	5·36	27·65	26·00	27·66	12·42	198	145	343	7·16	73
109	111	Newcastle-on-Tyne	6·40	24·46	7·80	26·83	27·37	28·61	1·66	193	145	338	6·75	75
75	74	Norwich	5·81	9·16	4·38	23·90	24·91	26·70	20·71	208	107	315	7·79	51
75	76	Nottingham	2·47	29·69	4·84	25·51	26·66	28·95	21·89	223	130	353	7·70	58
72	111	Oldham	15·16	28·22	5·24	25·80	25·37	26·43	3·72	206	128	334	7·79	62
63	63	Plymouth	2·61	19·87	10·29	24·81	23·62	25·36	15·78	175	152	327	6·90	87
95	95	Portsmouth	8·23	31·47	6·00	24·72	22·78	23·39	3·77	147	129	276	6·28	87
83	111	Preston	61·56	14·48	5·51	25·12	27·17	28·73	12·26	212	139	351	7·38	66
185	128	Sheffield	8·21	24·44	4·87	26·65	28·45	29·51	·97	196	151	347	6·64	77
47	43	Southampton	6·06	27·32	6·00	22·81	24·45	27·49	12·50	171	119	290	6·22	70
55	94	Stockport	32·55	4·6	4·86	25·28	25·62	26·87	13·99	204	114	318	7·59	56
78	91	Sunderland	13·17	28·52	7·80	24·33	24·89	25·98	5·46	170	132	302	6·54	78
61	127	Wolverhampton	42·47	21·83	5·17	27·24	27·61	28·45	minus 2·93	203	153	356	7·14	75
35	30	Yarmouth	4·98	12·87	4·47	23·33	24·73	27·03	25·39	202	113	315	7·47	56
40	60	York	139·14	10·39	4·91	23·62	24·01	25·15	8·05	178	101	280	7·08	57

* Liverpool parish extends over part of the Mersey. Its whole area is 2,200 acres, of which 1,560 acres are land, and 660 acres are water (Census 1861, I, 595). Therefore ·82 should be reduced to ·58.

TABLE C.—*Vital Statistics of the Metropolis, and of its Principal Registration Districts in the Two Decades, 1841-50 and 1851-60.*

1 Population, in Thousands, 1861, Registrar-General, 23, 6.	London and some of its Districts.	2 Acres to each 100 Persons, Registrar-General, 23, 6.	3 Increase per Cent. in 10 Years, Census, I, 196.	4 Number in a House, Census, I, 196.	5 Death-rate, Male and Female, 1841-50, *Including* Hospitals, &c. Registrar-General, XIII, 134.	6 Death-rate, Male and Female, 1851-60, *Including* Hospitals, &c. Registrar-General, xxii, 220.	7 Death-rate, Male and Female, 1851-60, *Excluding* Hospitals, &c. Registrar-General, xxiii, 220, and 83-4.	8 Death-rate, Male and Female, 1851-60, adding One-sixth to Column 7 for Deaths in Public Institutions.	9 Male Death-rate, including Hospitals, 1851-60, Registrar-General, xxiii, 222, and Census, I, 196.	10 Excess of Females over Males, 1861, per Cent., Census, I, 196.	11 Male Death-rate, 1851-60, under 1 to 1,000 Births, Registrar-General, xiv to xxiii, 102, and xxiii, 196.	12 Male Death-rate over 1 and under 5 Years. (Total of Four Years.)	13 Male Death-rate from Birth to under 5 Years.
20,066	England and Wales	186	11·93	5·37	22·28	22·21	—	—	23·05	5·25	161	105	266
2,804	London	2·79	18·70	7·80	24·55	23·77	—	—	25·70	14·48	161	137	298
66	Lewisham (W. W.)	26·04	88·77	6·77	16·51	16·75	16·01	18·67	17·97	9·96	135	104	239
19	Hampstead (W.)	11·79	59·10	7·20	17·27	16·00	14·78	17·24	19·15	60·58	134	116	250
88	St. George's, Hanover Square (H.)	1·32	19·86	8·41	23·61	20·85	16·15	18·84	25·25	33·50	147	122	269
35	St. James, Westminster (W.)	·46	minus 2·97	10·60	20·55	21·49	18·28	21·33	22·23	12·10	166	147	313
162	Marylebone (H. H.)	·93	2·53	9·88	23·89	23·71	19·37	22·60	26·22	30·00	176	136	302
23	St. Martin-in-the-Fields (H. and W.)	1·34	minus 7·92	10·13	25·77	25·97	18·60	21·70	27·95	7·15	170	157	327
43	Strand (H.)	·40	minus 3·24	11·39	23·27	23·67	20·09	23·44	25·87	7·05	164	170	334
129	Shoreditch (W. W.)	·50	18·40	7·58	26·65	21·23	20·69	24·14	25·26	8·66	157	134	291
58	Bermondsey	1·18	21·25	7·10	26·79	21·84	24·84	28·98	25·32	3·39	161	159	320
49	St. George's-in-the-East (W.)	·50	1·07	7·92	27·70	27·10	23·57	27·50	27·84	6·78	174	159	333
79	Whitechapel (H. H.)	·51	minus ·99	9·11	31·20	30·41	22·68	26·46	32·41	minus 1·82	191	175	366
56	St. George's, Southwark (W. and L. A.)	·51	7·11	7·67	28·07	25·83	22·46	26·20	26·61	5·46	188	153	341
54	St. Giles's (H.)	·45	minus ·25	11·53	25·18	26·68	21·43	25·00	28·75	12·47	187	163	350
27	West London (H.)	·51	minus 3·78	10·52	44·03	44·98	20·87	24·35	51·38	2·47	188	248	436
46	City	·95	minus 18·55	7·16	18·95	17·67	17·67	20·62	19·10	10·34	140	144	284
—	Bethnal Green (H., W., and L. A.)	·72	16·53	7·13	24·19	22·26	19·63	22·90	22·98	3·51	156	139	295

Note.—(W.) means that there is a workhouse in this district; (H.) that there is a hospital; (L. A.) that there is a lunatic asylum.

A Few Statistics *relating to* Shipping Casualties. *By* Henry Jeula, *Member of Lloyd's*, F.R.G.S., F.S.S.

[Read before the Statistical Society, 15th March, 1861.]

The value of statistical information being now so generally admitted, it has frequently caused me considerable surprise that the by no means unimportant subject of "*Shipping Casualties*" should have been, to so large an extent, excluded from its benefits; and I now cheerfully yield to the request of the Council of our Society, that I would prepare a Paper upon this topic; but in placing it before you, permit me to crave your kind consideration for my effort rather to open up the field of inquiry for other and abler hands to till than myself to develop its treasures.

In the comparative tables which I have collated from information previously given in "Lloyd's List," and which have appeared in successive numbers of our *Journal*, it has been my desire to direct attention to the theme, in the hope that other minds might perhaps become interested in it, and that the result would be a regular system of statistics applied to shipping disasters, organized for the purpose of affording data generally useful to all engaged in maritime enterprise, whether as owners, masters, freighters, or insurers.

In furtherance of this object, you will, I trust, grant me your indulgence while I try to place before you—as briefly and succinctly as I can—the results of some of my investigations.

Of necessity my paper of to-night can afford but very meagre information upon so large a subject, as before it could be thoroughly exhibited to you, much more extended inquiries than my time will permit must be made, ranging over both British and Foreign ships, as well steamers as sailing vessels; but when we remember that the shipping belonging to the *United Kingdom* reached, at *the end of* 1862,* the amount of 28,440 vessels, of 4,934,400 tons, navigated by 228,139 men and boys; and the shipping belonging to the *British possessions*, 10,987 vessels of 1,106,958 tons, navigated by 76,032 men and boys, we must, I think, admit that any effort, however humble, to draw attention to the disasters constantly occurring to so pre-eminent a branch of our national commerce cannot be superfluous or out of place.

From the tables mentioned above, it appears that, for the *six*

* *Vide* "Times."

years from 1854 to 1859 inclusive, the *average annual total* reported in "Lloyd's Register of Losses" was 3341·34.

The *percentage* of this total, separated under the following seven general divisions, was as under:—

Percentage of Annual Total.

Wrecked.	Sunk.	Abandoned.	Missing.	Stranded.	Condemned.	Touched the Ground, sustaining Trifling Damage.
24·16	10·41	7·1	1·14	54·46	2·41	·29

The *six years' average monthly totals* were as follow:—

		Per Cent. of Annual Average.
January	412·33	or 12·34
February	290·33	„ 8·69
March	301·17	„ 9·01
April	246·33	„ 7·37
May	198·67	„ 5·95
June	175·83	„ 5·26
July	170·5	„ 5·1
August	182·0	„ 5·45
September	222·0	„ 6·64
October	362·17	„ 10·84
November	381·17	„ 11·41
December	398·83	„ 11·94

The *percentages* of these *monthly totals*, divided under the seven heads already mentioned, were as under:—

Percentages of Monthly Totals.

Months.	Wrecked.	Sunk.	Abandoned.	Missing.	Stranded.	Condemned.	Touched the Ground, sustaining Trifling Damage.
January	26·03	8·41	6·75	1·41	54·85	2·02	·53
February	23·77	8·72	8·44	1·38	54·3	2·76	·63
March	22·58	8·69	7·64	1·72	56·27	2·77	·33
April	21·18	10·08	7·91	1·49	57·04	2·23	·07
May	19·21	12·08	7·64	1·51	56·37	2·94	·25
June	21·9	10·71	5·97	2·66	55·73	2·75	·28
July	22·68	10·16	4·99	1·27	56·5	4·01	·39
August	23·35	14·38	7·05	1·01	51·01	3·02	·18
September	21·01	12·39	4·88	·6	58·71	2·18	·23
October	28·25	11·96	6·35	·42	50·99	1·98	·05
November	27·33	11·24	8·22	·22	50·93	1·75	·31
December	24·99	9·53	7·56	1·04	54·58	2·13	·17

The *quarterly averages* for the same *six years* were:—

		Per Cent. of Annual Average.
March quarter	1003·83	or 30·04
June „	620·83	„ 18·58
September „	574·5	„ 17·2
December „	1142·17	„ 34·18

And the *percentages* of the *seven divisions*, as follow:—

Percentage of Quarterly Average.

Seasons.	Wrecked.	Sunk.	Abandoned.	Missing.	Stranded.	Condemned.	Touched the Ground, sustaining Trifling Damage.
March quarter	24·34	8·58	7·5	1·49	55·13	2·46	·5
June „	20·75	10·9	7·28	1·82	56·46	2·6	·19
September quarter	22·25	12·36	5·6	·93	55·61	2·99	·26
December „	26·81	10·87	7·4	·57	52·23	1·05	·17

The *average* for the—

		Per Cent. of Annual Average.
First half-year was	1624·67	or 48·63
Second „	1716·67	„ 51·37

Divided as before, the *percentages* were:—

Seasons.	Wrecked.	Sunk.	Abandoned.	Missing.	Stranded.	Condemned.	Touched the Ground, sustaining Trifling Damage.
First half-year	22·96	9·47	7·42	1·62	55·63	2·51	·38
Second „	25·28	11·37	6·8	·69	53·36	2·3	·2

The foregoing figures are gleanings from maritime disasters occurring in various parts of the world, and reported upon the "Loss Register" during the interval named. Let us now turn to the more circumscribed but very dangerous area of our own channels and coasts.

From the returns made to the "Lords of the Committee of Privy "Council for Trade," of the wrecks and casualties reported as having occurred on or near the coasts of the United Kingdom it appears that the *annual average* for *seven years*, from 1855 to 1861 inclusive,

was 1270·86; but in 1862 the number rose to 1,488, equivalent to an increase of 17·09 per cent. upon the previous septennial average.

The *monthly averages* for the *six years* from 1856 to 1861 inclusive were as follow:—

		Per Cent. of Annual Average.
January	168·67	or 13·05
February	160·83	„ 12·44
March	118·67	„ 9·18
April	85·17	„ 6·59
May	65·5	„ 5·07
June	38·67	„ 2·99
July	42·33	„ 3·28
August	59·67	„ 4·62
September	87·0	„ 6·73
October	161·83	„ 12·52
November	171·17	„ 13·24
December	133·0	„ 10·29

The *monthly numbers* for 1862 were:—

Months.		Per Cent. of Annual Total.	Upon Previous Average of Six Years. Increase per Cent.	Upon Previous Average of Six Years. Decrease per Cent.
January	186 or	12·50	—	·55
February	87 „	5·86	—	6·58
March	142 „	9·54	·36	—
April	69 „	4·64	—	1·95
May	65 „	4·37	—	·7
June	58 „	3·87	·88	—
July	76 „	5·11	1·83	—
August	52 „	3·5	—	1·12
September	54 „	3·63	—	3·1
October	283 „	19·02	6·5	—
November	140 „	9·41	—	3·83
December	276 „	18·55	8·26	—
Casualties happening to 1,827 vessels	1,488			

The *quarterly averages* for *six years*, from 1856 to 1861 inclusive, were:—

		Per Cent. of Annual Average.
March quarter	448·17	or 34·67
June „	189·33	„ 14·65
September „	189·0	„ 14·63
December „	466·0	„ 36·05

For 1862 the *quarterly numbers* were :—

	Average.	Per Cent. of Annual Total.	Increase per Cent.	Decrease per Cent.
March quarter	415 or	27·90	—	6·77
June „	192 „	12·88	—	1·77
September „	182 „	12·24	—	2·39
December „	699 „	46·98	10·93	—

For the—

		Per Cent. of Annual Average.
First half-year the *average* was	637·5	or 49·32
Second „ „	655·0	„ 50·68

In 1862 the—

	Average.	Per Cent. of Annual Total.	Increase per Cent.	Decrease per Cent.
First half-year gave.....	607 or	40·78	—	8·54
Second „	881 „	59·22	8·54	—

The *cargoes* of the vessels to which casualties occurred around our coasts give the following results upon the *annual average* for *seven years*, from 1855 to 1861 inclusive, ranged in the order of disaster :—

	Per Cent. of Annual Average.
Coals	32·8
In ballast, not colliers	10·88
General cargo	8·14
Grain, oatmeal, flour, provisions	7·49
Metallic ores	7·33
Colliers in ballast	5·96
Various or unknown	5·64
Timber or bark	5·34
Stone, slate, lime, bricks, or clay	4·96
Salt	2·34
Passengers and general cargo	1·88
Manure, kelp, or oil cake	1·74
Fishing smacks	1·66
Fish or oil	1·24
Potatoes or fruit	1·18
Sugar, coffee, spices, tea, and molasses	·67
Cotton	·52
Wine or spirits	·23

During the year 1862 the *cargoes* of the various vessels to which

accidents happened give the following percentages and comparative figures, say :—

Cargoes.	Percentage of Annual Total.	Increase per Cent.	Decrease per Cent.
Coals	32·46	—	·34
In ballast, not colliers	9·03	—	1·85
General cargo	5·09	—	3·05
Grain, oatmeal, flour, provisions	5·97	—	1·52
Metallic ores	6·18	—	1·15
Colliers in ballast	7·01	1·05	—
Various or unknown	10·78	5·14	—
Timber or bark	4·87	—	·47
Stone, slate, lime, bricks, or clay	5·47	·51	—
Salt	1·37	—	·97
Passengers and general cargo	3·01	1·13	—
Manure, kelp, or oil cake	1·7	—	·04
Fishing smacks	4·6	2·94	—
Fish or oil	1·04	—	·2
Potatoes or fruit	·71	—	·47
Sugar, coffee, spices, tea, and molasses	·49	—	·18
Cotton	·11	—	·41
Wine or spirits	·11	—	·12

It may neither be uninteresting nor uninstructive to notice the differences pertaining to *various localities*, and for this purpose (according to the plan of the Privy Council Committee) dividing our coasts into *eight departments*, we find that on the *average* of the *six years* from 1856 to 1861 inclusive—

	Percentage of Annual Average.
The *East Coast*, from Dungeness to Pentland Frith inclusive, gives	49·4
„ *West Coast*, from Land's End to Greenock inclusive..... „	24·75
„ *Irish Coast* ..... „	10·38
„ *South Coast*, from Land's End to Dungeness exclusive „	9·26
„ *Northern Islands*, Orkney, Shetland, Hebrides, Islay, Campbelton, and north end of Scotland ..... „	3·58
„ *Isle of Man* ..... „	1·1
„ *Lundy Island* ..... „	·8
„ *Scilly Isles* ..... „	·73

These various sections furnish in 1862 the following figures and comparisons :—

District.	Percentage of Annual Total.	Increase per Cent.	Decrease per Cent.
The *East Coast*, from Dungeness to Pentland Frith inclusive	51·41	2·01	—
„ *West Coast*, from Land's End to Greenock inclusive	22·51	—	2·24
„ *Irish Coast*	10·08	—	·3
„ *South Coast*, from Land's End to Dungeness exclusive	9·81	·55	—
„ *Northern Islands*, Orkney, Shetland, Hebrides, Islay, Campbelton, and north end of Scotland.....	4·44	·86	—
„ *Isle of Man*	·74	—	·36
„ *Lundy Island*	·67	—	·13
„ *Scilly Isles*	·34	—	·39

Referring to the *description of vessels* to which casualties happened, it is found that of the number recorded in the *six years* from 1856 to 1861 inclusive the proportions were as follow:—

	Percentage of Annual Average.
Schooners	31·28
Brigs	24·93
Barques	9·7
Sloops	7·34
Brigantines	6·87
Smacks	5·17
Ships	4·69
Steam vessels	3·0
Various and unknown	2·9
Galliots.....	1·42
Luggers	1·3
Ketches	·72
Cutters	·68

In 1862 the following variations occur:—

Class of Vessels.	Percentage of Annual Total.	Increase per Cent.	Decrease per Cent.
Schooners	26·87	—	4·41
Brigs	20·53	—	4·4
Barques	10·07	·37	—
Sloops	6·68	—	·66
Brigantines	9·58	2·71	—
Smacks	6·57	1·4	—
Ships	4·71	·02	—
Steam vessels	6·4	3·4	—
Various and unknown	4·16	1·26	—
Galliots	1·15	—	·27
Luggers	1·53	·23	—
Ketches	1·2	·48	—
Cutters	·55	—	·13

Having regard to the *size* of the various vessels, we find that during the *seven years* from 1855 to 1861 inclusive casualties happened to—

	Percentage of Annual Average.
Vessels from 101 tons and under 300 tons in the proportion of....	40·43
„ „ 51 „ 100 „ „	31·86
„ not exceeding 50 tons „ „	15·0
„ from 301 tons and under 600 „ „	8·53
„ „ 601 „ 900 „ „	2·48
„ „ 901 „ 1,200 „ „	1·05
„ „ 1,200 tons and upwards	·58
„ tonnage unknown	·07

In 1862 the sizes of the various vessels were found to be as under:—

Tonnage.	Percentage of Annual Total.	Increase per Cent.	Decrease per Cent.
101 tons and under 300 tons	42·91	2·48	—
51 „ 100 „	24·14	—	7·72
Not exceeding 50 tons	18·66	3·66	—
301 tons and under 600 tons	10·18	1·65	—
601 „ 900 „	2.41	—	·07
901 „ 1,200 „	1·1	·05	—
1,200 tons and upwards	·6	·02	—
Tonnage unknown	Nil	—	·07

The *ages of the vessels* to which accidents occurred present a remarkable variety, giving the following results for the *four years* from 1858 to 1861 inclusive:—

	Percentage of Annual Average.
Age unknown	16·98
15 years and not more than 20 years	15·77
21 „ „ 30 „	14·51
3 „ „ 7 „	13·1
11 „ „ 14 „	9·54
Under 3 years old	8·41
8 years and not more than 10 years	7·24
31 „ „ 40 „	6·67
41 „ „ 50 „	3·9
51 „ „ 60 „	2·14
61 „ „ 70 „	·95
71 „ „ 80 „	·51
81 „ „ 90 „	·15
91 „ „ 100 „	·08
101 and upwards	·05

For 1862 the figures were:—

Age of Vessels.	Percentage of Annual Total.	Increase per Cent.	Decrease per Cent.
Age unknown	24·19	7·21	—
15 years and not more than 20 years	11·82	—	3·95
21 „ „ 30 „	14·56	·05	—
3 „ „ 7 „	14·83	1·73	—
11 „ „ 14 „	8·48	—	1·06
Under 3 years old	6·68	—	1·73
8 years and not more than 10 years	7·17	—	·07
31 „ „ 40 „	6·84	·17	—
41 „ „ 50 „	3·23	—	·67
51 „ „ 60 „	1·37	—	·77
61 „ „ 70 „	·55	—	·40
71 „ „ 80 „	·22	—	·29
81 „ „ 90 „	Nil	—	·15
91 „ „ 100 „	·06	—	·02
101 and upwards	Nil	—	·05

It will doubtless have been observed that in the *tables of averages* relating to cargoes, localities, the description, size, and age of vessels, I have followed the *order of disaster*, but in the comparison of the year 1862 with such averages I have followed the *order of the tables themselves*, thus exhibiting the results, as it seemed to me, with greater clearness.

The *six years* ending 1862 inclusive give an average of—

	Percentage of Annual Average.
Casualties ending in *partial loss*	837·83 or 62·14
„ „ *total loss*	510·5 „ 37·86
Average total	1348·33

While 1862 alone shows—

Issue of Casualties.		Percentage of Annual Total.	Increase per Cent.	Decrease per Cent.
Ending in *partial loss*	967 or	64·99	2·85	—
„ *total loss*	521 „	35·01	—	2·85
Total	1,488			

Showing an *increase* on *partial losses* of 15·42 per cent., and on *total losses* of 2·06 per cent.

For *seven years* ending 1861 inclusive the proportion of—

	Per Cent.
Casualties, not being collisions, was	76.27
Collisions	23·73

In 1862 the proportions were:—

Casualties.	Per Cent.	Increase per Cent.	Decrease per Cent.
Not being collisions	77·28	1·01	—
Collisions	22·72	—	1·01

From the results of the *ten years* from 1852 to 1861 inclusive it would appear that the *average rate of casualty per voyage* upon—

British ships has been ·49, or 1 in 204, the *lowest* being ·35, or 1 in 286, in 1853; the *highest*. ·59, or 1 in 169, in 1859; upon—

Foreign vessels the percentage has been ·43, or 1 in 233, the *lowest* being ·32, or 1 in 313, in 1853; the *highest* ·58, or 1 in 172, in 1850.

Grouping *British and Foreign vessels together*, the result is ·48, or 1 in 208, the *lowest* being ·34, or 1 in 294, in 1853; the *highest*, ·56, or 1 in 179, in 1859, and the same in 1861.

In 1862 the rate of casualty per voyage on *British* ships was ·72, or 1 in 138, being an *increase* of ·23 upon the *average of ten years*;—upon

Foreign vessels the percentage was ·5, or 1 in 199, being an *increase* of ·07;—upon

British and Foreign vessels *together*, ·68, or 1 in 147, being an *increase* of ·20.

It is remarkable that the rate of casualty to *British* ships in 1862 is the *highest* of any year from 1852 inclusive. The Channel Islands are not included in these tables.

The *value of the property* lost upon our coasts has been roughly estimated as amounting—

	£
In 1857 to	519,301
„ '58 „	435,765
„ '59 „	750,121
„ '60 „	603,065
„ '61 „	1,000,957
„ '62 „	941,040
Total for *six years*	4,250,249

From a paper read before our Society by John Glover, Esq., 17th June, 1862, and published in the *Journal* for March, 1863, I find that from 1850 to 1860 the *number* of British sailing vessels engaged in the home and foreign trade increased 9·0 per cent.; the *tonnage* increased 27·0 per cent., but the *number of men* employed

to *each* 100 *tons decreased* 19·0 per cent.; while *steam vessels* belonging to the United Kingdom, and engaged in the same trades, increased in *number* 118·0 per cent., in *tonnage* 282·0 per cent., but in the *number of men* employed to *each* 100 *tons decreased* 21·0 per cent.

As the nearest comparison with these figures I am able to make, I find that in the year 1852 casualties occurred to 1,115 vessels on or around our coasts, while in 1862 the number rose to 1,827, or an increase of 63·85 per cent.

It may not be unimportant to ask the question whether, with the enormous *increase* of our ships both in *number* and *tonnage*, and a *higher ratio of activity*, the very large *reduction* in the percentage of hands employed to each 100 *tons*, notwithstanding the admitted advantages of patent capstans, windlasses, reefing topsails, and other mechanical appliances, may not have *a close relation to the terrible increase in casualties* which has occurred while "*examinations*" and "*certificates*" of "*service*" and "*competency*" might reasonably have led us to hope for a decrease in the number of disasters?

But while we are thus led to remark so great an increase in the number of vessels to which casualties happened around our five thousand miles of coast during 1862, it is specially gratifying to note how large a reduction has occurred in the number of lives sacrificed thereby; the average of the last eleven years gives nearly 800 lives lost per annum; while in 1862 the number fell to 690.

It would indeed but ill become me to bring the subject of this evening's paper before you without calling your attention to the efforts of such noble associations as the *National Lifeboat Institution* and the *Shipwrecked Mariner's Society*, to which in so large a measure the honour belongs—either directly or indirectly—of saving hundreds of imperilled lives year by year; may the just claims of these admirable institutions be yet more fully recognized, and their efforts be still more liberally seconded by the whole body of our countrymen!

Having thus briefly—somewhat superficially—and very imperfectly placed a few of the "*statistics relating to shipping casualties*" before you, permit me to express the earnest hope that abler minds than mine may consider the subject of sufficient interest and importance to enlist their efforts in rendering the information which is constantly accumulating *practically available* to all the classes specially concerned.

As we are so pre-eminently a maritime nation it would seem but the natural course of things that, when the statistics of accidents, agriculture, crime, life assurance, pauperism, population, sanitary arrangements, taxation, water supply, and a hundred other subjects receive much and continuous attention, the disasters inseparable

from our navigation of the seas should also obtain their share of careful record and examination.

I have purposely *avoided deductions* from the foregoing figures, leaving these to be drawn by individual minds, according to their particular circumstances and points of view, and should I have succeeded in awakening any interest in the subject, I shall indeed be glad.

I need hardly say, it will afford me pleasure if in any way I can assist gentlemen in inquiries they may desire to make in the direction indicated.

It now only remains for me to thank you—and I do so most sincerely—for the honour you have done me in listening to the humble effort of to-night.

On Shipwrecks *in the* Royal Navy. *By* William Barwick Hodge, *one of the Vice-Presidents of the Statistical Society.*

[Read before the Statistical Society, 15th March, 1864.]

The Tables appended to this paper have been drawn up for the purpose of showing the relative proportion of losses, arising from accidental causes only, among the vessels of the Royal Navy during war and during peace. The destruction or capture of vessels effected by enemies during war not being included.

The facts are taken from James's Naval History and a book upon Shipwrecks in the Royal Navy by Mr. W. S. Gilly.* Both these works are said by their authors to have been based upon information obtained from official documents, access to which was given to the writers by the Admiralty. The accuracy of James's work is so well established as to need no remark, and from a close examination of Mr. Gilly's book, I believe it to have been compiled with great care.

The Table I contains a statement of the average annual numbers of vessels employed as cruisers during the two wars consequent upon the first French revolution. The vessels are divided into four classes, namely:—1. Ships of the line carrying 60 guns and upwards. 2. Frigates carrying 28 guns or any higher number less than 60. 3. Smaller vessels carrying less than 28 guns. 4. Troop and store ships and other unarmed vessels. In order to restrict the number of classes, I have found it necessary to include among the frigates a class of vessels which do not come strictly within that denomination, although much smaller than many modern frigates. These are two-decked vessels, carrying from 50 to 60 guns, many of which were common in the Navy at the commencement of the war, but during the progress of it they gradually fell into disuse.

Table II contains a list of the annual losses, during the period in question, of vessels that foundered or were wrecked, or accidentally burned. The year 1802, which was a year of peace, is excluded from the comparison.

From these two tables it appears that, upon the average, during the years from 1793 to 1801, and 1803 to 1815, 93 line of battle ships, 124 frigates, and 281 smaller vessels, or 498 in all, were annually employed as cruisers, and that during the 22 years referred to, 28 line of battle ships, 76 frigates, and 248 smaller vessels, were accidentally destroyed, independently of the vessels lost in action.

* London: Parker, 1857.

The average annual percentage of loss upon the average number of each class employed, was as follows:

	Ships of the Line.	Frigates.	Smaller Vessels.	Total of all Classes.
	Per cnt.	Per cnt.	Per cnt.	Per cnt.
Wrecked	0·88	2·57	3·07	2·54
Foundered	0·15	0·15	0·87	0·55
Burnt	0·34	0·07	0·07	0·12
Total	1·37	2·79	4·01	3·21

The total annual rates per cent. upon the several classes were in the proportion of 1, 2, and 3, very nearly the proportion of losses among frigates being a little more than twice, and among the smaller classes not quite three times as great as among ships of the line. The risk of destruction by fire was very nearly five times as great in ships of the line as in smaller vessels.

Of the total number of vessels lost—

278	or	79·0	per cent.	were wrecked.
61	„	17·3	„	foundered.
13	„	3·7	„	were burned.
In all 352		100·0		

In 1802, a year of peace, three sail only (one frigate and two smaller vessels) were lost, out of the average number of 352 vessels employed, being at the rate of 0·85 per cent. per annum.

According to the best estimate that can be framed, the 352 vessels referred to in Table II, had on board at the time they were lost crews amounting in the aggregate to 50,186 men, of whom 14,311 perished. This is in the proportion of 28½ per cent.

A valuable comparison of the losses in this respect in the Royal, with those of the same kind in the Mercantile, Navy may be obtained from a paper upon Marine Assurance, dated May, 1852, published by Mr. William Lance, of Lloyd's, in the Assurance Magazine.* Mr. Lance estimated that out of the crews of 4,737 vessels wrecked, numbering in all 38,627 men, 10,368 were drowned. This was at the rate of 26·84 per cent., a ratio approximating very nearly to the proportion of deaths in the Royal Navy. It might have been expected that the ratio of deaths in the latter would have been smaller, considering the superior construction of the vessels, the greater number of boats supplied to them, and the more perfect

* Vol. ii, p. 362.

discipline of the men; but in a ship of war the number of the crew is very much greater in proportion to the size of the vessel than in the mercantile marine, and this in the former service must necessarily increase the difficulty of saving life in the event of a wreck.

In a paper on the "Mortality arising from Naval Operations," which I had the honour to lay before the Society,* I endeavoured to estimate the loss of life in the Navy from shipwreck during the period under consideration, and calculated it at 13,621 men. On going over the facts again, I have added to the list several cases of wreck which I had not previously noticed, and these have raised the number of men lost to 14,311. I have also corrected the dates of several wrecks which has caused an alteration in the distribution of the numbers of the annual losses as well as in the aggregate number.

The annual deaths from shipwreck in the Royal Navy during war appear to have been at the rate of 6 per 1,000 of the mean number of men employed. This was double the ratio of deaths from injuries received in battle, which was only 3 per 1,000 annually.

The following statement shows—

The Proportion of the Crews lost in	Ships of the Line.	Frigates.	Smaller Vessels.	Total of all Classes.
	Per cnt.	Per cnt.	Per cnt.	Per cnt.
Vessels wrecked	38·43	8·30	19·30	19·29
„ foundered	66·90	44·26	85·87	75·66
„ burnt	31·36	98·26	24·71	37·08
„ lost from all causes	39·25	12·56	35·71	28·51

The men serving on board frigates seem to have incurred less risk, or to have had peculiar means of safety, as the proportion of loss among them was only one-third of the proportion lost on other vessels.

The distribution of the total loss of men is as follows:—

7,440	or	52·00	per cent.	were lost in vessels	wrecked.
5,032	„	35·20	„	„	that foundered.
1,839	„	12·80	„	„	burnt.
In all 14,311		100·00			

In order to determine the effect of the seasons upon the prevalence of wrecks, I have drawn out the following statement in which, the numbers being insufficient for a monthly enumeration, I have

* *Statistical Journal*, vol. xviii, p. 217.

given those occurring in each quarter of the year, beginning with the second in order to bring the summer and winter quarters together. It comprises the whole of the ships lost during the period referred to in Table II, with the exception of 1 ship of the line and 22 smaller vessels, in relation to which the exact dates of loss cannot be ascertained.

Months.	Vessels Lost.							
	Numbers of			Total of all Classes.	Percentage of			Total of all Classes.
	Ships of the Line.	Frigates.	Smaller Vessels.		Ships of the Line.	Frigates.	Smaller Vessels.	
April, May, June.	3	11	32	46	15·0	14·9	14·4	14·6
July, Aug., Sept. .	—	20	44	64	—	27·0	19·8	20·3
Oct., Nov., Dec.	11	24	79	114	55·0	32·4	35·6	36·0
Jan., Feb., March .	6	19	67	92	30·0	25·7	30·2	29·1
	20	74	222	316	100·0	100·0	100·0	100·0

Table III contains an enumeration of the vessels lost to the Royal Navy from the close of the year 1815 to that of 1857. The numbers are so small that an annual statement of them would be useless, and I have therefore thrown them into groups of seven years each, and I have adopted these periods because some of them coincide with the periods for which statistical reports as to the health and mortality of the Navy have been published.

In the 42 years comprised in the Table III, 75 vessels only were lost, being at the rate of 1·8 per annum. This is little more than one-tenth of the average number (rather more than 16) annually lost in the 22 years comprised in Table II. The 42 years were principally years of peace, and did not lead to any warlike operations of importance, except during the Russian War (1854 to 1856). Only two ships employed in the operations against the Russians were wrecked, and the period of seven years in which the war took place shows a smaller loss, both of ships and men, than any other in the table. This, considering the much larger number of vessels employed, is very remarkable.

I have not been able to ascertain the average number of the vessels employed, except for three of the periods comprised in Table III. From 1816 to 1822, the average number was 138, and of these 17 were lost, being at the rate of 1·76 per cent. per annum. From 1830 to 1836, an average number of 248 vessels was employed, and of these 10, being at the rate of 0·58 per cent. per annum, were lost

From 1837 to 1843, an average of 262 vessels was employed, and of these 10, being at the rate of 0·545 per cent. per annum, were lost. The three periods may be considered as giving a fair example of the average losses during peace, which for the whole 21 years were at the rate of 0·815 per cent. per annum, as compared with 3·21 per cent. per annum during war, being in the ratio of 1 to 4 very nearly.

The aggregate crews of the 75 vessels referred to in Table III, amounted to 7,312 men, and of these 1,900 perished. This is at the rate of 25·99 per cent., being almost identical with the proportion of loss in the mercantile marine already noticed, and which, it was observed, approximated very nearly to the rate of loss in the Royal Navy during war. It seems, therefore, to be the result of rather an extensive experience, that the loss of a vessel is attended, upon the average, with the loss of about one-fourth of her crew.

An examination of Table III shows a constant diminution in the losses of vessels from accidental causes in the period from 1815 to 1857. In the years 1856 and 1857 one ship only was lost, and as the average number of vesssls employed during those years was 202, the annual ratio of loss was 0·248, or a small fraction under a quarter per cent, and less than one-seventh of the average annual ratio, 1·76 per cent. for the period, 1816-22.

This diminution is no doubt due in an important degree to the application of the auxiliary power of steam; but much of it may be attributed to scientific improvements in navigation and in the construction of our ships. A short time before the peace of 1815, the system of diagonal bracing, which added so greatly to the strength of the vessels, was, with other improvements, introduced into the navy by Sir Robert Seppings. His account of it was published in the "Philosophical Transactions" for 1814, but many years would of course elapse before it could be completely adopted. It is strange that there should have been so much delay in applying to ship building a principle founded upon simple and well-known properties of the triangle and parallelogram, and practised from time immemorial in land carpentry; the employment of it for the navy having, it is said, been suggested to Sir Robert Seppings by his observation of the gate commonly used in the country.*

* The principle of construction, generally adopted in this country about the year 1851, in consequence of the extraordinary success of the United States yacht "America" in that year, of lengthening the bow and carrying the greatest breadth of beam further aft, which has wonderfully improved the sailing qualities of our ships, is not a recent discovery. It appears to have been well known to the French naval architects in the last century. The frigate "Endymion" was built upon this principle, in imitation of a vessel captured from the French in 1794. She turned out one of the fastest vessels in the service, and by her superior sailing secured the capture of the American frigate "President," which would have escaped the squadron that took her, had she not been overtaken and brought to action by the "Endymion." Notwithstanding this evidence of the value of the principle, it seems to have been subsequently entirely neglected by our naval authorities.

Towards the end of the last century, many vessels were lost from the practice of coppering ships captured from the French. That nation, as they did not sheathe their ships with copper, made very general use of iron bolts for fastenings. The galvanic action set up by the contact of the two metals, the nature of which was not then understood, although its effects had been previously observed, caused such a rapid corrosion of the iron, that many of the vessels sometime after being coppered, were found to be falling to pieces. This fact was mentioned to me by Mr. Knowles, the learned author of a valuable "Inquiry into the Means taken for Preserving the Navy" (London, 1821), and it was probably in a great measure the cause of the remarkable result mentioned by James ("Naval History," vol. iii, p. 358), that of twenty-two vessels of the Royal Navy that foundered between the years 1793 and 1801, fourteen were of foreign build, an enormous proportion considering the small number of foreign-built vessels that is likely to have been employed.

In a "Discourse of Trade to the East Indies" (London, 1621), written by Thomas Mun, "famous in his time among merchants," is recorded the following statement of the casualties among shipping two centuries and a half ago:—

"Of 79 ships sent out" (to the East Indies) "before the month "of July, 1620, 34 had come home in safetie, 4 have been worn out "by long service, 2 were overwhelmned in the trimming there, "6 have been cast away by the peril of the seas, 12 have been sur-"prised" (whether by pirates or public enemies is not stated) "and "21 ships still remained."

The following is the proportion of casualties among the vessels of which the fates were ascertained:—

38	or	65·50	per cent. returned in safety.
8	„	13·80	„ were lost.
12	„	20·70	„ were captured.
58		100·00	

These figures do not give us the true average ratios of casualties, as in order to determine them it would be necessary to know the number of voyages performed and the time the ships were employed.

TABLE I.—*Showing the Average Numbers of Vessels Employed as Cruisers in the Royal Navy in each Year from* 1793 *to* 1815.

Year.	Ships of the Line.			Frigates.			Smaller Armed Vessels.		Troop and Store Ships, &c.		Total of all Classes.			Estimated Average Numbers of Men and Officers Employed.	Year.
	Ships.	Guns.	Tonnage.	Ships.	Guns.	Tonnage.	Ships.	Guns.	Ships.	Tonnage.	Ships.	Guns.	Tonnage.		
1793	55	4,247	93,104	80	2,821	63,388	71	1,053	—	—	206	8,121	177,266	43,000	1793
'94	88	6,750	147,881	118	4,217	95,702	96	1,430	—	—	302	12,397	272,495	80,000	'94
'95	98	7,568	165,900	133	4,830	111,909	120	1,795	—	—	351	14,193	312,891	91,000	'95
1796	106	8,168	179,566	138	4,990	118,006	144	2,177	—	—	388	15,335	339,931	105,000	1796
'97	106	8,077	177,684	138	4,971	119,352	182	2,666	—	—	426	15,714	348,831	114,000	'97
'98	104	7,988	178,018	132	4,821	117,214	223	3,195	—	—	459	16,004	356,462	115,000	'98
'99	103	7,817	176,505	128	4,691	115,546	238	3,422	—	—	469	15,960	356,849	115,000	'99
1800	100	7,662	172,177	130	4,785	119,475	240	3,457	—	—	470	15,904	357,031	107,000	1800
1801	102	7,851	177,476	132	4,871	123,051	227	3,260	—	—	461	15,982	361,903	127,000	1801
'02	—*	—	—	—	—	—	—	—	—	—	—	—	—	—	'02*
'03	54	4,097	95,233	89	3,270	82,962	140	2,118	30	23,196	313	9,494	245,519	80,000	'03
'04	79	6,173	142,297	108	3,957	99,696	228	3,243	37	24,100	452	13,378	332,383	97,000	'04
'05	93	7,286	166,952	122	4,459	113,241	297	4,109	31	16,630	543	15,854	375,883	115,000	'05
1806	104	7,986	182,823	132	4,805	122,357	342	4,746	29	14,052	607	17,537	411,086	115,000	1806
'07	108	8,209	189,010	136	4,935	125,868	369	5,171	27	15,656	640	18,315	431,135	124,000	'07
'08	113	8,579	198,531	138	5,019	128,590	400	5,673	25	16,535	676	19,271	456,052	125,000	'08
'09	111	8,460	196,363	144	5,210	135,609	419	5,946	27	18,014	701	19,616	468,996	125,000	'09
'10	108	8,265	192,978	145	5,299	138,998	389	5,638	33	23,320	675	19,102	466,076	137,000	'10
1811	105	8,061	189,290	136	4,970	131,811	361	5,155	38	27,964	640	18,186	452,552	139,000	1811
'12	102	7,889	185,862	123	4,505	120,292	352	5,079	40	29,908	617	17,473	438,950	137,000	'12
'13	100	7,747	183,467	124	4,597	124,849	358	5,233	46	31,812	628	17,577	449,298	138,000	'13
'14	73	5,563	132,968	118	4,462	122,598	326	4,875	48	36,411	565	14,900	392,684	111,000	'14
'15	38	2,925	70,596	80	3,058	83,652	218	3,344	36	27,621	372	9,327	253,903	81,000	'15
Annual average	93	7,154	163,395	124	4,527	114,280	261	3,759	20	14,052	498	15,440	366,281	110,180	Annual average
*Year of Peace, 1802	68	5,183	118,360	105	3,868	98,639	157	2,813	22	8,683	352	11,364	269,635	—	*Year of Peace, 1802

TABLE II.—*Showing the Numbers of Ships of the Royal Navy Accidentally Lost in Action and in each Year from* 1793 *to* 1815. (*N.B.—Vessels Captured or Destroyed Included.*)

Years.	Ships of the Line. Total Numbers of				Frigates. Total Numbers of				Smaller Vessels. Total Numbers of				Total of all Classes. Total Numbers of				Years.
	Vessels.	Guns.	Crews.	Men Lost.	Vessels.	Guns.	Crews.	Men Lost.	Vessels.	Guns.	Crews.	Men Lost.	Vessels.	Guns.	Crews.	Men Lost.	
1793	1	74	531	—	—	—	—	—	3	12	135	10	4	86	666	10	1793
'94	1	64	450	450	2	60	413	—	5	70	472	109	8	194	1,335	559	'94
'95	2	172	1,215	11	2	82	514	—	4	48	316	123	8	302	2,075	134	'95
1796	3	228	1,717	444	8	308	1,880	432	11	138	898	388	22	674	4,495	1,264	1796
'97	1	64	441	—	6	210	1,373	213	9	122	716	491	16	396	2,530	704	'97
'98	1	74	576	—	6	214	1,379	261	7	92	631	35	14	380	2,586	296	'98
'99	2	162	1,110	291	5	172	1,128	270	10	146	975	208	17	480	3,213	769	'99
1800	3	218	1,746	597	1	36	214	—	13	174	1,121	623	17	458	3,111	1,220	1800
1801	1	74	477	400	5	182	1,127	—	10	142	813	228	16	398	2,417	628	1801
'02	*—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	'02*
'03	1	64	442	442	5	168	1,171	—	7	98	609	128	13	330	2,222	570	'03
'04	2	148	981	25	5	194	1,216	71	15	116	898	7	22	458	3,125	103	'04
'05	—	—	—	—	2	80	502	2	14	166	965	281	16	246	1,467	283	'05
1806	2	138	927	353	—	—	—	—	11	162	954	676	13	300	1,881	1,029	1806
'07	2	148	1,071	781	6	224	1,462	428	25	261	1,478	732	33	636	4,011	1,941	'07
'08	—	—	—	—	6	204	1,370	240	23	282	635	200	29	486	2,005	440	'08
'09	1	64	412	—	2	64	422	—	16	206	1,127	592	19	334	1,991	592	'09
'10	1	74	576	360	3	106	678	11	10	112	557	144	14	292	1,811	515	'10
1811	3	216	1,729	1,718	5	182	1,256	253	9	80	509	77	17	508	3,494	2,048	1811
'12	—	—	—	—	4	136	886	13	16	186	965	328	20	322	1,851	341	'12
'13	1	74	531	—	1	38	284	—	12	192	1,139	138	14	304	1,954	138	'13
'14	—	—	—	—	—	—	—	—	15	172	1,111	574	15	172	1,111	574	'14
'15	—	—	—	—	2	74	510	50	3	48	295	103	5	122	835	153	'15
	28	2,116	14,962	5,872	76	2,731	17,875	2,244	248	3,028	17,319	6,195	352	7,878	50,186	14,311	
Vessels— Wrecked...	18	1,330	9,351	3,594	70	2,496	16,449	1,365	190	2,228	12,776	2,481	278	6,054	38,576	7,440	Vessels— Wrecked
Foundered	3	212	1,459	976	4	162	967	428	54	734	4,225	3,628	61	1,108	6,651	5,032	Foundered
Burnt.....	7	574	4,152	1,302	2	76	459	451	4	66	318	86	13	716	4,959	1,839	Burnt
	28	2,116	14,962	5,872	76	2,731	17,875	2,244	248	3,028	17,319	6,195	352	7,878	50,186	14,311	
*Year of Peace, 1802....	—	—	—	—	1	50	310	—	2	32	249	109	3	82	559	109	*Year of Peace, 1802

TABLE III.—*Showing the Number of Vessels of the Royal Navy Lost from* 1816 *to* 1857 *Inclusive.*

Years inclusive.	Ships of the Line.	Frigates.				Smaller Vessels.				Total of both Classes.			
		Vessels.	Guns.	Crews.	Men Lost.	Vessels.	Guns	Crews.	Men Lost.	Vessels.	Guns.	Crews.	Men Lost.
1816-22	None	3	114	874	—	14	188	1,294	265	17	302	2,168	265
'23-29	—	1	48	275	—	24	247	1,622	884	25	295	1,897	884
'30-36	—	2	74	435	18	8	57	429	123	10	131	864	141
'37-43	—	—	—	—	—	10	87	781	270	10	87	781	270
'46-50	—	—	—	—	—	6	52	808	251	6	52	808	251
'51-57	—	—	—	—	—	7	51	791	89	7	51	791	89
		6	236	1,584	18	69	682	5,728	1,882	75	918	7,312	1,900
Wrecked	—	6	236	1,584	18	65	644	5,451	1,705	71	880	7,035	1,723
Foundered	—	—	—	—	—	4	38	277	177	4	38	277	177
		6	236	1,584	18	69	682	5,728	1,882	75	918	7,312	1,900

RESOURCES *of* BRAZIL. *Presented by* JAMES HEYWOOD, M.A., F.R.S.

[Read before the Statistical Society, 19th April, 1864.]

BRAZIL is a vast, fertile, and thinly peopled country, occupying nearly one-half of the continent of South America.

About half a million of Indian inhabitants still remain, connected principally with the vast forests of the northern provinces: the collection and preparation of India rubber affords occupation to many of the aborigines in the neighbourhood of the River Amazon.

A desire to reach the East Indies by sailing westwards from Portugal led to the discovery of the eastern coast of South America in 1500: the territory thus discovered was taken possession of by the Portuguese naval commander, Pedro Alvares de Cabral. Jesuit missionaries early established themselves in Brazil, and entered into commercial enterprises with the aid of the natives, whose services and industry they skilfully obtained for the aggrandisement of their order.

During the sixteenth, seventeenth, and eighteenth centuries, Brazil was a colony of Portugal.

In 1807, the invasion of Portugal by the army of Napoleon I, under Junot, led to the retirement of the Prince Regent of Portugal with his family to Brazil; a British squadron escorted the Portuguese fleet, and a court was instituted at Rio de Janeiro.

Portugal afterwards became a sort of dependency of Brazil, and was governed by a council of regency, the royal family remaining in South America until the restoration of peace.

In 1821 a constitution was granted to Brazil, and in 1822, Don Pedro, son of the King of Portugal, was chosen Emperor by the Brazilians, and Brazil became an independent State.

A fresh constitution followed this change.

The Emperor has authority to select ministers of state, to withhold, temporarily, his sanction from legislative measures, and to dissolve the Chamber of Deputies. The country is divided into electoral districts, and the privilege of voting is conferred on all persons possessing an annual income, of any sort, of a hundred milreis, which is a little more than 10*l.*, but minors, monks, and servants are not allowed to vote.

The 10*l.* voters choose electors, each of whom must have an income of 200 milreis, or a little more than 20*l.* a-year, as a qualifica-

tion; the electors choose the deputies, who must have an income of 400 milreis each, or about 45*l.* per annum.

A somewhat different system is pursued in the selection of candidates for the Senate. Each candidate for that office must have an income of 800 milreis, or about 90*l.* a-year; and in the case of a vacancy, three persons are elected for the province by he system of double election. From the three candidates so chosen, the Emperor selects one as a senator, which office is tenable for life.

The general Legislative Assembly consists of two houses, the Senate, consisting of 55 members, and the Chamber of Deputies, comprising 122 representatives. Each deputy is paid for his attendance, 2,400 milreis, or about 270*l.* a-year besides travelling expenses; and the pay of the senator is 3,600 milreis, or about 400*l.* a-year. All persons born free in Brazil are Brazilian citizens; thus the Indians are citizens; slaves, as soon as they are freed are qualified to be primary voters for the election of deputies and senators, if they can make out the revenue of 100 milreis; the free born son of the freed man has all the rights of Brazilian citizenship.

There are seven Ministers, of the Empire or Interior, Justice, Foreign Affairs, the Marine, War, Finance, and Agriculture Commerce and Public Works. One of these is president, and considered chief of the ministry. The ministers are named by the Emperor, and are, in practice, dependent on majorities in the Legislature. Changes of ministry have latterly been very frequent—almost annual.

The Emperor's ministers are assisted by a Council of State, consisting of twelve ordinary and twelve extraordinary members, all named by the Emperor for life. The twelve ordinary members are constantly consulted on matters of administration and international questions, and are indeed a regular part of the system of Government. The whole twenty-four are convened on graver occasions. The Councillors of State, ordinary and extraordinary, are mostly ex-ministers.

The Brazilian titles of nobility (marquis, count, viscount, and baron) are only for life, and do not confer any political position. They are given as rewards of public service, as well as for electioneering influence.

At the head of each province is a president appointed by the central Government; and in each province there are district Chambers and a general Council (the Legislative Assembly of the province), the members of which are elected by the same voters as for the election of deputies and senators; and the same voters elect the justices of the peace for the municipal districts. All these provincial elections are for four years.

Population.

Mr. Christie, Minister at Rio de Janeiro, in a report to Earl Russell, 5th August, 1860, estimates the whole population of the empire of Brazil at about 7½ millions, the aborigines being included, who are under a million, and the slaves also included being about three millions.*

The superficial area of the empire is calculated by some writers at 3,000,000, and by others at 2,500,000 square miles: on the latter supposition, there would be three persons, on an average, to each square mile. Brazil, in its extent of territory, is second only to the colossal empires of China and Russia, and is about the size of the United States of America previous to their separation into the Federal and Confederate States.

Large tracts of Brazil are uninhabited, or peopled only by a scattered population. The masses of inhabitants congregate near the coast, and around the chief sea ports; thus the district of the municipality of Rio de Janeiro comprises about 450,000 inhabitants, and the slaves in that district are rather less than half of the number. In the province of Rio de Janeiro, the slaves exceed in number the free population.

Bahia contains but a small proportion of whites, and the black inhabitants are so numerous, that it resembles an African city. Out of 125,000 inhabitants of Bahia, seven-eighths are said to be blacks, and nearly all the negroes are slaves.

Pernambuco has a population of about 80,000, of whom one-third are estimated to be slaves; one-third coloured free blacks; and remaining one-third are Brazilians and foreigners.

Whilst Brazil remained a colony of Portugal, but few women accompanied the emigrants to South America: the earliest European settlers intermarried and mixed with Indian women: afterwards an extensive intermixture of race occurred with the Africans who were bought for slavery.

The mixed population increases continually and rapidly in Brazil, and many of the so-called whites hardly deserve the appellation.

In the northern provinces the Indian element preponderates. In South Brazil the negroes are numerous. The greater part of the population of the Brazilian empire probably consists of mixed breeds, each of which has a distinguishing name; thus Mulatto denotes the offspring of a white with a negro; and Mameluco, that of a white with an Indian; Cafuzo denotes the mixture of the Indian and negro; Curiboco, the cross between the Cafuzo and the Indian; Xibaro, that between the Cafuzo and the negro. These are seldom,

* "Slave Trade Correspondence, B," presented to Parliament, in 1861, p. 44.

however, well demarcated; and all shades of colour exist in the country.*

Slavery.

Brazilian merchant ships contain a large proportion of slaves in their crews, which may be a reason for such ships seldom touching at any British ports, as slave sailors landing in Great Britain would immediately become free.

In 1826 a treaty was made between Great Britain and Brazil, providing that at the expiration of three years from the exchange of ratifications, the carrying on of the slave trade by any Brazilian subject, should be unlawful, and should be deemed and treated as piracy.

During those three years, terminating in 1830, a considerable increase of the trade in slaves took place; much Brazilian capital was embarked in slave traffic, and the greatest possible use of that source of profit was made as long as it was permitted.

In 1828 the number of slaves imported into Rio, amounted to 43,555;† and during the twelve months ending 30th June, 1830, the same port received 56,777 negroes, besides which, there were 21,554 imported into other parts of Brazil, making a total, in that year, of 78,331 imported slaves.‡

For twenty years, after 1830, the slave trade continued without abatement, and during that period a million of slaves were imported into Brazil. Lord Howden, Minister at Rio de Janeiro, reported an importation of upwards of 60,000 negroes in 1847.§ Slavers were seized in 1850 by orders of the British Government in the Brazilian ports and rivers, and this decided measure led to such active efforts on the part of the Brazilian Government to suppress the slave trade, that in 1851, Sir James Hudson reported that only 460 slaves had been imported into Brazil during the first quarter of that year. The slave trade has not been continued in Brazil since 1851, but there are upwards of three millions of slaves now in that empire.

Coffee plantations have been so profitable, that they have much increased in number, and many slaves have been brought from the northern or equatorial provinces of Brazil to the coffee grounds of the more southerly provinces.

An internal slave trade is thus kept up, involving some of the worst cruelties of forced removal of slaves from homes and separation of families. Mr. Westwood, the Consul at Rio de Janeiro, wrote to the Earl of Clarendon, 22nd January, 1857, "During the

* "The Naturalist in the River Amazon," vol. i, p. 35.
† "Walsh's Notices of Brazil," vol. ii, p. 322.
‡ "Sir T. F. Buxton, Slave Trade," p. 5.
§ "Slave Trade Correspondence, B," presented in 1849.

"last year, the value of slaves increased so much in this province, "that large numbers were purchased in Bahia, Pernambuco, and "other parts, by unfeeling speculators, and brought to this city for "sale. Many of these unfortunate beings were brought from "estates where they were born, and torn away from relations and "old associations in the most inhuman and cruel manner possible." "Amongst the slaves transported from the north," lately said a Brazilian senator in the Senate, "I have seen some in the market of "Rio de Janeiro, who are children of 10 and 12 years old, who have "left their parents in the north, and are sold here. A slave from "the north told me that he was married in the province where he "was sold, and that his wife remained there, and he was sent here."* Mr. Scarlett, Minister at Rio de Janeiro, made a strong appeal to the Brazilian Government to stop this traffic in 1858, but without effect. According to recent reports from Mr. Christie, about 5,000 slaves a-year have been imported in this way for sale into Rio Janeiro during the last twelve years.†

This large deportation of slaves from the northern provinces is necessarily causing a dearth of labour in the north, where the heat being greater than in the south, African labour is not so easily replaced by Portuguese or German immigration.

The Brazilian nation is the owner of slaves estimated in the last annual report of the Finance Minister at 1,520. These are located on different national estates. The unproductiveness of these estates under slave labour has been the subject of complaint for some years past, in the Finance Minister's reports, and it is an economical point of interest on account of the dearness of slave labour. The Finance Minister stated in 1860, "The gross receipts of the Piauh estates "were, in the financial year 1858-59, 3,931*l.* 10*s.* 4*d.*, which, dis- "tributed among 807 slaves, gives a result of about 4*l.* 17*s.* 5*d.* per "annum for each slave, which is little more than the monthly "wages of a slave! And from this sum no deduction is made for "rent, or for increase of cattle. The receipts of the Pará estates "during the same year amounted to 3,126*l.* 15*s.* 3*d.*, which, dis- "tributed among 127 slaves, gives the annual sum of 24*l.* 12*s.* 3*d.* "for each slave."‡ The Finance Minister recommended the sale of some of the estates and the removal of the slaves. In the last report he recommended the emancipation of slaves who from old age or permanent illness are unable to do any work, and he begs the Legislature to authorize their gratuitous emancipation; but he does not explain how they are to subsist after emancipation. "The

* Speech of Senator Silveira da Motta, 17th May, 1861, in "Slave Trade "Correspondence, B," presented 1862, p. 51.
† "Slave Trade Correspondence, B," presented 1863, p. 112.
‡ Ibid., presented 1862, p. 40.

"Government not considering itself authorised to grant emancipa-
"tion, except by depositing in the public coffers the price at which
"the slaves may be valued by the proper authority, you will see
"that, in the impossibility of the slave's acquiring freedom, his lot
"becomes much worse, he is condemned to a perpetual captivity
"and has no benefit from his long previous services and the fidelity
"and devotion with which he gave them. In such circumstances
"humanity implores you to resolve on the gratuitous emancipation
"of slaves of the nation when, by reason of advanced age or per-
"manent infirmity of a grave character, they become unable to do
"work for the nation." But how are these infirm slaves to maintain themselves?

Since the commencement of the present year, a Brazilian senator has introduced into the Senate a bill for compulsory emancipation of all slaves held by the Brazilian nation, as well as all slaves owned by convents and by foreigners (as for example Englishmen) from countries in which slavery is illegal. The bill has been rejected. The same senator has of late years unsuccessfully proposed bills for abolishing public sales of slaves by auction, and preventing the separation of husband and wife, parents and children by sale, and for other mitigations of slavery.

The following are the last published consular returns of prices of slaves in Brazil, 30th June, 1862:—

Rio de Janeiro: Slaves for agriculture and mining, males, 107*l.* to 193*l.*; females, 107*l.* to 160*l.*; for domestic service, males, 129*l.* to 214*l.*; females, 107*l.* to 193*l.* Rio Grande do Sul: for agriculture, males and females, 130*l.*; for domestic service, males, 151*l.*; females, 135*l.* Bahia: African males, 180*l.*; African females, 108*l.*; Creole males, 108*l.* to 162*l.*; females, 65*l.* to 86*l.* Pará: males, 133*l.* to 177*l.*; females, 111*l.* to 144*l.*; males, with trades, 166*l.* to 222*l.*

The cessation of the slave trade has necessarily increased the price of slaves. It may be presumed also, in the absence of all statistics, that the number of slaves has diminished and is diminishing, after a loss for twelve years past of importations at the rate of 40,000 to 60,000 a-year. Cholera and other epidemics have carried away a large number of slaves since 1850; cholera alone is said to have carried away 16,000 in 1855. On the other hand, there will necessarily be more care of slaves, more attention to breeding among them, and fewer manumissions. But as regards breeding, there is the strong prejudice of the slave women against bringing up their children to be slaves to contend with, which leads to abortions, infanticides, and large mortality among slave children from neglect.

It is calculated that there are under the control of the Brazilian

Government about 10,000 free Africans (including progeny) who have been rescued in former years from slavers by British cruisers, and confided to the care of the Brazilian Government under the provisions of the Slave Trade Treaty with Brazil, the Brazilian Government guaranteeing their freedom. The treatment of these free blacks has been for the last twenty years a subject of unpleasant correspondence between the English and Brazilian Governments; and these 10,000 free blacks are said to be kept in a state of virtual slavery. As late as the 8th January, 1863, Lord Russell remonstrated against the application of regulations to these free blacks which, he said, "practically consign to six years forced servitude, men, women, "and children, who are free according to the showing of the "Brazilian authorities themselves."

Commerce.

The values, sterling, of the imports and exports of Brazil for the year 1861-62, were, imports, about 12,376,000*l.*; exports, about 13,600,000*l.*

During the same financial year, 1861-62, the sterling value of the imports from Great Britain to Brazil amounted to about 5,918,646*l.*, and the value of the exports to Great Britain to about 6,127,718*l.*

The Brazilian import duties have since 1844 been placed on a general basis of 30 per cent. *ad valorem*. Treaties with Great Britain and other countries, limiting import duties to 15 per cent., expired in 1844.

Mr. Baillie's report of January, 1861, states "that after the "expiration of all these treaties, Brazil introduced a general and "highly restrictive tariff in 1844, by which an import duty of 30 per "cent. was imposed on foreign goods in general, while on certain "articles, duties were levied ranging from 2 to 50 per cent. *ad* "*valorem*. The export duties remained as they had been fixed in "1835, viz., 17 per cent. on the most important Brazilian products, "and from ½ to 17 per cent. *ad valorem* on others."* In 1858 the excessive dearness of provisions led to a great reduction in the duties on the chief imported articles of food, dried fish, jerked beef from the River Plate, and wheat flour, which were reduced to 5 per cent. There was also at this time a reduction of one-half of the duties on the principal imported manufactures. In 1860 the import duties were increased from 2 to 5 per cent., and the export duties by 2 per cent., to bring increase of revenue.

The provincial Assemblies of Brazil are permitted to levy export duties. Thus in Pará, one of the nothern provinces of Brazil, the export duties vary from 5 to 10 per cent., the most productive

* "Reports of Secretaries of Legation," No. 4, p. 461.

article being Indian rubber: the import duties vary from 18 to 80 per cent.

On the southern frontier of Brazil, near the River Plate States, a great deal of smuggling is carried on, which, according to the report of the Minister of Finance of 1860, is rapidly increasing. The duties imposed in the Brazilian port of Rio Grande are so much higher than those of Monte Video, that British manufactures passing the frontier of the River Plate States can be furnished to the interior of the province of Rio Grande do Sul, 20 per cent. cheaper than the regular merchant can afford to sell them. The Brazilian duties vary from 50 to 80 per cent. on the cost price in England.*

Long and vexatious formalities characterise the Custom House system of Brazil. Merchants must pay the Custom House agents if they wish to get easily through the multitudinous forms required in the ports of that country. Portuguese habits are retained in Brazil, and the same ordeal of health visits, police, and Custom House searchers is insisted upon before a passenger is allowed to leave his ship.

A long string of regulations is provided, and a ship master or merchant, who innocently contravenes them, is liable to heavy fines, and even confiscation of the ship, or its property, although there has been no fraudulent intention.†

All the foreign trade with Europe and the United States is conducted in foreign vessels, the Brazilian vessels confining themselves to coasting voyages and to the River Plate.

The following are the number of vessels, tonnage, and crews which entered and left the Brazilian ports in 1861-62 on foreign voyages:—

	Entries.	Departures.
National—		
Vessels	190	126
Tons	31,308	29,129
Crews	1,719	1,365
Foreign—		
Vessels	2,572	2,463
Tons	904,936	1,023,402
Crews	41,542	41,158
Total—		
Vessels	2,762	2,589
Tons	941,244	1,052,531
Crews	43,261	42,523

* "Reports of Secretaries of Legation," No. 4, p. 461.
† "William Hadfield's Brazil," London, 1854, p. 157.

The following are the numbers of vessels and tonnage of the coasting trade for 1861-62:—

	Entries.	Departures.
Vessels	3,308	3,062
Tons	232,587	621,569

Productions.

Coffee, sugar, cotton, and tobacco, constitute the principal productions of Brazil; as well as India rubber, Paraguay tea, rum, and cocoa.

During five years, 1852-57, the annual average value of the exports of these products was as follows:—

	Milreis.		£
Coffee	43,990,620	=	4,948,945
Sugar	20,099,740	„	2,261,220
Cotton	5,518,850	„	620,871
Tobacco	2,162,200	„	243,247
India rubber	2,336,780	„	262,888
Paraguay tea	1,335,684	„	150,264
Rum	913,887	„	106,186
Cocoa	758,472	„	85,328

The quality of Brazilian cotton greatly deteriorated some years ago from want of care, and from the mixture of inferior qualities with the finest descriptions of that product.

During the Civil War in the United States of America, Brazilian cotton has obtained an important position, being regarded as similar, for fine numbers, to the cotton of New Orleans and Texas. A remarkable increase in the export of gold and silver bullion from Great Britain to Brazil has taken place during the American war; the value of these exports being—

	Exports of Bullion from Great Britain to Brazil. £
In 1861	169,813
„ '62	452,392
„ '63	1,731,037

The estimate of the supply of cotton from Brazil for the year 1864, to different countries, is given in the "North American "Review," for April, 1864, as follows:—

Brazil.—Supply of Cotton for 1864.

Bales.	Average Weight.	Pounds Weight Avoirdupois.
155,000	180	27,900,000

The reviewer remarks, that there is a larger proportional supply of fine Egyptian and Brazilian cotton than of any other.

Paraguay tea is exported to the River Plate, where it is an habitual beverage in Buenos Ayres. The only Brazilian provinces which export it are those of Rio Grande do Sul and Parana.

Companies have been formed in Brazil for the purchase of articles of food, such as salt fish, wheat, flour, and fresh meat; and when there is no deficiency in the market, these articles are sold at high prices.

Tables of the average official prices of articles of food in Brazil, according to weekly returns, from 1850-51 to 1858-59, show that the seven principal articles of public consumption, viz., rice, sugar, dried meat, mandioca flour, beans, Indian corn, and bacon, have doubled in price in the eight years, 1850-51 to 1858-59, and since the population has not increased in so great a proportion during that time, nor the produce diminished, it is evident that the monopoly of these food companies must affect so extraordinary a rise in price.

Fresh meat has also risen enormously in price, notwithstanding that the breeding of cattle and pigs has undergone no diminution. The trade in dried meat has diminished, whilst the prices have increased, notwithstanding a reduction in the import duties on this article.

*Revenue and Expenditure.**

The Minister of Finance estimates the receipts for the financial year, 1864-65, at 51,000,000$000, fifty-one millions of milreis (thousand reis). The value of the milreis in English money constantly fluctuates; it is at present a little above 2*s.* 3*d.*, but in this paper it has been calculated always at that value, 27*d.* The estimated revenue, therefore, for 1864-65, is about 5,737,500*l.* The expenditure estimated for 1864-65 is 57,846,407$766 or about 6,504,720*l.*

We may say, roughly, that the estimated revenue for 1864-65 is 5¾ millions sterling; and the estimated expenditure 6½ millions, showing a deficiency of three-quarters of a million. In addition to the 51,000,000 milreis revenue, there is an estimate of Government deposits to the amount of 3,340,854 milreis, or about 375,846*l.*, which may be used in aid of revenue, but which will of course be strictly a debt.

In the financial year, 1861-62, the revenue was higher than any previous year, and reached the sum of 52,078,085 milreis, exclusive of deposits. This amount has not since been attained. The Finance Minister had calculated 51½ millions of milreis of receipts for 1863-64, with a surplus of 470,946$362. But this estimate has

* The following particulars about revenue are taken from the "Annual Report "of the Minister of Finance," presented to the Legislative Assembly in May, 1863.

proved fallacious, and instead of a surplus there is a deficit; and another deficit is announced for the coming year, 1864-65. Up to the year 1856-57, the revenue annually exceeded the expenditure, but since then it has been constantly the other way, even in the year 1861-62, when the revenue reached its highest point. In 1860 a Committee of the Chamber of Deputies reported an accumulation of deficits for the end of the financial year, 1862-63, estimated at 10 millions of milreis (1,125,000*l.*), and the Legislature authorized the issue of treasury bills to the extent of 8 millions of milreis. At the same time the customs and export duties were increased. According to Mr. Baillie, the Secretary of Legation at Rio de Janeiro, in his reports on the commerce and finance of Brazil, laid before Parliament, the annual estimates of expenditure never include everything, and are always exceeded, and the deficits are probably understated.* Loans raised by the Brazilian Government during the last year, 1863, to the extent of four millions sterling, have cleared off the treasury bills issued under the authorization of 1860, and all deficit up to the end of 1863, and added to the permanent national debt. The Minister of Finance, in his annual report of 1863, urgently invites the Legislature to provide for future equalization of revenue and expenditure by economy or new taxes.

The chief item of revenue is customs' duties, more than half of the estimate for 1864-65, viz., 29,650,000$000, or about 3,335,625*l.* The export duties amount to 7,759,576$000, or about 872,552*l.*; that is, the import duties amount to about 3½ millions sterling, and the export duties not quite 900,000*l.*

The expenditure is distributed as follows among the different ministries:—

Ministry of the empire or interior	.....	4,781,494$730
„ justice	.....	3,209,595$835
„ foreign affairs	.....	767,430$553
„ marine	.....	7,752,091$920
„ war	.....	13,206,274$349
„ finance	.....	19,131,198$512
„ agriculture, commerce, and public works		8,998,321$867

The estimate for the ministry of the empire includes the allowance to the Emperor (800,000 milreis, or about 90,000*l.*), Empress (96,000 milreis, or about 10,900*l.*), and the other members of the imperial family, the ministers, council of state, presidents of the provinces, senators (275,550 milreis, or about 31,000*l.*), and deputies (410,480 milreis, or about 40,174*l.*) The chief part of the estimate for the ministry of foreign affairs, is for the diplomatic and

* "Reports of Her Majesty's Secretaries of Legation," &c., No. 5, presented 1862, pp. 84 and 258.

consular services, the whole expense of which is 597,430 milreis (or about 63,210*l.*). The estimate for the ministry of finance, includes the interest on national debt and sinking fund payments.

There has been a very great increase both of revenue and annual expenditure of late years. Compare the estimates for 1864-65 with the revenue and expenditure of 1855-56:—

	Revenue.	Expenditure.
1855-56	38,634,356$	40,242,648$
'64-65	51,000,000$	57,846,407$

In the year 1848-58, the revenue was little more than 25 millions of milreis, so that it has more than doubled since. The expenditure for the year 1844-45, was 25,458,230$334.*

The national debt of Brazil may be roughly stated at about 21 or 22 millions sterling. It is made up as follows, as shown by the last annual report of the Minister of Finance:—

		£
Foreign debt, up to 31st December, 1862	—	7,205,000
National funded debt „	69,658,000$000	7,836,525
In Great Book	137,553$445	15,413
In provinces (not in Great Book)	220,477$323	24,804
Debt anterior to 1827 (not inscribed)	108,743$139	12,234
Treasury bills to 30th April, 1863	6,576,000$000	738,800
Government paper money in circulation, March, 1863	35,310,469$000	3,975,802
Public deposits	1,767,345$521	198,816
Orphans' fund	9,161,901$312	1,029,464
Dead and absentees' fund	3,056,698$716	342,878
Passive debt	1,473,177$105	165,627
		21,545,373

Since this estimate was published, a loan of 3,300,000*l.* has been raised in England, and another of 600,000*l.* in Rio de Janeiro: total, 3,900,000*l.* But with these loans 2,855,500*l.* of the foreign debt and the 738,800*l.* of treasury bills are to be paid off; total, 3,544,300*l.*, so that there will be only an increase of 306,700*l.* to the national debt, which may be estimated roughly at 22 millions sterling.

In addition to this debt, liabilities of the Brazilian Government by guarantees of interest to railway undertakings, should be mentioned. There are guarantees of 7 per cent. interest (5 per cent. guaranteed by the imperial Government and 2 per cent. by the

* Mr. Baillie's report, July, 1861, "Reports of Secretaries of Legation," No. 5, p. 83.

respective provincial Governments) on the following amounts of capital for the following undertakings:—

	£
Don Pedro II railway (in province of Rio de Janeiro)....	3,000,000
Pernambuco „	1,200,000
Bahia „	1,800,000
San Paolo „	2,000,000
	8,000,000

The imperial Government have therefore guaranteed for these useful public undertakings 5 per cent. on 8 millions sterling, or 400,000*l.* a-year. These guarantees of 7 per cent. are of course not guarantees of interest to the shareholders, irrespective of profit or loss in working the railways; loss in working has first to be provided for out of the 7 per cent. guaranteed.

Price *of* Edibles *and* Potables *in* A.D. 1506. *By* Colonel W. H. Sykes, M.P., F.R.S., *President of the Statistical Society.*

[Read before the Statistical Society, 15th December, 1863.]

I am indebted to the Master of the Salters' Company, Alderman Gibbons, who obligingly acquiesced in my application for a copy of a bill of fare, with prices and quantities attached, of a dinner for fifty members of the Salters' Company in 1506, three years after the true English shillings were first coined, before which the Saxon shilling was 5*d.* and then 4*d.*, and the Normans introduced a nominal shilling of 12*d.*; and three years after Henry VIII married Catherine of Arragon, and fourteen years before the interview of Henry and Francis I at the Field of the Cloth of Gold on the 31st May, 1520. It was plainly a very modest feed, which their successors of the present day would inevitably eschew, for the whole cost of the dinner for fifty people was just 1*l.* 13*s.* 2*d.*, or about $7\frac{3}{4}d.$, say 8*d.*, per head, or one-fifteenth of what the members of the Statistical Club pay for their dinner without wine, and one-sixtieth or one-ninetieth of a public or corporation dinner with wines. But the bill of fare tells us of something more than of the frugal habits of the worthy Salters,—it tells us of the marvellously contrasted relations between prices and provender in 1506 and 1863. It tells us also of the feelings of the age with respect to the constituents of a grand civic dinner, suitable to the dignity of a City Company; for we find perfumes were used, at the cost of 2*d.*, and the vessels were garnished at the cost of 3*d.* But the dignity of the entertainment seems to have been indicated by the most costly item in the bill of fare, namely, one *swan* and four geese, 7*s.* Now as there were twelve pence to a shilling in those days as now, although only nine pence to an Irish shilling, consequently the average cost was $16\frac{8}{10}d.$; but we may fairly consider the noble swan estimated at half-a-dozen geese, which might make the cost of the dish of the swan nearly one-sixth the cost of the whole dinner. Evidently the tastes and the teeth of the gastronomers of the day must have been very different from those of us degenerate moderns, or they must have found the mastication of the noble bird, supposing him to have attained a mature age, but poorly compensated by the dignity of the display, great as it must have been if the price of the bird be a standard of comparison with the price of the poor chickens (to us degenerates modern objects of luxury), thirty-six of which were put upon the table for 4*s.* 6*d.*, or one penny halfpenny each; for which, alas, in these days, notable housewives have to pay from 24 pence to 60 pence each; and the bill of fare tells us that fifty eggs cost *two pence.* Those were days for rich custards and puddings, one feature of what was thought necessary in John Bull's repast before the introduction of French cookery is wanting; there are no massive joints, no sirloins of beef, no haunches, saddles, or legs of mutton, and no pork joints at all, the only contributions from quadrupeds being two rumps of beef tails and four breasts of veal, and nine rabbits, the latter costing 7 farthings each. There is a total absence of fish, which would seem to imply there was not a fish market, or that the supply was scanty and dear, although the Fishmongers, one of the great and wealthy companies of London, date from 1384, or 122 years before the date of the dinner. Six quails cost 3*d.* each, an extravagant price compared with the chickens. The potables were limited to a kilderkin of ale, $3\frac{1}{2}$ gallons of Gascoigne wine, and a solitary bottle of sweet Muscovadine; as the kilderkin contained 18 gallons, or 72 quarts, the lieges needed within a fraction of $1\frac{1}{2}$ quarts each, at $1\frac{2}{11}d.$ per quart, to wash down the probably tough swan; and the tarts and 4 gallons of curds, at a penny a gallon, and $1\frac{1}{2}$ lb. of comfits at 2*d.*, were associated with the consumption of rather more than a pint of wine per head, at $1\frac{1}{14}d.$ per pint; although the Cape of Good Hope had only been passed eleven years before the date of the dinner, and the West Indies discovered only fourteen years before, the scarcer and costly products of tropical India found their way to the Salters' table; the contributions, no doubt, of the overland trade carried on by the Venetians. There are 2 oz. of pepper, at 2*d.*, from the Malabar Coast, and 2 oz. of cloves and mace, at 4*d.*, from the Moluccas; 3 lbs. of sugar, at 8*d.*, must have come from India; dates from Arabia or Morocco, and raisins from Spain or Turkey,—testifying to England participating, in Henry VII's day, in the trade with remote regions,—but little contemplating its expansion to 335 millions in 1863. The Salters' bill of fare has no charge for the article of salt, and there are no apples and, of course, no potatoes. The worthy Salters did not confine their enjoyments to the gastric regions, but incurred the expense of 2*d.* to perfume their persons or the atmosphere of their hall; nor did they omit a manifestation of their taste in *garnishing* the vessels at the cost of 3*d.* Evidently the services of the cook were estimated in a disproportionate ratio to the total cost of the dinner, for the remuneration of 3*s.* 6*d.* was nearly one-tenth of the total expense; but whether his skill was manifested in a "premier "service" entrées, relevé, and entremets, as at the dinner at the Salters' Hall of which I had the gratification of partaking, on the 18th November, 1863, the bill of fare of 1506 does not enlighten us.

Water was a marketable commodity, for 3*d.* was paid for the supply for the cooking. Our coal-fields were then contributing fuel, for 4*d.* was expended for a quarter of a load, but what that load weighed, whether so many cwts., or a cart load, or a chaldron, or any other quantity, the bill of fare does not say. Finally, the bill of fare does not enlighten us about toasts and speeches, characteristics of modern public dinners. Possibly our ancestors were too simple minded to attempt to win applause by addresses which too frequently sacrifice truth to rhetorical display and conventualities.

A Bill of Fare for Fifty People of the Company of Salters, A.D. 1500.

	£	s.	d.
36 chickens	–	4	5
1 swan and 4 geese	–	7	–
9 rabbits	–	1	4
2 rumps of beef tails	–	–	2
6 quails	–	1	6
2 oz. pepper	–	–	2
2 „ cloves and mace	–	–	4
1½ „ saffron	–	–	6
3 lbs. sugar	–	–	8
2 „ raisins	–	–	4
1 lb. dates	–	–	4
1½ „ comfits	–	–	2
Half hundred eggs	–	–	2
4 gallons of curds	–	–	4
1 gallon gooseberries	–	–	2
Bread	–	1	1
1 kilderkin of ale, 18 gallons beer measure	–	2	3
Herbs	–	1	–
2 dishes of butter	–	–	4
4 breasts of veal	–	1	5
Bacon	–	–	6
Quarter load of coals	–	–	4
Fagots	–	–	2
3¼ gallons of Gascoigne wine	–	2	4
1 bottle Muscovadine	–	–	8
Cherries and tarts	–	–	8
Verjuice and vinegar	–	–	2
Paid the cook	–	3	4
Perfume	–	–	2
1 bushel and a half of meal	–	–	8
Water	–	–	3
Garnishing the vessels	–	–	3
	1	13	2

MISCELLANEA.

CONTENTS:

I.—*Statistics of Educational Results. By* EDWIN CHADWICK, C.B.*

Much of the scepticism prevalent as to the power and value of popular education arises from the inability of the educationist, or of the school teacher, to adduce satisfactory statistical evidence of the moral or of the intellectual results from any special courses of instruction or training, as manifested in after life. From the most advanced schools the pupils are discharged and sent abroad amidst the crowds of large towns; and the closely occupied school teacher usually only sees or hears of the careers of a few of them casually. From the loose observations of the few, he draws his own conclusions. Whether the majority have done well or ill, he cannot, when cross-examined, pretend to answer. How they are distinguished from others who have been under an educational course different from his own, he cannot tell. On the other hand, from conspicuous instances of moral or intellectual failures, generally exceptional, parties, particularly members of Parliament, draw inferences adverse to popular elementary education.

In poor-law administration I found it to be important to obtain more certain and complete information than had hitherto been obtained, of the moral as well as the intellectual results of training and education. I adopted, as a rude practical test of moral results, the fact of a child getting into a place and keeping it for a year. In a large proportion of the town parishes, not above one-third of the children so tested were found in conditions of self-supporting or respectable industry. In order to ascertain the results of particular methods of instruction, I got in some parishes circular letters sent to the employers of children, requesting answers to questions as to their experience of them, and as to any defaults attributable to education or training for which remedies were needed. Few answers were got that could be depended upon. Many of the employers were themselves ill educated, and incapable of giving proper answers. I then got several of the new union chaplains to make house-to-house visits to the employers of the children, to make the requisite inquiries from them. These first visits of the chaplains to the employers of the orphan or destitute female children, sometimes led them into common brothels and terrible haunts of vice, to which the poor children had been allowed to be taken without inquiry, and places where clergy-

* From the *Museum*, a quarterly journal of education. Edinburgh: Gordon.

men had never before been seen. Then it was made more apparent, that there were common conditions of domestic service in which the efforts of all moral or religious instruction must be destroyed,—places where a poor employer, the master and the mistress, with the male apprentice as well as the young girl, were crowded together in one sleeping-room,—places in beer-shops and common lodging-houses. Then, again, it was made more clear, in respect to the parish apprentices of good intellectual training, that, their physical training having been neglected, they were physically inapt for the work to which they were put, or incapable of it, or were maltreated for their presumed unwillingness, and ran away. The ignorant and irresponsible local administrators of the local self-governments, in their impatience to be rid of burdens, took any offers for the service of the children, and hence created additional burdens from a delinquent as well as a pauper population. The immediate results of these house-to-house visitations and examinations, beyond the possible care of the school teacher, was to impress upon the guardians the necessity of exercising care to obtain fit places for children, as well as to modify the training, so as to prepare the children for suitable occupations. Rules have in many instances been framed for these purposes, and in well administered district schools the house-to-house visitation of the children, at their places of work or of habitation, is provided for as a regular and responsible service. In some instances the new duties have been devolved upon an officer of the class of a relieving officer. But more inferior appointments ought to be prevented by positive regulation. The service is one which, for secular purposes alone, requires a high amount of discretion and moral influence, which is given by education and position such as is only available from amongst the clergy. The clergyman's office and position are specially important for the moral support of lonely orphan children. Viewed administratively, however, I have to submit this service of house-to-house visitation as a proper audit of public educational institutions, and as an important means of testing and advancing their efficiency. I found great differences in results from the teaching in different schools where the subject-matters taught are alike, but where the conditions and manners of the teachers were different. These differences strongly impressed me with the importance which such an order would enforce of having well-mannered persons as teachers.

The regular topics of inquiry with which such an officer should be charged, would be from the employed as well as the employer, as to the school instruction, "Which portions of it (to use the phrase in the competitive schools) are found practically to *pay* the best? What additions or variations are needed for the service, or for the happiness of the individual taught? What of the book instruction is found to have been useless, or a mere waste of time, or, to use the school slang, has been mere *rot*, that ought to have been cut away?" And he should report accordingly. The benefits derivable from such a system of visitation—less of the schools themselves than of the domiciles of those who have been brought up in them—are great. From those already instituted in connection with the district half-time poor-law schools in England, there are now derivable educational

statistics, founded on the house-to-house visitations, of a new value to determine the results of educational and training power.

These district schools may be considered as being to some extent children's hospitals, into which are received the most enfeebled and physically deteriorated and wretched of the population. They contain a large proportion of scrofulous, idiotic and partially idiotic, deaf and dumb, and bodily disabled children. The law of England does not yet protect the children of profligate parents from the exercise of authority by those parents, or prevent the prostitute mother from claiming her daughter at the age of puberty, and taking her to live in her own haunts, and out of the reach of after visitation and influence. Eliminating such cases, taking the cases of what are called pure orphans, it appears on statistical returns, tested by the requisite house-to-house visitation, that of those who can be accounted for as in good, respectable, self-supporting service, the moral failures by misconduct amounting to a disqualification for such service, are reduced to about 2 per cent. Another source of valuable statistical evidence of educational and training power is afforded by the administration of the public schools maintained for children educated for the army and for the navy, and by the returns from responsible military and naval officers as to the conduct in the regiments or on shipboard of those so trained and educated. Some of the most interesting and important of the educational statistics, and the best methods of registering the facts for those statistics that I have met with, are those devised and conducted by the Rev. George Fisher, the Principal of the Greenwich Hospital School. Some foreign commissioners of education to whom I have shown them have expressed their concurrence with me as to their practical value. I beg to be permitted to draw attention in the *Museum* to his statement of them to me, as also his answers as to the results, inasmuch as I did not obtain them in time for their being submitted to Parliament with the other educational evidence collected by me.

The Rev. George Fisher, Principal of the Greenwich Hospital School.

What is the present number of the pupils of your school? Eight hundred. Of what class are they?—They may perhaps be best described in the words of Mr. Canon Mosely, who reported on them, that the great majority of them are the sons of sailors; that they have not unfrequently passed their previous lives amongst the lowest haunts of a seafaring population, and they come to the institution "at an age (about eleven), when the influence of evil example has already begun to acquire some hold upon them, and the evil habits has begun to be felt." He says, "My object is simply to show what a school composed of such children becomes when the standard of education is low, and what when it is high."

What were the intellectual results before the commencement of the new course of tuition?—We had no record of results, and it was to supply the deficiency that the numerical method was devised by me. The teaching was of a very inferior character. The elementary subjects were confined to reading, a little grammar, church catechism, and writing taught only to the first-class, and carried out on the monitorial system of Bell. There were then only two masters to

400 children. What are now the subject-matters taught?—Reading, spelling, writing, ciphering, mathematics, grammar, and composition; general history, French, drawing, and practical science, including mechanics, steam machinery, and hydrostatics, and the common experiments in natural philosophy. There are now 16 masters to 800 boys, and there are also 16 pupil teachers.

Are the boys of the same class as before?—Just the same. What were the moral results obtained formerly, as set forth in general descriptions?—Mr. Canon Mosely, who inspected the school at that time states, in 1812, that the infliction of corporal punishments was very frequent, that is, by the birch, for offences out of school as well as in school; and for out-door offences the punishments were confinement by the leg by a chain and padlock fixed to a hammock stanchion, and confinement of the arms by a straight waistcoat. The number of punishments administered in respect to offences committed out of school between Midsummer 1812 and the following Christmas was 120, of which 67 were corporal punishments, and 37 of the number for the offences of absconding over the school walls.

What is the present state of things, as denoted by your record of punishments?—Mr. Canon Mosely, in 1815, reported, as one effect of an improved moral and intellectual treatment of the boys, that the offences requiring punishment had considerably diminished. Accurate statistics of the moral conduct of boys were begun only in 1850; and the progress will be seen by the red line marked "character," and it will be seen that it rises with the intellectual attainments. I consider that the former excessive punishments were one exciting cause of evil. The occasion for punishment in the present state of the school may be denoted by our last year's returns, where, out of 800 children, and for the entire year, the number discharged for various offences was 11; and the corporal punishments for the same period were, for out-school misconduct 35, and those not severe; and for in-school misconduct 15. These punishments, as will be seen by Mr. Canon Mosely's returns, are a small fraction of the former punishments.

What was the former economical result of the education as displayed in the "ship character" and conduct of the boys?—The general result may be stated to have been indifferent; but we have no early records to enable the result to be stated statistically. Formerly, the character of Greenwich boys amongst seamen was bad; the boys were unsteady, intractable, and troublesome, and frequently ran away. Now, the reported character of the Greenwich boy is the reverse. Thus, the late Captain Sir Everard Home reported, "There is a remarkable style of character in all the Greenwich boys whom I have seen, differing from others—a steady, firm, respectful, manly deportment, not often met with, entirely the effect of discipline and self-possession." Mr. Canon Mosely reports, as the results of official inquiries from commanders, that "it is a fact worthy of observation, that lest it should render them dissatisfied with those hardships, and so long as a low standard of education was affixed to the education of the boys of the Greenwich School, they ran away from their ships, and that now, when it is fixed at a high standard,

they are not dissatisfied with them; they do not run away from their ships, are more steady, as it is termed, than other boys." The statistical abstract of the ship characters of boys, received from the Admiralty, from July, 1861, to 30th June, 1862, is, of 150 boys, as follows: "Very good, eighty-eight;" "good, forty;" "fair, promising, nine;" "indifferent, lazy, troublesome, two;" "dishonest, one,"—this lad appropriated to his own use some wine belonging to the sick. As to ten, no reports have been received; probably because, on account of the transference from ship to ship, there was no time to give any.

The Royal Military Asylum, Chelsea, for the children of soldiers, which is a school of mixed physical and mental training, may be presented as another example of educational power and economy in result. In the investigation of the sources of juvenile delinquents, one common answer was, "father a soldier," or "a sailor;" "mother dead," or "mother unable to maintain him;" "deserted;" and there cannot be a doubt that, in the absence of any case of provision for that class of children, the great mass of them must be economically total losses of capital. The following are the results of the returns of their character from the commanding officers of the regiments they have joined:—Out of 376 children, 87 were returned as exemplary; 261 as good; 23 as indifferent; and only 5 as bad. But equally important is the evidence of the increased value given to the children by good training (including the physical as well as the mental training), as displayed in the ranks attained by a large proportion of the children, and those ranks denoting the increased value which may be imparted by improved training. Twelve were staff-sergeants, 25 sergeants, 32 corporals, 95 trumpeters or drummers, and 210 privates. Out of this school 17 had become commissioned officers. I attach much importance to schools of this description, as imparting with the physical training those moral virtues, or, speaking economically, those values implied in the terms discipline, attention, prompt and exact obedience, patience, self-restraint, so important for productive applications. I am glad to state that his Royal Highness the Duke of Cambridge and the Council of Military Education are in advance in educational improvement, as they have ordered a reduction of the hours of sedentary application to an average of about three hours daily. Mr. Macleod, the head-master, assured us, on a recent visit with foreign commissioners, that this reduction has been unattended with any reduction of the amount of mental attainment within the same periods in weeks or months. I need not dwell on the vindication of educational and training power afforded by such facts. It were of importance that the results of educational expenditure on the public institutions should be regularly presented, as upon an annual audit, for the satisfaction of those locally interested in them, as well as for the public at large and the members of the Legislature. The cases of failure of "the indifferent," "the lazy," "the bad," and "the dishonest," which are so often the conspicuous cases, and held forth as examples of the general results, would be cases reserved for regular inquiry, as cases of shipwreck, to ascertain the conditions under which they originated, and as to the means of preventing them. Hence the audit of

educational results, tested by sound statistical returns, would, under a proper system of local and general educational administration, become practical means of great moral as well as intellectual advancement.

II.—*Census of Religious Sects in Victoria.*

THE following interesting article, which appeared in the *Melbourne Argus* of the 2nd February last, shows that the colonists of Victoria achieved at their recent census what we at home only partially accomplished for the United Kingdom in the enumeration of 1861. A classification of the people according to religious denomination was, upon that occasion, effected for Ireland; but a proposal to obtain similar information with respect to Great Britain, unfortunately failed.

"When the Census Act for 1861 was before Parliament, some lively discussions took place with regard to the column in the enumeration schedules headed 'Religion.' Whether that column should be altogether omitted, whether it should be compulsory upon the householder to fill it up, or whether he should have the option of declining to do so, were questions eagerly debated in the Legislative Assembly. One honourable member expressed his belief that 'any attempt to census the people in a religious aspect would be attended by failure;' another 'was informed that all the Nonconformists in the colony objected to the column;' and a third was opposed to the column, because the distribution of the grant for public worship depended upon the figures contained in it. Unfortunately for these sagacious legislators, 'the inexorable logic of facts' has proved to be against them; their prescience, their information, and their good taste are all injuriously affected by the results of the inquiry. The people of Victoria generally, and the Nonconformist sects in particular, have been found to possess more good sense, enlightenment, and honesty, than their rulers gave them credit for. The attempt to enumerate the people by religions has not been attended by failure, but, on the contrary, has proved a great success, although this was the first attempt to obtain the information voluntarily. The Nonconformists have shown that they can fully appreciate the value of accurate statistics of religions, by returning their numbers almost to a man. And, strange as such conduct may appear to hon. legislators, the people as a body have refused, for the sake of a few pounds more or less of the public money, to perjure themselves on the subject of their religious faith.

"The fourth part of the census of 1861, comprising the religions of the people, has just been presented to Parliament by the registrar-general. This document shows that the total population enumerated on the census night was 540,322; that of this number only 17,930 individuals objected, on 'conscientious grounds,' to state their religion; and that after deducting these there remained 522,392 persons who complied with the requirements of the act. Of this number 381,113 were Protestants of all denominations, 109,829 were Roman Catholics, 2,903 were Jews, and the remaining 46,477 embraced all other sects, persons of no religion, and those whose religions were not specified. It thus appears that seven-tenths of the population of the colony are Protestants of one kind or another, one-fifth are Roman Catholics, one person in every 186 is a Jew, and rather less than a twelfth comprises the miscellaneous remainder. The union of all the Protestant sects gives them a very imposing appearance in these returns; thus combined they overshadow by their superior numbers all the other denominations; but unfortunately this unity is but a pleasing fiction, invented by Mr. Archer for the sake of statistical symmetry. They are, in reality, divided and subdivided into sects, connexions, and churches without number. The most prominent bodies among them are the members of the Church of England, Presbyterians, and Wesleyans. The first of these sects numbered 212,068 persons, or 39 per cent. of the whole population; the second, 87,103, or 16 per cent.; and the third 46,511, or nearly 9 per cent. Then there are 12,777 Independents or Congregationalists, 9,001 Baptists, 10,043 Lutherans and German Protestants, 1,430 Unitarians, 273 Quakers, and 650 Calvinists and Calvinistic Methodists. Among the minor sects, and what may be called the "fancy" religions, are 7 Glassites, 5 Huguenots, 5 Spiritualists, 198 Swedenborgians, and 108 Mormons. We are also favoured with the presence amongst us of 189 Mahomedans, 1,672 Pagans (not Chinese), 24,551 Chinese not professing Christianity, and 441 persons of no religion.

"The shepherds who have the tending of all these sheep are variously proportioned to their flocks. The members of the Church of England and the Roman Catholics are the worst situated in this respect; amongst the former there is only one clergyman to every 2,613 members, and amongst the latter one to every 2,615 members; while the Presbyterians have one minister to every 1,049 souls, and the Wesleyans one to every 694 souls. The relative proportions of the sexes professing the different religions are also curiously dissimilar. The Mormons, who might be expected to have the greatest number of females, have in reality the least—the proportion amongst them being 20 females to 100 males. As regards the larger religious bodies, the Roman Catholics and the Wesleyans have the greatest number of female votaries in their ranks, and the Church of England the least. The two former number 84 and 82 females respectively to every 100 males, while the latter has only 66 to 100, or one more than the proportion amongst the whole population of the colony. The distribution of the religious sects over the colony is another portion of the inquiry which is not without interest. A separation of the population into urban and rural, shows that Protestants—with the exception of the Presbyterians—Jews, and those who object to state their religion, are principally congregated in the towns; but the Presbyterians, the Roman Catholics, and the residue of nondescripts, are more numerous in country districts. On the gold fields, the Wesleyans are relatively more numerous, in proportion to their population, than the whole body is to the entire population of the colony. Members of the Church of England, Roman Catholics, Presbyterians, and Jews, are proportionately less numerous on the gold-fields than in the colony generally.

"The relative increase of the principal religious bodies, between the censuses of 1857 and 1861, is a very important part of this subject. According to the returns now before us, the Protestant denominations had increased by 83,934, or 28 per cent.; while the Catholics had augmented their numbers by 32,478, or 42 per cent. Taking some of the chief Protestant sects separately, we find an increase of 21 per cent. in the Church of England, 32 per cent. in the Presbyterians, and 64 per cent. in the Wesleyans. Thus the Roman Catholics are adding much more largely to their numbers than either of the principal Protestant sects, with the exception of the Wesleyans. Though numerically inferior to the Protestant denominations as a whole, and the Church of England separately, the Roman Catholic community largely outnumbers the other Protestant sects, and is increasing at such a rate as bids fair to place it, ere long, at the head of the churches in Victoria.

"Turning to the census of New South Wales for 1861, it may be useful to compare together some of the more prominent religious statistics of the two colonies. With a total population of 350,860 persons in that colony, 159,958, or nearly 46 per cent., are members of the Church of England; 99,193, or 28 per cent., are Roman Catholics; 34,692, or close on 10 per cent., are Presbyterians; and 23,682, or nearly 7 per cent., are Wesleyans and Primitive Methodists. In Victoria, therefore, we have nearly 7 per cent. fewer members of the Church of England, and 8 per cent. fewer Roman Catholics; but 6 per cent. more Presbyterians, and 2 per cent. more Wesleyans. The augmentation in the more prominent sects in New South Wales, in the interval between the censuses of 1856 and 1861, shows an increase in the Church of England of 28 per cent.; in the Roman Catholics, 34 per cent.; in the Presbyterians, 35 per cent.;

and the Wesleyans, 58 per cent. These results are closely approximative to those for Victoria, but the Church of England and the Presbyterian bodies increased more largely in the former than the latter colony, while the Roman Catholics and the Wesleyans augmented more rapidly in the latter than the former."

III.—*Why India is in the State it is.*

THE following article, containing some very important statistics illustrative of the present financial condition of our Indian Empire, is taken from the *Economist* of the 21st May.

"Sir C. Trevelyan's Budget is a dry but business-like document. We have still to complain that we only get actual accounts of realities down to the 30th April, 1863—the spring that is of last year. Nevertheless it appears that there is less of estimate than there used to be in the accounts of 1863-64, and so we suppose we must be satisfied. The satisfactory condition of Indian finance—a condition so satisfactory that no one in Europe now much thinks about it—is evident from the tables appended to this article. From them it appears that—

	£
The actual realized revenue of 1862-63 was	45,143,752
The actual expenditure	43,316,407
Surplus	1,827,345

And after the reductions of the revenue last year proposed, it is estimated that

	1863-64.	1864-65.
	£	£
The revenue will be	41,753,500	46,163,870
„ expenditure	41,721,971	45,340,582
Surplus	31,529	823,288

and this, after allowing for a great depreciation of opium, and the effects of a commercial crisis.

"Sir C. Trevelyan proposes but few alterations this year, and we give elsewhere in his own words his changes in the tariff which alone are of European importance. We do not think he is right in proposing in any form an augmented duty on piece goods in the present state of India. It is, we believe, most desirable to encourage the Indian consumption of English manufactures, and an augmentation of duty on them will necessarily impede their use. The theory of these duties is, undoubtedly, an *ad valorem* theory, and as the prices of piece goods have greatly risen, it is abstractedly desirable that the official valuation should be assimilated to that of the market. But when the result is an augmented charge on the very products which it is best India should use, we think theory should have stood aside for common sense. At any rate, if the valuations for duty were raised, the duty itself should have been lowered. The surplus of 823,000*l.*, a *secure* surplus, as Sir Charles confidently calls it, would be much more than enough for this reduction, and the abolition of the income tax, which is prognosticated next year, might have waited a little if necessary.

"But the real interesting question raised by this and all other India financial statements is, why is India so prosperous? Sir Charles tells us that, independent of hypotheses and estimates, the actual revenue of

	£
1858-59 was	36,060,768
'59-60	39,705,822
'60-61	42,903,234
'61-62	43,829,472
'62-63	45,143,752

showing an increase of nine millions, or 25 per cent., a part of which is derived from augmented taxation, but a much larger part from improvement in old sources of revenue, and especially in the land revenue.

"The truth is that in 1858-59, when we in England were most dismal about Indian finance, and when Mr. Wilson was sent from hence to reform it, India itself was in the very midst of a great industrial revolution. What the abstract political economists call the *efficiency* of her industry was being miraculously increased. They mean this: every nation has the power of producing some commodities or it could not keep itself alive; but many nations have but little power of producing articles desired by people in other nations, while a smaller number of other remarkable nations have a great natural facility, from some cause or other of climate, soil, or inherent character, of producing things usually coveted by the mass of mankind far away from their own homes. The people of Nova Zembla have, in this language, an inefficient industry, because they produce little which other people want; the people of China and those of England have, on the other hand, an efficient industry, because the Chinese, from the natural adaptation of their country to tea and silk, and the English, from industrial skill and habits, have a great power of producing what other people most want. A nation which easily produces desirable things is an *efficient* nation; a nation which does so with difficulty is an inefficient one.

"Three great causes have within a very few years begun to change India from the second class into the first—to make it a very *efficient* country, while it used to be a very inefficient one. The first of these were the English railways: we have spent 50,000,000*l.* in making Indian labour go further than it used to do; next came the Russian war, which gave an enormous stimulus to the cultivation of Indian seeds, last the American war, which has given an enormously augmented value to Indian cotton. The combined effect of the three causes was this:—The Indian ryot found his seed and cotton enormously raised in value, he found that the rest of the world wanted them much more than heretofore, and at the same time the new railways gave him unthought of means of sending these products to the place where they were most wished for. The machinery of conveyance was indefinitely accelerated just when the desirability of the products conveyed was incalculably enhanced.

"Sir C. Trevelyan gives some valuable figures, which indicate at a mere glance the wonderful sequence of these causes. The exports to India were

	£
1842-43	13,531,824
'52-53	20,464,633
'62-63	47,689,431

showing that the trade has much more than doubled in the last ten years, and nearly quadrupled in the last twenty. The recent augmentation is of course dependent on the increased *value* of cotton, as is proved by the following table, which shows that in the corresponding eleven months of the two last years the quantities of cotton exported only increased one-seventh, while the values nearly doubled:—

Raw Cotton Exported from Calcutta, Madras, and Bombay, in Eleven Months, from the beginning of May to the end of March, in 1862-63, and in 1863-64.

	1862-63.		1863-64.	
	Quantity.	Value.	Quantity.	Value.
	cwt.	£	cwt.	£
Calcutta	363,854	1,399,110	401,663	2,152,128
Madras	508,785	2,143,400	597,095	4,103,000
Bombay	3,010,563	13,256,807	3,325,163	25,177,690
	3,881,202	16,799,317	4,325,121	31,432,818

Note.—The return from Madras for March, 1864, does not include the exports from the out-ports.

But whether the cause be the augmented quantity produced or the augmented value, the effect on India is identical: she obtains a greater *purchasing power* over other countries; her industry is more effectual, for she can produce a greater quantity of what other nations wish for, covet, and require.

"The natural effect of this augmented industry is a great rise in the wages of labour. From a letter given in the appendix to Sir C. Trevelyan's Budget, it appears that 'the wages of unskilled labour twenty years ago were two annas per diem, or 3-12-ors per mensem. Agricultural labour, in districts at a distance from large towns and stations, was usually paid in grain, and perhaps a turban or a pair of shoes at the Dewali. The services of an unskilled field labourer could then have been obtained for about 24rs per annum. These prices continued till about twelve years ago, when the operations of the railway companies began to affect the labour market. From that time, the wages of labour have steadily increased, and unskilled labourers now receive from 4 to 7 annas per diem, or from 7-2-0 to 13-2-ors per month.' Formerly, India was a country in which 'man's life was cheap,' indefinitely and inconceivably cheap, when measured by a European standard; now, it ranges from 3*s.* 9*d.* a-week to 6*s.* 9*d.*, which, though not high, is an approximation to what is seen and possible in Europe.

"In a country which was commercially active, and in which the industrial population was really intelligent, this augmentation of their earnings would be unmixedly beneficial. But it is not so in a country in which capital is deficient, in which it changes slowly from investment to investment, in which the population have as yet little aptitude for advancing wants. India is a country of this sort. The labourers have not spent their earnings in the best way; have to some extent, though not perhaps to so considerable an extent as is sometimes thought, hoarded the precious metals; they have spent the rest of their money in augmented food and other temporary necessaries. In consequence there has been a great enhancement in the price of grain and other simple articles of necessary consumption,—in what we may call the cost of living,—which presses acutely on the classes of persons with small incomes and fixed incomes, and threatens to make it necessary to increase the salaries of civil servants, as the sole remedy for their enlarged expenses. In a country with *mobile* capital, the price in grain and other necessaries would soon have been set right by an enlarged production of them. But in India there is little transferable capital, and the owners of what there is do not very readily or quickly alter its destination. And it so happened that just when the price of food was augmenting, the price of cotton and linseed augmented much more, and these larger augmentations being of course more tempting had attracted to themselves all the moveable Indian capital, and left very little applicable for an increased growth of grain and provisions.

"But the minor inconveniences of high prices to straitened Indian residents on fixed incomes, is a very unimportant consequence of the augmented Indian industry in comparison with others which have resulted from it.

"The *first* result of it has been the recent great augmentation of the revenue. It is impossible, under *any* system of taxation, that a country rapidly growing in industry and wealth should not yield to the State a largely increased revenue. Whatever pores you open, whether you tax directly or tax indirectly, the bigger stream will flow at once from the bigger reservoir. People who have large incomes will spend more and pay more to the indirect imposts of the State; they will pay more to the direct taxes, if there be any, in proportion to their increased wealth. In India, all sources of revenue have augmented,—the stamps, the import duties, and more than any, the land revenue. As fast as new ground is taken up for cultivation, and much new land appears to have been so broken up, new payments are made to the State; and the general doctrine that the State is the ultimate owner of the land, whatever its other defects may be (and we believe them to be very great), has this unquestionable advantage that it insures to the Government in the long run a large share of the enhanced annual value of land in the country. What the old school of civilians—men like Sir Charles Metcalfe,—calm reasoning, energetic men, well worthy of comparison with any statesman whom England has produced,—what these men deemed impossible for India, is now the actual financial state of India. She has an elastic revenue, which grows daily, from which you venture to take off taxes, to which you can venture to add taxes, which you increase to meet adversity, which you can diminish to enjoy prosperity. Twenty years ago this would not have been believed, and yet so it is. Such is the result upon the Government of a large increase in the efficient industry of the people.

"The second effect of this great agency has been less beneficial: it has caused a great demand for the precious metals. It is evident that doubling or trebling the wages of a country will cause an enormous demand for actual cash. Without singular facilities such a demand could not be supplied. The discoveries of gold in Australia and California have been beneficial to several countries in various regions, but to no country, perhaps so beneficial as India. Just when her industry has been productive, when the wages to be paid day by day have increased beyond example, an enormous addition was given to the wages-paying medium of the world, which enabled the new demand to be satisfied—which enabled the new wages to be paid, without infringing on the medium requisite for old wages—without abstracting the precious metals from their old accustomed sphere of usefulness. Dr. Lees, in a recent instructive work, 'On the Drain of Gold to India and the East,' has carried this a step further. He has shown very clearly that in a considerable part of India wages have been paid, not in gold or even in silver, but by barter. Over all such countries an increased, a diffused prosperity is rapidly introducing a metallic currency, and the annexations of the British Government, which always requires the rent of the land to be paid in money, actually tends in the same direction. Of course, too, much is hoarded. What can an uncivilised population, by unexpected and, to them, inexplicable good fortune, endowed with new wealth, be asked to do with their wealth, except to save it against an evil day? And if the peasant saves at all he will save in the only form an uneducated man understands, in actual *real* coin. First bring effectually home the recondite notion of an interest bearing security to the English agricultural labourer, before you attempt to explain it to a ryot in Nagpore or Berar.

"But we all know this vast Oriental demand for the precious metals has had, both in 1857 and now before our eyes, most important effects in the mercantile world. It has raised the rate of interest, it was an important co-operating force in causing one panic, but for better management it would have caused another panic. Such have been its effects in Europe; and in India just lately its effects have been more remarkable yet. Just when Europe was sending millions to Bombay and Calcutta, Bombay and Calcutta had themselves to send every rupee they possessed far into the interior, perhaps to pay new wages which had been paid in barter before, certainly to pay vastly augmented wages, to pay the price of the cotton to the peasant grower, to diffuse in a word the *money* in which India wished to *take out* its prosperity.

"Unfortunately this effect was coincident in time with another effect of the same great cause. Nothing is so dangerous as sudden prosperity. If enormous

profits are on an instant made in any place or in any trade, there is sure to be a rush of men—without money and without judgment, without industry and without knowledge—to that trade and that place. It is impossible to believe that the sudden and huge profits of industry in India should not have led to some baseless, some foolish, some mischievous speculation. Human nature must change its skin before pecuniary temptations of the first magnitude will cease to produce pecuniary excesses of corresponding greatness. The wonder is that the crisis in India has not exposed a far larger aggregate of bad business than it has.

"The point to be noted, however, is that just when the stock of the precious metals, the ultimate basis of credit in all countries (because credit *means* a *trusted* promise to pay gold and silver) was rapidly in course of being drained away by the demand of the ryot and interior population—by the enormous and sudden augmentation of monetary business in India,—at that very moment speculation was excited by enormous new gains, credit was enlarged to its utmost by every one who could obtain credit, enterprise was pushed to a vicious extreme by persons who used to be cautious, and quiet, and anxious. A sober respectable commercial community was changed into a feverish and excited one, just when the precious metals were ebbing out,—when the *fulcrum* of credit was becoming insecure,—when the basis of new and vast developments was becoming inadequate to old and common-place effects.

"In the last resort, then, we see that it is the new efficiency of Indian industry which is the radical cause both of the prosperity of India, and of the crisis which has of late checkered that prosperity. That greater efficiency has given enormous new wealth to India, augmented her revenue beyond reasonable hope, augmented the wages of her people; but it has also caused an unprofitable absorption of the precious metals in hoarding and mere currency uses, over-stimulated commercial industry by vast sudden gains, and at the very moment withdrawn that store of the precious metals which is the necessary foundation of all credit, without which unexcited industry is in danger, and without which excited industry is certain to incur panic and peril."

General Abstract Statement of the Revenues and Charges of India, for Four Years, from 1861-62 *to* 1864-65.

REVENUES AND RECEIPTS.

	Actuals, 1861-62.	Actuals, 1862-63.	Budget Estimate, 1863-64.	Regular Estimate, 1863-64.	Budget Estimate, 1864-65.
	£	£	£	£	£
Land	19,684,670	19,570,147	19,708,900	20,281,000	20,265,000
Forest	460,728	520,580	250,000	291,900	320,150
Abkaree	1,786,157	1,951,080	1,839,300	1,994,000	2,087,680
Assessed taxes	2,054,696	1,882,212	1,306,200	1,395,000	1,187,660
Customs	2,876,139	2,464,366	2,339,600	2,324,200	2,311,060
Salt	4,563,081	5,244,150	5,102,400	5,278,300	5,412,510
Opium	6,359,269	8,055,476	8,000,000	6,850,000	8,200,000
Stamps	1,693,217	1,489,638	1,523,600	1,732,200	1,744,270
Mint	380,735	371,116	350,000	390,000	428,500
Post Office	402,135	425,528	430,000	430,000	485,440
Electric telegraph	73,452	75,525	85,000	85,000	103,450
Law and justice and police	511,513	494,842	680,200	737,000	660,740
Marine	155,723	189,046	350,000	350,000	350,000
Public works	588,858	443,553	600,000	349,300	617,610
Tributes and contributions	780,162	725,763	744,000	744,000	744,900
Miscellaneous, civil	468,500	404,057	450,000	710,000	375,200
„ military	956,219	802,309	822,000	696,600	661,300
Interest	34,128	34,364	90,000	115,000	178,400
	43,829,472	—	—	—	—
Deficit	50,628	—	—	—	—
	43,880,100	45,143,752	44,971,200	44,753,500	46,163,870

General Abstract Statement of the Revenues and Charges of India—Contd.

EXPENDITURE.

	Actuals, 1861-62.	Actuals, 1862-63.	Budget Estimate, 1863-64.	Regular Estimate, 1863-64.	Budget Estimate, 1864-65.
	£	£	£	£	£
Allowances, refunds, and drawbacks	341,538	342,066	267,600	315,300	287,610
Land revenue, forest, and Abkaree	2,030,489	2,076,970	2,365,982	2,340,900	2,611,350
Assessed taxes	121,043	72,676	51,890	45,200	46,513
Customs	243,547	178,706	250,770	179,500	174,753
Salt	646,931	501,411	280,425	336,900	330,797
Opium	1,449,465	1,856,278	2,000,700	2,109,400	2,254,161
Stamps	68,268	98,097	96,950	99,500	98,864
Mint	106,688	180,723	146,296	182,800	236,165
Post Office	481,328	481,196	520,000	515,400	492,495
Electric telegraph	358,223	352,689	341,200	335,100	335,978
Allowances and assignments under treaties and engagements	1,640,466	1,735,663	1,751,590	1,714,900	1,704,132
Allowances to district and village officers	599,682	568,046	518,200	577,200	588,681
Miscellaneous	20,742	26,581	49,103	43,700	45,216
Contingencies, special and temporary	—	9,783	7,900	11,000	1,218
Army	12,681,900	12,764,325	12,614,972	12,765,281	12,653,189
Marine charges	686,193	744,590	306,856	551,200	538,780
Public works, including 1 per cent. income tax fund and loss by exchange on railway transactions	4,742,183	4,400,632	4,995,100	5,158,575	5,358,730
Salaries and expenses of public departments	1,106,749	1,091,936	1,185,587	1,172,300	1,187,265
Law and justice	1,951,217	2,074,146	2,218,086	2,178,700	2,354,311
Police	2,163,163	2,141,269	2,421,294	2,410,300	2,358,540
Education, science, and art	342,593	400,361	461,600	502,300	561,175
Political agencies and other foreign services	210,670	241,515	213,398	188,800	226,857
Superannuation and retired allowances and gratuities for charitable and other purposes	703,297	740,896	725,167	741,500	796,764
Miscellaneous	209,702	265,405	254,426	278,500	279,289
Civil contingencies	204,782	103,165	74,000	141,200	41,200
Interest	3,314,897	3,351,680	3,313,208	3,245,000	3,213,729
Expenditure in India	37,245,756	36,800,805	37,525,300	38,140,456	38,787,742
Net expenditure in England	5,209,264	4,943,428	5,317,300	5,035,182	4,929,924
Guaranteed interest on railway capital less net traffic receipts	1,425,080	1,572,174	1,617,825	1,546,333	1,622,916
Total expenditure	—	43,316,407	44,490,425	44,721,971	45,340,582
Surplus including railways	—	1,827,345	480,775	31,529	823,288
	43,880,100	45,143,752	44,971,200	44,753,500	46,163,870

IV.—*Cost of the English Census.*

From a Parliamentary Paper, bearing the signature of the Registrar-General, it appears that the cost of taking the census for 1811, 1851, and 1861 was per 1,000 of the population 5*l.* 9*s.*, 5*l.* 4*s.*, and 4*l.* 15*s.* 5*d.* respectively; and, therefore, that the cost of the last enumeration was 13*s.* 7*d.* per 1,000 less than in 1811, and 8*s.* 7*d.* less than in 1851. The expenditure, however, is confined to the expense of distributing and collecting the schedules by the local officers and their tabulation at the central office. The numbers of local officers employed, and the total emolument of each class are shown by the following figures:—

	1811. Population, 15,914,		1851. Population, 17,928,		1861. Population, 20,066,	
	Number of Local Officers of each Class.	Amount Expended.	Number of Local Officers of each Class.	Amount Expended	Number of Local Officers of each Class.	Amount Expended.
		£		£		£
Expense incurred at the central office	—	28,400	—	33,062	—	28,805
Payments to local officers:						
Superintendent registrars	622	5,060	624	3,999	631	4,732
Registrars of births, &c.	2,184	18,371	2,190	13,973	2,191	16,416
Enumerators	32,353	34,896	30,610	42,098	31,144	45,756
	35,159	86,727	33,424	93,132	33,966	95,719

V.—*Bank Rate of Discount from* 1844 *to* 1864.

A Parliamentary return shows the several changes in the Bank rate of discount from the beginning of the year 1844 to the present time. In the earlier years of the series the changes were very few; there was but one in the year 1846, one in 1849, one in 1850, none in 1851. Since 1854 the fluctuations have been much more frequent. The rate of discount was altered seven times in 1855, eight times in 1856, nine times in 1857, six times in 1858, five times in 1859, eleven times in 1860, eleven times in 1861, five times in 1862, twelve times in 1863, and six times in little more than a third of 1864—namely up to the 5th of May. The highest rate in the list was 10 per cent., which prevailed in 1857, from Lord Mayor's Day to the day before Christmas. The lowest rate was 2 per cent., which prevailed during the greater part of the year 1852, and for three months of the summer and autumn of 1862.

The date of the successive changes, and the number of days each minimum rate was in operation, are shown in the subjoined table; the *rates* are taken from the statement signed by the cashier of the Bank of England.

Rate of Discount Charged by the Bank of England from 1st *January*, 1844, *to the Present Time.*

Date of Change.	Rate.	Number of Days in Force.	Date of Change.	Rate.	Number of Days in Force.
1811. 1st Jan.	4	219	1856. 22nd May	6	7
5th Sept.	2½	106	29th „	5	28
			26th June	4½	97
1815. 16th Oct.	3	21	1st Oct.	5	5
6th Nov.	3½	294	6th „	6 and 7*	38
			13th Nov.	7	21
1816. 27th Aug.	3	140	4th Dec.	6½	14
			18th „	6	105
1817. 14th Jan.	3½	7			
21st „	4	77			
8th April	5	119	1857. 2nd April	6½	77
5th Aug.	5½	81	18th June	6	28
25th Oct.	8	28	16th July	5½	84
22nd Nov.	7	10	8th Oct.	6	4
2nd Dec.	6	21	12th „	7	7
23rd „	5	35	19th „	8	17
			5th Nov.	9	4
1818. 27th Jan.	4	140	9th „	10	45
15th June	3½	140	24th Dec.	8	14
2nd Nov.	3	385			
1819. 22nd Nov.	2½	399	1858. 7th Jan.	6	7
			14th „	5	14
1820. 26th Dec.	3	370	28th „	4	7
			4th Feb.	3½	7
1822. 1st Jan.	2½	112	11th „	3	301
22nd April	2	259	9th Dec.	2½	140
1853. 6th Jan.	2½	14	1859. 28th April	3½	7
20th „	3	133	5th May	4½	28
2nd June	3½	91	2nd June	3½	7
1st Sept.	4	14	9th „	3	35
15th „	4½	14	14th July	2½	189
29th „	5	224			
1854. 11th May	5½	84	1860. 19th Jan.	3	12
3rd Aug.	5	245	31st „	4	58
			29th March	4½	14
			12th April	5	28
1855. 5th April	4½	70	10th May	4½	14
14th June	3½	84	24th „	4	168
6th Sept.	4	7	8th Nov.	4½	5
13th „	4½	14	13th „	5	2
27th „	5	7	15th „	6	14
4th Oct.	5½	14	29th „	5	32
18th „	6 and 7*	217	31st Dec.	6	7

* 6 per cent. for *short*, and 7 per cent. for *long* dated bills.

Rate of Discount Charged by the Bank of England—Contd.

Date of Change.	Rate.	Number of Days in Force.	Date of Change.	Rate.	Number of Days in Force.
1861. 7th Jan.	7	7	1863. 19th Feb. ...	4	63
14th Feb.	8	38	23rd April....	3½	7
21st March .	7	35	30th „ ...	3	16
4th April....	6	14	16th May ...	3½	5
11th „	5	35	21st „ ...	4	165
16th May	6	77	2nd Nov.	5	3
1st Aug.	5	14	5th „ ...	6	27
15th „	4½	14	2nd Dec. ...	7	1
29th „	4	21	3rd „	8	21
19th Sept. ..	3½	49	24th „ ...	7	27
7th Nov.	3	63			
1862. 9th Jan.	2½	133	1864. 20th Jan.	8	22
22nd May	3	49	11th Feb.	7	14
10th July	2½	14	25th „	6	20
24th „	2	98	16th April	7	16
30th Oct. ...	3	77	2nd May ...	8	3
			5th „	9	15
1863. 15th Jan.'	4	13	20th „	8	7
28th „ ...	5	22	27th „	7	—

VI.—*Agricultural Statistics.*

Mr. Caird, in a letter which appeared in the *Times* of the 2nd June, has proposed a method of collecting information under this head, by taking a certain number of "typical districts." In illustration of his suggestion, Mr. Caird appended the following example to his communication:—

"*Example of the Change which might be Indicated by the Early Publication of such Returns.*

"Great Britain may be supposed to have an average annual breadth of 3,000,000 acres of wheat, and an annual average produce of 10,500,000 qrs. of wheat. The following table would represent the fluctuations caused by change of breadth sown and variation of season, in wheat alone:—

	Acres.	Quarters per Acre.	Crop.	Average Imports.	Total Consumption.
			Qrs.	Qrs.	Qrs.
Extent of wheat for 1864 (assumed average extent and crop)	3,000,000	3½	10,500,000	8,200,000	18,700,000
				Imports required.	
Ditto for 1865, say one-tenth increase.....	3,300,000	4	13,200,000	5,500,000	18,700,000
Ditto for 1866, say one-tenth decrease	2,700,000	3	8,100,000	10,600,000	18,700,000

MARRIAGES, BIRTHS, AND DEATHS IN GREAT BRITAIN.

No. I.—ENGLAND AND WALES.

MARRIAGES IN THE QUARTER ENDED 31ST DECEMBER, 1863 AND BIRTHS AND DEATHS IN THE QUARTER ENDED 31ST MARCH, 1864.

This Return comprises the Births and Deaths registered by 2,200 Registrars in all the districts of England during the winter quarter that ended on March 31st, 1864; and the Marriages in 12,653 churches or chapels, about 4,954 registered places of worship unconnected with the Established Church, and 641 Superintendent Registrars' offices, in the quarter that ended on December 31st, 1863.

The return exhibits important and even striking results in its threefold variety of subject. Rising with an increasing population the number of marriages was greater than it had ever been before in any quarter. The marriage-rate (*i.e.*, proportion of persons married to population) was high, though in some previous instances it had been higher. The registration of births may be described as "extraordinary," for not only were the births more numerous than they had been at any previous period, but relatively to population they were also numerous beyond example within the last ten years. And in respect to the deaths, a remarkably high rate of mortality attests the severity with which the inclemency of the winter pressed on the public health.

England:—Marriages, Births, *and* Deaths, *returned in the Years* 1858-64, *and in the* Quarters *of those Years.*

Calendar Years, 1858-64:—*Numbers.*

Years.....	'64.	'63.	'62.	'61.	'60.	'59.	'58.
Marriages No.	—	173,388	164,030	163,706	170,156	167,723	156,070
Births..... „	—	729,399	712,684	696,406	684,048	689,881	655,481
Deaths..... „	—	475,582	436,566	435,114	422,721	440,781	449,656

Quarters *of each Calendar Year*, 1858-64.

(I.) Marriages:—*Numbers.*

Qrs. ended last day of	'64.	'63.	'62.	'61.	'60.	'59.	'58.
March .....No.	—	35,454	33,953	33,274	35,150	35,382	29,918
June ..... „	—	44,058	40,853	42,012	43,777	42,042	39,890
Septmbr..... „	—	41,902	40,600	39,884	40,541	39,803	38,599
Decmbr. .... „	—	51,974	48,624	48,536	50,688	50,496	47,663

QUARTERS *of each Calendar Year*, 1858-64.

(II.) BIRTHS:—*Numbers.*

Qrs. ended last day of	'64.	'63.	'62.	'61.	'60.	'59.	'58.
March .....No.	192,926	186,653	181,990	172,933	183,180	175,532	170,959
June ..... ,,	—	189,611	185,554	184,820	174,028	175,864	169,115
Septmbr..... ,,	—	173,125	172,709	172,033	164,121	168,394	157,445
Decmbr. .... ,,	—	180,010	172,431	166,620	162,719	170,091	157,962

(III.) DEATHS:—*Numbers.*

Qrs. ended last day of	'64.	'63.	'62.	'61.	'60.	'59.	'58.
March .....No.	143,030	128,524	122,019	121,215	122,617	121,580	125,819
June ..... ,,	—	118,375	107,392	107,558	110,869	105,631	107,142
Septmbr..... ,,	—	112,381	92,381	101,232	86,312	104,216	98,142
Decmbr. .... ,,	—	116,299	114,774	105,109	102,923	109,354	118,553

MARRIAGES.—In the December quarter of 1863, the marriages were 51,974. They were about 3,000 more than they had been in the corresponding quarter of 1861, or in that of 1862. The following divisions of the Kingdom have contributed in a prominent degree to this result:—the west midland counties, the north-western (the seat of the cotton manufacture), Yorkshire, the northern, and the Welsh divisions. The populous districts of the cotton and woollen manufactures, as well as those of coal and iron, showed increased activity in nuptial celebrations, the result of increased or continued animation in their respective branches of industry. In Staffordshire the marriages rose from 2,009 and 1,955 in the December quarters of 1861-62 to 2,291 in that of 1863; in Lancashire from 6,078 and 5,362 to 6,503; in the West Riding of Yorkshire from 3,807 and 3,800 to 4,279; in South Wales from 1,695 and 1,771 to 1,827. The following large town districts are selected as examples of increase of marriages in the last quarter of last year:—

	December Quarter.		
	1861.	1862.	1863.
Stockport	218	198	257
Liverpool, West Derby, and Birkenhead	1,513	1,663	1,906
Manchester, Salford, and Chorlton	1,475	1,285	1,489
Ashton	271	235	295
Blackburn	281	181	322
Preston	254	197	261

In England and Wales about 8,000 persons entered into wedlock weekly. In London the number was about 1,200.

The annual marriage-rate, viz., persons married to population, was 1·998 per cent., the average being 1·961. It is invariably highest in the last three months of the year, when the full employment of summer is succeeded by comparative leisure, and the earnings of harvest are not yet *drawn* for winter service.

ENGLAND:—*Annual Rates per Cent. of* PERSONS MARRIED, BIRTHS, *and* DEATHS, *during the* YEARS 1858-64, *and the* QUARTERS *of those Years.*

Calendar YEARS, 1858-64:—*General Percentage Results.*

YEARS	'64.	Mean '54-'63.	'63.	'62.	'61.	'60.	'59.	'58.
Estmtd. Popln. of England *in thousands* in middle of each Year....	20,772	—	20,554	20,336	20,119	19,903	19,687	19,471
Persons Married Per ct.	—	1·661	1·688	1·614	1·628	1·710	1·704	1·604
Births .... ,,	—	3·450	3·549	3·504	3·461	3·437	3·504	3·366
Deaths.... ,,	—	2·214	2·314	2·147	2·163	2·124	2·239	2·309

QUARTERS *of each Calendar Year*, 1858-64.

(I.) PERSONS MARRIED:—*Percentages.*

Qrs. ended last day of	'64.	Mean '54-'63.	'63.	'62.	'61.	'60.	'59.	'58.
March....Per ct.	—	1·379	1·404	1·360	1·346	1·422	1·464	1·252
June..... ,,	—	1·689	1·722	1·614	1·678	1·766	1·716	1·646
Septmbr. ,,	—	1·597	1·616	1·582	1·570	1·614	1·602	1·570
Decmbr. ,,	—	1·964	1·998	1·390	1·906	2·012	2·026	1·934

(II.) BIRTHS:—*Percentages.*

Qrs. ended last day of	'64.	Mean '54-'63.	'63.	'62.	'61.	'60.	'59.	'58.
March....Per ct.	3·740	3·605	3·698	3·644	3·500	3·707	3·631	3·576
June .... ,,	—	3·611	3·705	3·665	3·690	3·512	3·588	3·488
Septmbr. ,,	—	3·309	3·337	3·365	3·388	3·267	3·389	3·204
Decmbr. ,,	—	3·273	3·461	3·350	3·272	3·230	3·414	3·205

(III.) DEATHS:—*Percentages.*

Qrs. ended last day of	'64.	Mean '54-'63.	'63.	'62.	'61.	'60.	'59.	'58.
March....Per ct.	2·773	2·490	2·546	2·443	2·453	2·481	2·515	2·681
June..... ,,	—	2·187	2·313	2·121	2·147	2·237	2·155	2·210
Septmbr. ,,	—	2·000	2·166	1·800	1·994	1·718	2·097	1·997
Decmbr. ,,	—	2·180	2·236	2·230	2·064	2·043	2·195	2·406

The marriages in 1863 were 173,388. The marriage-rate of the past year was 1·688 against an average of 1·661.

Births.—The total number of births was 192,926 in the first quarter of the present year, of which 26,651 were in London. There was an increase on the number registered in the same period of 1863 in all the eleven divisions, except London and the south-western counties. The number rose in the north-western counties (Cheshire and Lancashire) from 28,731 to 30,011.

The annual birth-rate in the quarter was 3·740 per cent. against an average of 3·605. It was singularly high; for of results obtained in the previous ten years the highest was 3·721 in the June quarter of 1851. The birth-rate rarely attains so high a point as 3·70 in any quarter, and the average for a year is 3·45.

Increase of Population.—As the births were 192,926, and the deaths were 143,030 in the same time, there was an excess in the former amounting to 49,896, and representing the natural increase of population in the quarter. The emigration from the *United Kingdom* comprised about 10,923 English people, 2,175 Scotch, 21,779 Irish, and 3,160 foreigners, altogether 41,037 persons.

Of the Irish, all, except a section which did not count 3,000, went to the United States. Of the English about 6,614 persons sought the United States, 3,151 the Australian Colonies. The Scotch divided themselves almost equally between those two destinations.

In the March quarter of 1862 the emigrants to the United States were 7,210; in that of 1863 they were 21,900; in the same quarter of the present year 32,275. Australia attracted 11,930 persons in the March quarter of 1863, and only 7,169 last quarter.

Prices, Pauperism, and the Weather.—Meat more than maintained its price, but both wheat and potatoes were unusually cheap. The mean of the lowest and highest prices of beef as sold at Leadenhall and Newgate was 5½*d.* against 5½*d.* in the same quarter of the two previous years; and of mutton the mean price was 6¼*d.*, which is also higher than in either of the two corresponding periods. Wheat declined to 40*s.* 4*d.* per quarter, each period of three months since September 1862 having witnessed more or less fall in the price. From the date just specified the fall has caused a difference of 16*s.* 6*d.* per quarter. Best potatoes have fallen to a mean price of 62*s.* 6*d.* per ton at Southwark against double that price in the first three months of last year.

The amount of pauperism and its fluctuation in three successive winters are shown in the following statement. The great severity of the late season has doubtless modified, but happily has not prevented an improvement in the condition of the working classes.

	Persons in Receipt of	
	In-door Relief.	Out-door Relief.
March quarter, 1862	143,926	801,272
„ '63	143,661	948,212
„ '64	139,606	855,728

It appears in the last report of the Central Executive Committee for relief of the distressed districts that the number of persons employed in the mills full time has increased from 210,739 in last January to 232,307 in March. The report adds, that a large number returned as "out of work" are in fact "earning considerable though irregular wages on out-door labour." There are some places in which the relief Committees have suspended their operations without risk to the health of the population; and out of 172 districts reported on, there are only 101 in which voluntary funds are now distributed. Still there are may unions in which the distress of the unemployed has been but "very slightly mitigated."

Consols, Provisions, Pauperism, *and* Temperature, *in each of the Nine* Quarters *ended 31st March*, 1864.

1	2	3	4	5	6	7	8	9
Quarters ending	Average Price of Consols (for Money).	Average Price of Wheat per Quarter in England and Wales.	Average Prices of Meat per lb. at Leadenhall and Newgate Markets (by the Carcase), with the *Mean* Prices.		Average Prices of Potatoes (York Regents) per Ton at Waterside Market, Southwark.	Pauperism. Quarterly Average of the Number of Paupers relieved on the *last day* of each week.		Mean Temperature.
			Beef.	Mutton.		In-door.	Out-door.	
1862	£	*s.* *d.*	*d.* *d.* *d.*	*d.* *d.* *d.*	*s.* *s.* *s.*			°
31 Mar.	93⅛	60 1	4—6¼ 5⅛	4¾—6½ 5⅝	130—155 142	143,926	804,272	41·1
30 June	93⅜	56 8	4—6 5	5—7 6	180—200 190	127,863	781,858	53·3
30 Sept.	93⅜	56 10	4¼—6¼ 5¼	5¼—7 6⅛	100—130 115	119,592	789,914	58·7
31 Dec.	93⅜	48 2	4—6¼ 5⅛	5¼—6¾ 6	90—110 100	132,663	907,493	45·0
1863								
31 Mar.	92½	46 7	4—6¼ 5⅛	5—7 6	120—130 125	143,661	948,212	42·6
30 June	93⅛	46 2	4¼—6¼ 5¼	4¾—6¾ 5¾	110—130 120	127,852	879,241	53·0
30 Sept.	93	45 7	4¼—6¼ 5⅜	4¾—6¾ 5¾	70—105 87	120,189	819,795	58·8
31 Dec.	92⅞	40 6	4—6¼ 5⅛	5—7 6	60—80 70	130,072	804,941	46·8
1864								
31 Mar.	91	40 4	4¼—6½ 5½	5¼—7 6¼	55—70 62	139,606	855,728	37·9

The mean temperature of the air in the quarter at Greenwich was as low as 37°·9. In the winter quarter of 1862 it was 41°·1; in that of 1863 it was 42°·6. Mr. Glaisher writes (see Appendix to this Report) that 1863 closed with very fine weather of some weeks duration all over the country. At the commencement of 1864 the weather completely changed, and was exceedingly cold till the ninth day, the daily defect of temperature being on an average 8½°. On the 6th and 7th January the defect was 15° and 13° respectively, and at night the temperature on grass fell to 6° and 7°. The frost was followed by warm, damp, foggy weather. A cold period again set in on 4th February, which lasted a week; snow fell in many parts, and on some days the defect of temperature was 10°. Another warm period succeeded, which continued five days, after which the weather assumed quite a wintry character, with frost, snow, and sleet in all parts of the country. From March 4th to 15th the weather was generally warm, and from that date to the end of the month it was cold. The season was a time of unusual change from frost to thaw, and thaw to frost. The amount of rain in the quarter was 4·4 in., which is slightly below the average.

Deaths; and the State of the Public Health.—The deaths greatly exceed the average number. Seldom has a winter been more fatal; for 143,030

deaths, 1,572 a day, were registered in ninety-one days, including the additional day of Leap year, for which due correction is made. The mortality was at the rate of 2·773 per cent.; whereas the average of the season in the preceding ten years was 2·490 per cent.; thus the rate was nearly 28 instead 25 in 1,000.

ANNUAL RATE *of* MORTALITY *per Cent. in* TOWN *and* COUNTRY DISTRICTS *of* ENGLAND *in each Quarter of the Years* 1861-62.

	Area in Statute Acres.	Population Enumerated.		Quarters ending	Annual Rate of Mortality per Cent. in each Quarter of the Years			
		1851.	1861.		1861.	Mean '54-63.	1863.	1862.
In 142 Districts, and 56 Sub-districts, comprising the *Chief Towns*	3,287,151	9,155,961	10,930,841	March	2·974	2·678	2·705	2·655
				June	—	2·332	2·478	2·267
				Sept.	—	2·253	2·401	1·931
				Dec.	—	2·441	2·462	2·523
				Year	—	2·426	2·512	2·338
In the remaining Districts and Sub-districts of England and Wales, comprising chiefly *Small Towns* and *Country Parishes*	34,037,732	8,771,615	9,135,383	Year	—	1·974	2·064	1·899
				March	2·508	2·280	2·343	2·188
				June	—	2·023	2·102	1·940
				Sept.	—	1·713	1·864	1·552
				Dec.	—	1·880	1·946	1·864

Note.—The three months January, February, March, contain 90, in leap year 91 days; the three months April, May, June, 91 days; each of the last two quarters of the year 92 days. For this inequality a correction has been made in the calculations, also for the difference between 365 and 365·25 days, and 366 and 365·25 days in leap year.

14,698 persons died in excess of the average number.

Since 1812 it is only in the two winters (1817-18) after the potato failure, and in the winter of the Crimean war (1855), that the country has experienced any higher rates of mortality. The winter death-rate per 1,000 was 2·850 and 2·794 in the former years, 2·910 in 1855, and 2·773 in 1861.

In unhealthy places, and in England formerly, when the land was undrained, and when zymotic matter soiled the air and waters more abundantly than it does in these days, the mortality was highest in the hot months of the year; but in the last quarter of a century the summer diseases have to some extent subsided, and left the mortality highest in winter, when the cold weather, in some proportion to its intensity, cuts off the weakly and the aged.

Upon dividing the population into two portions, the one living in the districts comprising the chief towns is found to have experienced the highest rate of mortality, or 2·974 per cent., while the mortality was at the rate of 2·508 in the small towns and in the country districts. The town rate was ·296, the country rate ·228, above their respective averages; thus the increase of the rate was greater in the town than in the country districts.

London suffered to an extraordinary extent, and is accountable for a large share of the increase. The average annual rate of the winter quarter in London is 2·577 per cent., but in the last winter quarter the rate becomes 3·088, or ·511 above the average. The funerals increased in the proportion of five to six.

The annexed table shows the rate of mortality during the winter quarters in each division. It will be observed that the mortality of Lancashire and Cheshire is slightly above that of London, but is not so much above its average as the mortality of London.

Average Annual Rate of Mortality in the Eleven Divisions of England in the Ten Years 1851-60, *and in the Winter Quarter of* 1861.

Divisions.	Average Annual Rate of Mortality per 1,000 in Ten Years, 1851-60.	Annual Rate of Mortality per 1,000 in the Winter Quarter, 1861.
I. London	23·63	30·88
II. South-Eastern counties	19·55	24·18
III. South Midland „	20·11	26·53
IV. Eastern counties	20·58	24·51
V. South-Western counties	20·01	25·97
VI. West Midland „	22·35	27·57
VII. North Midland „	21·10	25·84
VIII. North-Western „	25·51	30·97
IX. Yorkshire	23·09	28·31
X. Northern counties	21·99	25·18
XI. Monmouthshire and Wales	21·28	26·28

When the thermometer falls to the freezing point of water, the mortality is raised all over the country; and the population of London is excessively sensitive to cold; thus the corrected average deaths for the second week of January are 1,550, but the actual number of registered deaths this year was 2,427. The mean temperature of the preceding week, instead of 37°·8, had fallen to 26°·7; and the temperature of one chill night (Thursday, January 7th) had descended to 14°·3, or to 17°·7 below the freezing point of Fahrenheit; and 877 lives were extinguished by "the cold wave of the atmosphere."

The excess of the rate of mortality per cent. during the last winter quarter was ·228 in the country districts and small towns, ·284 in the large town districts, exclusive of London, and ·511 in London, above the average of the quarter.

Fire is a necessary of life in this climate; and a warm hearth mitigates the severity of winter. Fire is as much required by the poor as by the rich; and a tax on coals, like a tax on salt, presses with undue severity on people of small means. Coal at the pit's mouth costs about 5*s.* a ton; and anything that facilitates its carriage and distribution in cities, by the abolition of duties and monopolies, or by laying down railways, if it lead to a diminition of cost, will preserve many lives that come to an untimely end in such severe weather as has reigned during the last winter months.

The rate of the north-western counties, Cheshire and Lancashire, was 30·97 per 1,000. The mortality of the counties which are now suffering from the cotton crisis, has always been higher than the mortality of the rest of the kingdom, owing chiefly to the sanitary defects of the towns. Under the Public Works Act, which was passed during the last Session, some of these defects will be remedied. Mr. Rawlinson, in his intelligent report justly says: "The high death-rate prevailing in Lancashire towns has its main cause in the foul cottage cess-pit. An inspection of any town in the district will show this."* The works on which the people are employed at the instance of the local authorities are nearly all of a hygienic character, and cannot fail to be salutary through all future times.

* "Report of Robert Rawlinson, Esq., C.E., to the President of the Poor Law Board," April, 1864.

ENGLAND:—MARRIAGES *Registered in Quarters ended 31st December,* 1863-61; *and* BIRTHS *and* DEATHS *in Quarters ended 31st March,* 1864-62.

1 DIVISIONS. (England and Wales.)	2 AREA in Statute Acres.	3 POPULATION, 1861. (*Persons.*)	4 MARRIAGES in Quarters ended 31st December. '63.	5 '62.	6 '61.
ENGLD. & WALES....*Totals*	37,324,883	No. 20,066,224	No. 51,974	No. 48,624	No. 48,536
I. London	77,997	2,803,989	7,872	7,811	7,333
II. South-Eastern	4,065,935	1,817,661	4,615	4,381	4,277
III. South Midland	3,201,290	1,295,497	3,230	3,099	3,005
IV. Eastern	3,214,099	1,142,580	3,099	3,025	2,978
V. South-Western	4,993,660	1,835,714	3,843	3,826	3,893
VI. West Midland	3,865,332	2,436,568	6,630	6,071	6,186
VII. North Midland	3,540,797	1,288,928	3,150	3,037	2,879
VIII. North-Western	2,000,227	2,935,540	7,639	6,369	7,087
IX. Yorkshire	3,654,636	2,015,541	5,653	5,143	5,171
X. Northern	3,492,322	1,151,372	2,920	2,762	2,777
XI. Monmthsh. & Wales	5,218,588	1,312,834	3,323	3,100	2,950

7 DIVISIONS. (England and Wales.)	8 BIRTHS in Quarters ended 31st March, '64.	9 '63.	10 '62.	11 DEATHS in Quarters ended 31st March, '64.	12 '63.	13 '62.
ENGLD. & WALES....*Totals*	No. 192,926	No. 186,653	No. 181,990	No. 143,030	No. 128,524	No. 122,019
I. London	26,651	26,750	25,425	22,733	18,967	18,191
II. South-Eastern	16,659	16,260	15,550	11,581	10,112	9,590
III. South Midland	11,994	11,532	11,106	8,714	7,481	7,005
IV. Eastern	10,478	10,055	9,425	7,051	6,891	6,189
V. South-Western	16,020	16,037	15,357	11,978	11,149	9,701
VI. West Midland	24,859	23,725	22,767	17,435	16,507	14,867
VII. North Midland	11,838	11,679	11,350	8,468	7,354	7,073
VIII. North-Western	30,011	28,734	29,424	23,824	20,999	21,604
IX. Yorkshire	20,503	19,088	18,892	14,755	13,554	12,537
X. Northern	12,090	11,435	11,519	7,613	7,409	7,182
XI. Monmthsh. & Wales	11,823	11,358	11,175	8,878	8,101	8,080

REMARKS ON THE WEATHER

DURING THE QUARTER ENDING 31ST MARCH, 1864.

By JAMES GLAISHER, ESQ., F.R.S., *&c., Sec. of the British Meteorological Society.*

The year 1863 closed with very fine weather for the season all over the country, and which had continued for several weeks. At the beginning of January, 1864, the weather completely changed, and till the 9th day the weather was exceedingly cold, averaging a daily deficiency of 8°½ of temperature; on the 6th the deficiency was as large as 15°, and exceeded 13° on the 7th, and the temperature on grass at night was as low as 6° and 7°, checking the advance of vegetation. The frost broke up on the 10th, and a period of warm, damp, and foggy weather set in, and till February 3rd there was an average daily excess of 3°½ of temperature. On February 4th a cold period set in, snow fell in many parts of the country, and till the 11th day the deficiency of daily temperature was 7°½; on some days within this period it exceeded 10°; a period of five days followed, ending the 16th, during which the weather was warm; the average daily excess was 6°¾ nearly. From February 17th the weather was altogether of a wintry character, with frost, snow, and sleet at all parts of the country. The wind blew from the north and east, and the average daily deficiency of temperature for 16 days ending March 3rd, was 4°½. From March 4th to the 15th, the weather was generally warm, there being an excess of 2°¾ daily; and from March 16th to the end of the quarter, there was a daily deficiency to the average amount of 2°. During these three months there was an unusual number of alternations in temperature and change of weather from frost to thaw.

The mean temperature of January was 36°·5, being 5°·3 colder than it was in 1862, and of lower temperature than any since 1861, when it was 33°·9.

The mean temperature of February was 36°·0, being 6°·1 lower than in 1862, and colder than any since 1860, when it was 35°·7.

The mean temperature of March was 41°·3, being 2°·6 colder than in 1862; and colder than any March since 1860, when it was 41°·1.

The temperature of the air decreased from December to January by 4° or 5° in Cornwall and Devonshire; at most other places by 6°, 7°, or 8°; at Liverpool the decrease was as large as 10°. The temperature of February was slightly higher than in January at places situated between 51° and 53°; but both north and south of these parallels it was colder than in January. There was an increase of 4°, 5°, or 6° in March at places south of 53°, and from 2° to 3° north of this latitude.

The mean high day temperature was below their averages to the amount of 1°·9; 3°·6; and 0°·4 respectively in these three months.

The mean low night temperature was below their averages to the amount of 1°·9; 2°·4; and 1°·3 respectively.

Therefore both the days and nights were cold in these three months.

The mean temperature of the air in January, was 1°·8, in February 2°·9, and in March 0°·7 below their respective averages of the preceding 23 years.

The mean temperature of the dew point was 4°·0, 3°·5, and 0°·6 below their averages respectively, as compared with the results from the preceding 23 years.

The degree of humidity was less than its average in January and February, and a little above in March.

The pressure of the atmosphere was a little more than ¼ in. in excess in January, somewhat in defect in February, and about ¼ in. in March. The pressure of the atmosphere decreased from December to January at Guernsey and in Cornwall and Devonshire; and increased at all other places to small amounts at southern, and nearly to ¼ in. at northern stations; from January to February there was a decrease everywhere, the largest being in the midland counties, and amounting to nearly 0·3 in.; and a further decrease took place from February to March to the amount of 0·25 in. nearly at all places.

The fall of rain was in defect in January and February to the amount of 0·9 in. and 0·8 in. respectively, and in excess to the amount of 1·2 in. in March.

The mean temperature of the air at Greenwich in the three months ending February, constituting the three winter months, was 38°·6, being 0°·7 above the average of the preceding 93 years.

1864. Months.	Temperature of Air. Mean.	Air. Diff. from Average of 93 Years.	Air. Diff. from Average of 23 Years.	Evaporation. Mean.	Evaporation. Diff. from Average of 23 Years.	Dew Point. Mean.	Dew Point. Diff. from Average of 23 Years.	Air—Daily Range. Mean.	Air—Daily Range. Diff. from Average of 23 Years.	Water of the Thames.	Elastic Force of Vapour. Mean.	Elastic Force of Vapour. Diff. from Average of 23 Years.	Weight of Vapour in a Cubic Foot of Air. Mean.	Weight of Vapour in a Cubic Foot of Air. Diff. from Average of 23 Years.
	°	°	°	°	°	°	°	°	°	°	In.	In.	Gr.	Gr.
Jan.	36·5	+0·3	−1·8	34·4	−2·7	31·3	−4·0	9·7	0·0	39·7	·176	−·028	2·0	−0·4
Feb.	36·0	−2·3	−2·9	34·1	−3·1	31·3	−3·5	10·3	−1·2	38·5	·176	−·028	2·0	−0·4
Mar.	41·3	+0·3	−0·7	39·1	−0·7	36·2	−0·6	15·5	+0·8	43·0	·215	−·001	2·5	0·0
Mean	37·9	−0·6	−1·8	35·9	−2·2	33·9	−2·7	11·8	−0·1	40·4	·189	−·020	2·2	−0·3

1864. Months.	Degree of Humidity. Mean.	Degree of Humidity. Diff. from Average of 23 Years.	Reading of Barometer. Mean.	Reading of Barometer. Diff. from Average of 23 Years.	Weight of a Cubic Foot of Air. Mean.	Weight of a Cubic Foot of Air. Diff. from Average of 23 Years.	Rain. Amnt.	Rain. Diff. from Average of 23 Years.	Daily Horizontal Movement of the Air.	Reading of Thermometer on Grass. Number of Nights it was: At or below 30°.	Between 30° and 40°.	Above 40°.	Lowest Reading at Night.	Highest Reading at Night.
			In.	In.	Gr.	Gr.	In.	In.	Miles.				°	°
Jan.	82	− 7	30·044	+·284	561	+ 7	0·9	−0·9	214	18	10	3	6·0	43·1
Feb.	83	− 2	29·760	−·044	557	+ 3	0·8	−0·8	270	18	11	0	12·1	37·3
Mar.	83	+ 1	29·503	−·266	546	− 4	2·7	+1·2	281	18	12	1	19·6	41·3
							Sum	Sum	Mean	Sum	Sum	Sum	Lowest	Highst
Mean	83	− 3	29·769	− 009	555	+ 2	4·4	−0·5	255	54	33	4	6·0	43·1

Note.—In reading this table it will be borne in mind that the sign (−) minus signifies below the average, and that the sign (+) plus signifies above the average.

ENGLAND:—*Meteorological Table, Quarter ended 31st March*, 1863.

1 Names of Stations.	2 Mean Pressure of Dry Air reduced to the Level of the Sea.	3 Highest Reading of the Thermometer.	4 Lowest Reading of the Thermometer.	5 Range of Temperature in the Quarter.	6 Mean Monthly Range of Temperature.	7 Mean Daily Range of Temperature.	8 *Mean Temperature of the Air.*	9 Mean Degree of Humidity.
	In.	°	°	°	°	°	°	
Guernsey	29·695	57·5	23·5	34·0	26·3	6·7	41·9	88
Exeter	29·734	64·3	19·5	44·0	35·1	13·4	40·8	81
Ventnor	29·780	54·0	25·0	29·0	25·3	8·0	41·8	78
Barnstaple	29·699	62·5	21·5	41·0	32·7	11·4	41·6	89
Royal Observatory	29·763	58·0	14·3	43·7	34·8	11·8	37·9	83
Royston	29·788	61·4	13·8	47·6	37·6	12·7	36·8	86
Lampeter	29·686	60·0	11·0	49·0	38·1	13·8	38·9	93
Norwich	29·733	57·5	18·0	39·5	33·0	11·0	39·1	86
Belvoir Castle	29·638	56·3	10·0	46·3	38·5	12·9	36·3	91
Liverpool	29·732	54·2	18·3	35·9	27·8	8·0	36·0	80
Wakefield	29·714	55·8	12·0	43·8	36·1	12·6	37·2	92
Stonyhurst	29·684	53·3	18·3	35·0	31·5	10·0	36·4	85
York	29·678	53·5	14·0	39·5	34·5	10·7	36·4	94
North Shields	29·634	53·0	21·2	31·8	29·9	8·6	36·2	90
Alnwick	29·643	59·0	20·0	39·0	33·3	12·9	36·1	90

10 Names of Stations.	11 Wind. Mean estimated Strength.	12 Wind. Relative Proportion of N.	13 E.	14 S.	15 W.	16 Mean Amount of Cloud.	17 Rain. Number of Days on which it fell.	18 Rain. Amount collected.
								In.
Guernsey	1·2	7	8	8	8	5·8	42	9·3
Exeter	1·6	8	10	6	7	3·9	45	6·9
Ventnor	—	7	10	4	10	—	40	7·7
Barnstaple	—	6	7	11	7	4·5	39	6·3
Royal Observatory	0·4	8	8	8	7	7·2	36	4·4
Royston	—	8	6	9	8	6·0	61	5·6
Lampeter	0·7	6	9	9	7	6·5	42	7·2
Norwich	1·3	7	9	7	8	6·9	26	4·6
Belvoir Castle	1·2	6	5	12	8	6·2	33	4·4
Liverpool	1·1	6	8	9	8	6·9	37	6·3
Wakefield	1·7	8	8	9	6	7·0	42	4·6
Stonyhurst	0·7	9	8	5	9	7·1	46	11·6
York	—	6	10	5	10	—	37	3·8
North Shields	1·7	7	5	9	10	6·5	54	6·9
Alnwick	1·8	5	11	2	13	7·0	41	8·4

No. II.—SCOTLAND.

MARRIAGES, BIRTHS, AND DEATHS IN THE QUARTER ENDED 31st MARCH, 1861.

This Return comprises the number of BIRTHS, DEATHS, and MARRIAGES entered on the registers of the 1,010 districts into which Scotland is divided for the purposes of registration during the quarter ending 31st March, 1861. From the returns received, it would appear that the births, deaths, and marriages have each and all been considerably above the average of the first quarter of former years.

BIRTHS.—28,177 births were registered in Scotland during the quarter ending 31st March, 1861, being in the annual proportion of 361 births in every ten thousand of the estimated population, or one birth to every 27 persons. This is a proportion very much above the average of the corresponding quarter in former years; for the eight years, 1856 to 1863 inclusive, only yielded a proportion of 314 births in every ten thousand persons; and even in 1860, when the highest proportion was attained, the rate was only 356 births for every ten thousand persons. The high death-rate which prevailed over all Scotland during the previous year, is quite sufficient to have produced this great increase in the births; and the close connection of these events has been repeatedly pointed out in these reports.

The difference in the proportion of births in the town and in the country districts was greater than usual. Thus, in the 126 town districts (which embrace almost all the towns with populations of 2,000 and upwards), 19,874 births were registered; whereas, in the 884 country districts (embracing the remainder of the population of Scotland), only 8,303 births occurred; thus indicating an annual proportion of 480 births in every ten thousand persons in the town districts, but only 227 for an equal population in the country districts.

Of the 28,177 births, 25,313 were legitimate, and 2,864 illegitimate, being in the proportion of 10·1 per cent. of the births as illegitimate, or one illegitimate in every 9·8 births. The difference between the proportion of the illegitimate births in the town and country districts was greater than has been observed in any previous quarter; for, while only 9·2 per cent. of the town births were illegitimate, 12·2 per cent. of the births in the country districts were illegitimate. The accompanying table shows the proportion of illegitimate births in the several divisions and counties of Scotland, and exhibits a general accord with previous returns, showing that the counties embraced in the north-eastern and southern divisions of Scotland exhibit a much higher proportion of illegitimate births than any of the other divisions. Thus, while in the northern and north-western divisions, only 6·3 and 6·7 per cent. of the births respectively were illegitimate, 14·6 per cent. of the births were illegitimate in the southern divisions, and 16·6 per cent. in the north-eastern division.

Of the children born during the quarter, 14,356 were boys, and 13,821 girls, being in the proportion of nearly 104 boys for every 100 girls at birth. During 1863 the proportion of boys was unusually high; during the above quarter they are below the average of Scotland.

DEATHS.—22,576 deaths were registered in Scotland during the first quarter of the year 1864, being in the annual proportion of 289 deaths in every ten thousand persons of the estimated population. This is the highest death-rate which has occurred in Scotland during any quarter of the last ten years. The average mortality of the first quarter during the previous nine years was only 239 deaths in every ten thousand persons; and the fatal first quarter of 1860 was the only one when the death-rate made any approach to that of 1864, and then it was only at the rate of 265 deaths in every ten thousand of the estimated population.

The deaths in the town districts were greatly more numerous in proportion to the population than in the rural districts. Thus, in the 126 town districts, 17,042 deaths were registered, but only 5,534 in the 884 rural districts, indicating an annual proportion of 411 deaths in every ten thousand persons in the town districts, but only 151 deaths in a like population in the rural districts. The great increase in the mortality, therefore, has been entirely confined to the town districts, and has not extended to the rural districts, which, indeed, have remained at their low summer rate of mortality.

Of the deaths, 7,673 occurred during January, 7,290 during February, and 7,613 during March; so that the daily deaths in Scotland amounted to 248 in January, 351 in February, and 245 in March.

INCREASE OF THE POPULATION.—As the births numbered 28,177, and the deaths 22,576, the natural increase of the population during the quarter, through the excess of births over deaths, amounted to 5,601 persons. From a return furnished to the Registrar-General by the Emigration Commissioners, it appears that 41,037 persons emigrated from the ports of Great Britain and Ireland, of which number 2,143 were ascertained to be of Scottish origin. If 32 be added to that number as the proportion of those whose origin was not ascertained, the total ascertained Scottish emigration during the quarter would amount to 2,175, and this deducted from the excess of births over deaths, would leave 3,426 as the increase of the population during the quarter. These calculations make no allowance for the large emigration to England, or the drafts to the Army, Navy, and merchant shipping.

MARRIAGES.—5,333 marriages were registered in Scotland during the first quarter, being in the annual proportion of 68 marriages in every ten thousand persons of the estimated population. This is a proportion greatly above the average of the first quarter of the nine previous years, which only gave a rate of 61 marriages in every ten thousand persons.

This high rate of marriage, like the births and the deaths, was entirely confined to the town districts; for, while the 126 town districts registered 4,075 marriages, the 884 rural districts only registered 1,258; thus indicating a marriage-rate in the towns equal to 96 marriages in every ten thousand persons, but only 34 marriages in the rural districts in a like population.

HEALTH OF THE POPULATION.—The population has been extremely unhealthy during the quarter, and the mortality been high above the average of the corresponding quarters of the nine previous years. Strange to say, however, this high mortality has been limited to the town districts alone, and has not extended to the country districts. In these last, indeed, the mortality has been lower than usual during the first quarter, in fact nearly as low as during the third quarter, when the mortality is always lowest.

WEATHER.—This has been the most severe winter we have had for many years past; and severe frosts and heavy falls of snow extended to the middle of March. This lower temperature and more severe weather seemed to be due to a greater prevalence than usual of winds from the north and east (for both these are the same aerial currents), and when they form the terrestrial currents during the above months, they invariably bring frost and snow with them, which only disappears on the westerly and southerly breezes regaining their usual sway.

The mean temperature of the whole of the months has been lower than the average of former years; and it is this lower temperature which is the element most destructive to life. Thus the mean temperature of the quarter in former years was 38°·7, but during the past quarter it was only 35°·7, or 3° lower than the average; while, during February, the mean temperature was 5°·3 below the average of former years. The number of days on which snow or rain fell was greater than usual, as was also the amount of water deposited in the form of snow, rain, or hail. The humidity of the atmosphere was also greater than usual during the quarter.

SCOTLAND:—MARRIAGES, BIRTHS, *and* DEATHS *Registered in the Quarter ended 31st March*, 1864.

1 DIVISIONS. (Scotland)	2 AREA in Statute Acres.	3 POPULATION, 1861. (*Persons.*)	4 Marriages.	5 Births.	6 Deaths.
		No.	No.	No.	No.
SCOTLAND.....*Totals*	19,639,377	3,062,294	5,333	28,177	22,576
I. Northern	2,261,622	130,122	187	805	642
II. North-Western.....	4,739,876	167,329	329	1,131	914
III. North-Eastern	2,429,594	366,783	481	3,245	2,334
IV. East Midland	2,790,492	523,822	875	4,392	3,631
V. West Midland	2,693,176	212,507	319	2,069	1,629
VI. South-Western	1,462,397	1,008,253	2,166	11,107	9,325
VII. South-Eastern	1,192,524	408,962	720	3,736	2,891
VIII. Southern	2,069,696	214,216	256	1,692	1,210

No. III.—GREAT BRITAIN.

SUMMARY *of* MARRIAGES, *in the Quarter ended 31st December*, 1863; *and* BIRTHS *and* DEATHS, *in the Quarter ended 31st March*, 1864.

COUNTRIES.	AREA in Statute Acres.	POPULATION, 1861. (*Persons.*)	Marriages.	Births.	Deaths.
		No.	No.	No.	No.
England and Wales.....	37,324,883	20,066,224	51,974	192,926	143,030
Scotland	19,639,377	3,062,294	6,577	28,177	22,576
GREAT BRITAIN.....	56,964,260	23,128,518	58,551	221,103	165,606

Trade of United Kingdom, 1863-62-61.—*Distribution of* Exports *from United Kingdom, according to the Declared Real Value of the Exports; and the Computed Real Value (Ex-duty) of* Imports *at Port of Entry, and therefore including Freight and Importer's Profit.*

Merchandise (*excluding Gold and Silver*), Imported from, and Exported to, the following Foreign Countries, &c. [000's omitted.]	Whole Years. 1863. Imports from	1863. *Exports to*	1862. Imports from	1862. *Exports to*	1861. Imports from	1861. *Exports to*
I.—FOREIGN COUNTRIES:	£	£	£	£	£	£
Northern Europe; viz., Russia, Sweden, Norway, Denmark & Iceland, & Heligoland	19,312,	4,871,	21,121,	4,124,	18,649,	5,057,
Central Europe; viz., Prussia, Germany, the Hanse Towns, Holland, and Belgium	27,426,	21,702,	27,921,	20,536,	24,663,	21,303,
Western Europe; viz., France, Portugal (with Azores, Madeira, &c.), and Spain (with Gibraltar and Canaries)	31,837,	15,972,	28,096,	14,912,	24,979,	15,126,
Southern Europe; viz., Italy, Austrian Empire, Greece, Ionian Islands, and Malta	4,568,	8,303,	5,045,	6,879,	4,872,	7,896,
Levant; viz., Turkey, with Wallachia and Moldavia, Syria and Palestine, and Egypt	22,553,	11,298,	17,251,	6,661,	13,247,	6,306,
Northern Africa; viz., Tripoli, Tunis, Algeria, and Morocco	542,	191,	489,	204,	544,	171,
Western Africa	1,412,	655,	1,720,	939,	1,515,	878,
Eastern Africa; with African Ports on Red Sea, Aden, Arabia, Persia, Bourbon, and Kooria Mooria Islands	37,	75,	—	74,	6,	39,
Indian Seas, Siam, Sumatra, Java, Philippines; other Islands	1,598,	1,228,	1,041,	1,248,	1,183,	1,918,
South Sea Islands	20,	141,	—	—	—	115,
China, including Hong Kong	15,479,	4,032,	12,749,	3,190,	9,610,	4,891,
United States of America	19,571,	15,352,	27,693,	14,399,	49,385,	9,058,
Mexico and Central America	2,780,	1,819,	1,112,	925,	662,	756,
Foreign West Indies and Hayti	4,857,	3,487,	4,591,	3,148,	4,900,	2,472,
South America (Northern), New Granada, Venezuela, and Ecuador	867,	1,969,	916,	1,008,	539,	1,405,
" (Pacific), Peru, Bolivia, Chili, and Patagonia	6,113,	2,461,	5,602,	1,707,	5,718,	2,561,
" (Atlantic) Brazil, Uruguay, and Buenos Ayres	6,954,	5,831,	6,540,	5,073,	4,741,	6,525,
Whale Fisheries; Grnlnd., Davis' Straits, Southn. Whale Fishery, & Falkland Islands	89,	12,	123,	10,	135,	10,
Total.—Foreign Countries	166,015,	99,399,	162,010,	85,037,	165,348,	86,487,
II.—BRITISH POSSESSIONS:						
British India, Ceylon, and Singapore	53,966,	22,558,	39,014,	16,282,	26,155,	17,925,
Austral. Cols.—New South Wales and Victoria	4,648,	8,756,	4,950,	9,218,	4,945,	8,265,
" " So. Aus., W. Aus., Tasm., and N. Zea.	2,513,	3,749,	2,160,	2,712,	1,956,	2,437,
British North America	8,166,	4,819,	8,499,	3,993,	8,664,	3,697,
" W. Indies with Btsh. Guiana & Honduras	8,910,	3,928,	6,584,	3,187,	6,106,	2,665,
Cape and Natal	1,920,	1,524,	1,517,	1,922,	1,422,	1,987,
Brt. W. Co. of Af., Ascension and St. Helena	208,	369,	237,	411,	202,	434,
Mauritius	1,986,	522,	968,	521,	1,914,	552,
Channel Islands	648,	866,	653,	854,	639,	666,
Total.—British Possessions	82,965,	47,091,	64,582,	39,100,	52,003,	38,628,
General Total.....£	248,980,	146,490,	226,592,	124,137,	217,351,	125,115,

Note.—The Exports are of British and Irish produce and manufactures only; the value of foreign and colonial produce exported in 1861 and 1862, was £34,530,000, and £42,176,000 respectively.

IMPORTS.—(United Kingdom.)—Whole Years, 1863-62-61-60-59.—*Computed Real Value (Ex-duty), at Port of Entry (and therefore including Freight and Importer's Profit), of Articles of Foreign and Colonial Merchandize Imported into the United Kingdom.*

(Whole Years.) (000's omitted.) Foreign Articles Imported.		1863.	1862.	1861.	1860.	1859.
		£	£	£	£	£
Raw Matls.—*Textile.*	Cotton Wool	56,278,	31,093,	38,653,	35,757,	34,569,
	Wool (Sheep's)..	12,290,	12,109,	9,719,	11,031,	9,831,
	Silk	15,248,	15,897,	7,907,	10,324,	10,596,
	Flax	4,271,	5,206,	3,423,	3,837,	3,769,
	Hemp	3,451,	2,615,	1,894,	1,865,	2,363,
	Indigo	2,398,	2,416,	2,977,	2,529,	1,929,
		93,936,	69,396,	64,573,	65,343,	63,056,
,, ,, *Various.*	Hides	3,217,	3,188,	2,892,	3,296,	3,373,
	Oils	4,075,	3,951,	3,576,	3,923,	3,634,
	Metals	4,087,	4,601,	3,752,	4,228,	3,887,
	Tallow	2,439,	2,508,	3,312,	4,014,	2,933,
	Timber.....	10,754,	9,293,	9,931,	9,206,	8,163,
		24,572,	23,544,	23,463,	24,667,	22,010,
,, ,, *Agricll.*	Guano	2,659,	1,635,	2,022,	1,563,	769,
	Seeds	3,372,	3,211,	3,108,	3,392,	3,042,
		6,031,	4,846,	5,130,	4,955,	3,811,
Tropical,&c.,Produce.	Tea	10,666,	9,176,	6,851,	6,944,	5,813,
	Coffee	4,155,	3,303,	2,629,	2,543,	1,956,
	Sugar & Molasses	12,367,	12,019,	13,252,	12,811,	12,539,
	Tobacco	3,017,	2,351,	2,195,	1,778,	1,817,
	Rice.....	1,866,	2,400,	2,127,	1,023,	805,
	Fruits	1,562,	1,228,	1,470,	1,254,	1,599,
	Wine	4,497,	3,649,	3,863,	4,202,	2,781,
	Spirits.....	1,706,	1,692,	1,734,	1,919,	2,228,
		39,836,	35,818,	34,121,	32,474,	29,538,
Food	Grain and Meal..	25,886,	37,748,	34,750,	31,432,	17,894,
	Provisions	8,789,	8,564,	7,780,	6,546,	3,372,
		34,675,	46,312,	42,530,	37,978,	21,266,
Remainder of Enumerated Articles		4,776,	4,213,	3,869,	3,714,	3,379,
Total Enumerated Imports....		203,826,	184,129,	172 587,	169,131,	143,060,
Add for Unenumerated Imports (say)		45,154,	42,473,	43,422,	42,283,	35,765,
Total Imports.....		248,980,	226,592,	217,109,	211,414,	178,825,

IMPORTS.—(United Kingdom.)—First Two Months (*January—February*), 1864-63-62-61-60.—*Computed Real Value (Ex-duty), at Port of Entry (and therefore including Freight and Importer's Profit), of Articles of Foreign and Colonial Merchandise Imported into the United Kingdom.*

(First Two Months.) (000's omitted.) Foreign Articles Imported.		1864.	1863.	1862.	1861.	1860.
		£	£	£	£	£
Raw Matls.—*Textile.*	Cotton Wool	6,060,	3,532,	1,206,	3,979,	5,338,
	Wool (Sheep's)..	534,	578,	510,	392,	660,
	Silk	1,635,	2,190,	2,034,	1,181,	1,385,
	Flax	810,	387,	366,	198,	297,
	Hemp	209,	110,	60,	54,	58,
	Indigo	94,	223,	179,	66,	93,
		9,342,	7,020,	4,355,	5,870,	7,831,
,, ,, *Various.*	Hides	169,	162,	182,	124,	299,
	Oils	293,	378,	339,	170,	363,
	Metals	492,	411,	525,	260,	349,
	Tallow	176,	77,	145,	130,	134,
	Timber.....	973,	556,	498,	526,	363,
		2,103,	1,584,	1,689,	1,210,	1,508,
,, ,, *Agricll.*	Guano	109,	141,	54,	151,	134,
	Seeds	553,	233,	242,	288,	317,
		662,	374,	296,	379,	451,
Tropical,&c.,Produce.	Tea	1,201,	2,120,	1,639,	1,110,	1,158,
	Coffee	271,	350,	284,	172,	188,
	Sugar & Molasses	935,	1,357,	1,153,	1,304,	1,111,
	Tobacco	263,	314,	154,	179,	43,
	Rice.....	85,	100,	46,	128,	87,
	Fruits	62,	40,	82,	173,	100,
	Wine	708,	595,	448,	544,	391,
	Spirits.....	331,	345,	241,	186,	215,
		3,856,	5,221,	4,047,	3,796,	3,293,
Food	Grain and Meal..	3,263,	3,957,	5,274,	6,172,	1,709,
	Provisions	937,	565,	658,	508,	649,
		4,200,	4,522,	5,932,	6,680,	2,358,
Remainder of Enumerated Articles		572,	512,	408,	311,	431,
Total Enumerated Imports....		20,735,	19,233,	16,727,	18,246,	15,872,
Add for Unenumerated Imports (say)		5,183,	4,808,	4,182,	4,561,	3,968,
Total Imports.....		25,918,	24,041,	20,909,	22,807,	19,840,

EXPORTS.—(United Kingdom.)—First Three Months (*January—March*), 1864-63-62-61-60.—*Declared Real Value, at Port of Shipment, of Articles of* British *and* Irish *Produce and Manufactures Exported from United Kingdom.*

(First Three Months.) [000's omitted.] British Produce, &c., Exported.		1864.	1863.	1862.	1861.	1860.
		£	£	£	£	£
Manfrs.—*Textile.*	Cotton Manufactures..	10,465,	6,312,	7,530,	9,134,	9,389,
	,, Yarn.....	2,103,	1,143,	1,389,	1,908,	2,425,
	Woollen Manufactures	4,718,	3,209,	2,985,	2,876,	3,005,
	,, Yarn	1,073,	981,	669,	641,	807,
	Silk Manufactures ...	387,	413,	473,	532,	503,
	,, Yarn.....	55,	81,	78,	55,	48,
	Linen Manufactures....	1,998,	1,455,	1,088,	1,081,	1,122,
	,, Yarn.....	653,	493,	403,	327,	469,
		21,452,	14,123,	14,615,	16,557,	17,768,
,, *Sewed.*	Apparel	554,	526,	422,	390,	462,
	Haberdy. and Millnry	1,252,	860,	673,	902,	989,
		1,806,	1,386,	1,095,	1,292,	1,451,
Metals	Hardware.....	842,	680,	566,	732,	816,
	Machinery	924,	838,	718,	750,	663,
	Iron	2,982,	2,536,	2,019,	2,058,	2,395,
	Copper and Brass.....	697,	781,	596,	474,	676,
	Lead and Tin	709,	610,	586,	350,	573,
	Coals and Culm	903,	765,	782,	658,	618,
		7,057,	6,178,	5,297,	5,022,	5,741,
Ceramic Manufcts.	Earthenware and Glass	490,	435,	357,	385,	480,
Indigenous Mnfrs.	Beer and Ale	474,	456,	402,	348,	615,
	Butter	69,	108,	54,	131,	139,
	Cheese	41,	31,	25,	27,	26,
	Candles	32,	54,	47,	69,	63,
	Salt	48,	52,	58,	78,	61,
	Spirits	161,	114,	58,	79,	60,
	Soda.....	209,	198,	186,	117,	226,
		1,034,	1,013,	830,	852,	1,210,
Various Manufcts.	Books, Printed.....	100,	89,	83,	100,	101,
	Furniture.....	47,	64,	45,	35,	48,
	Leather Manufactures	525,	456,	585,	402,	514,
	Soap.....	53,	59,	53,	46,	63,
	Plate and Watches	98,	114,	94,	102,	120,
	Stationery.....	75,	59,	57,	143,	181,
		898,	842,	917,	828,	1,027,
Remainder of Enumerated Articles		2,212,	1,771,	1,663,	710,	707,
Unenumerated Articles		1,718,	1,813,	1,649,	2,023,	2,087,
Total Exports		36,667,	27,561,	26,423,	27,669,	3,0481,

SHIPPING.—Foreign Trade.—(United Kingdom.)—First Three Months (*January—March*), 1864-63-62-61.—*Vessels Entered and Cleared with Cargoes, including repeated Voyages, but excluding Government Transports.*

(First Three Months.)	1864.			1863.		1862.		1861.	
Entered:—	Vessels.	Tonnage (000's omitted.)	Average Tonnage	Vessels.	Tonnage (000's omitted.	Vessels.	Tonnage (000's omitted.	Vessels.	Tonnage (000's omitted.)
Vessels belonging to—	No.	Tons.	Tons.	No.	Tons.	No.	Tons.	No.	Tons.
Russia	75	31,	413	43	16,	55	20,	60	23,
Sweden	135	24,	178	112	22,	65	16,	117	25,
Norway	515	113,	220	427	100,	314	62,	212	43,
Denmark.....	617	61,	99	479	47,	309	32,	379	39,
Prussia and Ger. Sts.	452	121,	268	496	140,	361	101,	375	108,
Holland and Belgium	461	56,	121	406	53,	356	47,	295	39,
France.....	700	57,	81	760	61,	396	35,	597	47,
Spain and Portugal.....	78	22,	282	87	26,	77	24,	102	25,
Italy & other Eupn. Sts.	112	36,	321	135	40,	81	27,	214	61,
United States	111	121,	1,118	209	217,	248	221,	489	450,
All other States	2	1,	500	5	2,	2	1,	3	1,
United Kingdm. & Depds.....	3,258	616,	198	3,159	728,	2,264	586,	2,843	861,
	4,522	1,417,	313	4,544	1,392,	3,844	1,181,	4,054	1,221,
Totals Entered	7,780	2,063,	265	7,703	2,120,	6,108	1,767,	6,897	2,082,
Cleared:—									
Russia.....	112	46,	411	82	31,	91	31,	81	28,
Sweden	119	25,	210	86	23,	100	25,	116	28,
Norway	380	94,	248	236	55,	227	51,	183	44,
Denmark.....	553	58,	105	432	46,	414	44,	404	46,
Prussia and Ger. Sts.	425	123,	289	687	163,	739	153,	594	134,
Holland and Belgium	351	53,	151	369	52,	438	68,	307	43,
France.....	1,118	115,	103	1,010	101,	1,223	127,	1,098	110,
Spain and Portugal	74	23,	311	77	26,	76	24,	77	21,
Italy & other Eupn. Sts.	224	72,	321	190	60,	97	32,	259	72,
United States	97	102,	1,052	177	178,	260	219,	377	357,
All other States	3	1,	333	6	2,	12	6,	5	2,
United Kingdm. & Depds.....	3,456	712,	206	3,352	737,	3,687	780,	3,501	885,
	5,971	1,882,	315	5,966	1,723,	5,792	1,640,	4,792	1,332,
Totals Cleared	9,427	2,594,	275	9,318	2,460,	9,479	2,420,	8,293	2,217,

GOLD AND SILVER BULLION AND SPECIE.—IMPORTED AND EXPORTED.—(United Kingdom.)—*Computed Real Value for the* First Three Months (*January—March*), 1864-63-62.

[000's omitted.]

(First Three Months.)	1864.		1863.		1862.	
	Gold.	*Silver.*	Gold.	*Silver.*	Gold.	*Silver.*
Imported from:—	£	£	£	£	£	£
Australia	669,	—	1,001,	—	1,661,	—
So. Amca. and W. Indies	1,533,	2,195,	1,267,	2,019,	553,	1,307,
United States and Cal.	1,632,	23,	2,496,	320,	1,208,	36,
	3,831,	2,218,	4,764,	2,339,	3,422,	1,343,
France	57,	464,	7,	302,	65,	249,
Hanse Towns, Holl. & Belg.	80,	891,	181,	485,	311,	591,
Prtgl., Spain, and Gbrltr.	14,	31,	3,	21,	7,	33,
Mlta., Trky., and Egypt	6,	—	114,	1,	2,	5,
China	—	—	—	—	—	1,
West Coast of Africa	29,	—	28,	1,	38,	2,
All other Countries	89,	35,	7,	2,	77,	7,
Totals Imported	4,109,	3,639,	5,101,	3,151,	3,955,	2,231,
Exported to:—						
France	1,726,	658,	1,291,	245,	1,214,	202,
Hanse Towns, Holl. & Belg.	36,	236,	911,	148,	117,	91,
Prtgl., Spain, and Gbrltr.	489,	6,	1,221,	—	486,	7,
	2,251,	900,	3,459,	393,	1,817,	300,
Ind. and China (viâ Egypt)	835,	2,536,	610,	2,662,	353,	2,380,
Danish West Indies	—	—	—	—	28,	4,
United States	6,	5,	2,	—	26,	—
South Africa	—	—	31,	11,	—	—
Mauritius	—	—	—	—	—	—
Brazil	536,	36,	350,	25,	5,	10,
All other Countries	184,	34,	152,	25,	252,	13,
Totals Exported	3,812,	3,511,	4,607,	3,116,	2,481,	2,707,
Excess of *Imports*	297,	128,	497,	35,	1,474,	—
,, Exports	—	—	—	—	—	476,

REVENUE.—(UNITED KINGDOM.)—31ST MARCH, 1864-63-62-61.

Net Produce in YEARS *and* QUARTERS *ended* 31ST MARCH, 1864-63-62-61.

[000's omitted.]

QUARTERS, ended 31st March.	1864.	1863.	1864.		Corresponding Quarters.	
			Less.	More.	1862.	1861.
	£ Mlns.	£ Mlns.	£ Mlns.	£ Mlns.	£ Mlns.	£ Mlns.
Customs	5,533,	5,722,	,189,	—	5,724,	5,821,
Excise	5,127,	4,665,	—	,462,	5,044,	4,873,
Stamps	2,439,	2,374,	—	65,	2,294,	2,191,
Taxes	367,	357,	—	10,	355,	314,
Post Office	965,	955,	—	10,	905,	895,
	14,431,	14,073,	,189,	,547,	14,322,	14,097,
Property Tax	3,168,	3,890,	,722,	—	4,427,	4,024,
	17,599,	17,963,	,911,	,547,	18,749,	18,121,
Crown Lands	81,	79,	—	2,	77,	76,
Miscellaneous	1,309,	1,171,	—	,138,	780,	339,
Totals	18,989,	19,213,	,911,	,687,	19,606,	18,536,
			NET DECR. £224,657			

YEARS, ended 31st March.	1864.	1863.	1864.		Corresponding Years.	
			Less.	More.	1862.	1861.
	£ Mlns.	£ Mlns.	£ Mlns.	£ Mlns.	£ Mlns.	£ Mlns.
Customs	23,232,	24,034,	,802,	—	23,674,	23,306,
Excise	18,207,	17,155,	—	1,052,	18,332,	19,435,
Stamps	9,317,	8,994,	—	,323,	8,591,	8,348,
Taxes	3,218,	3,150,	—	68,	3,160,	3,127,
Post Office	3,810,	3,650,	—	,160,	3,510,	3,400,
	57,784,	56,983,	,802,	1,603,	57,267,	57,616,
Property Tax	9,084,	10,567,	1,483,	—	10,365,	10,924,
	66,868,	67,550,	2,285,	1,603,	67,632,	68,540,
Crown Lands	305,	300,	—	5,	295,	290,
Miscellaneous	3,035,	2,753,	—	,282,	1,747,	1,453,
Totals	70,208,	70,603,	2,285,	1,890,	69,674,	70,283,
			NET DECR. £394,598			

REVENUE.—UNITED KINGDOM.—QUARTER ENDED 31ST MARCH, 1861:—

An Account showing the REVENUE *and other* RECEIPTS *of the* QUARTER *ended 31st March* 1861; *the* APPLICATION *of the same, and the Charge of the Consolidated Fund for the said Quarter, together with the Surplus or Deficiency upon such Charge.*

Received:—

	£	£
Surplus Balance beyond the Charge of the *Consolidated Fund* for the Quarter ended 31st December, 1860, viz.:—		
Great Britain	—	
Ireland	£978,210	978,210
Income received in the Quarter ended 31st March, 1861, as shown in preceding page		18,080,080
Amount raised per Act 25 and 26 Victoria, cap. 78, on account of Fortifications, &c.		200,000
Amount received in the Quarter ended 31st March, 1861, in repayment of Advances for Public Works, &c.		323,680
		£20,100,988
Balance, being the Deficiency on 31st March, 1861, upon the charge of the Consolidated Fund in Great Britain, to meet the Dividends and other charges payable in the Quarter to 30th June, 1861, and for which the Exchequer Bills (Deficiency) will be issued in that Quarter		722,330
		£21,213,318

Paid:—

	£	£
Amount applied out of the Income for the Quarter ended 31st March, 1861, in Redemption of the Exchequer Bills (Deficiency), for the Quarter ended 31st December, 1860, viz.:—		
Total deficiency	£899,051	
Deduct—Redeemed by Sinking Fund	207,280	691,768
Amount applied out of the Income to *Supply Services* in the Quarter ended 31st March, 1861		10,629,065
Charge of the *Consolidated Fund* for the Quarter ended 31st March, 1861, viz.:—		
Interest of the Permanent Debt	£5,635,562	
Terminable Debt	872,581	
Principal of Exchequer Bills	893,100	
Interest of " "	88,452	
" Deficiency "	—	
The Civil List	101,233	
Other Charges on Consolidated Fund	570,760	
Advances for Public Works, &c.	428,151	
Sinking Fund	655,658	9,251,490
Surplus Balance in Ireland beyond the Charge of the Consolidated Fund in Ireland for the Quarter ended 31*st March*, 1861		637,995
		£21,213,318

CORN.—*Gazette Average Prices* (ENGLAND AND WALES), *First Quarter of* 1864.

[This Table is communicated by H. F. JADIS, ESQ., Comptroller of Corn Returns.]

Weeks ended on a Saturday 1861.	Weekly Average. (Per Impl. Quarter.) Wheat.	Barley.	Oats.	Rye.	Beans.	Peas.
	s. d.	s. d.	s. d.	s. d.	s. d.	s. d.
January 2	39 10	31 8	18 9	30 –	33 8	33 1
" 9	40 2	31 7	18 8	29 7	31 2	33 3
" 16	40 11	31 10	18 10	28 –	33 7	33 1
" 23	41 3	32 5	18 9	28 –	33 8	32 8
" 30	40 8	32 1	18 11	31 8	33 3	32 10
Average for January ..	40 6	31 11	18 9	29 5	33 8	32 11
February 6	40 4	32 –	18 9	29 –	33 8	33 –
" 13	40 8	31 11	19 1	29 1	33 7	32 7
" 20	41 1	32 –	19 8	28 10	33 2	32 5
" 27	40 6	32 –	19 4	30	33 1	32 9
Average for February ..	40 8	32 –	19 2	31 6	33 4	32 11
March 5	40 2	31 6	19 10	28 6	33 5	32 10
" 12	40 1	31 5	19 8	29 2	32 7	33 –
" 19	39 9	31 4	19 2	32 4	32 10	32 10
" 26	39 11	30 10	19 –	28 –	32 8	33 3
Average for March	39 11	31 3	19 5	29 6	32 10	32 11
Average for the Quarter ..	40 5	31 9	19 1	30 1	33 4	32 11

RAILWAYS.—PRICES, *Jan.—March;—and* TRAFFIC, *Jan.—March*, 1864.

Total Capital Expended Mlns.	Railway.	For the (£100). Price on 1st Mar.	2nd Feb.	1st Jan.	Miles Open. '61.	'63.	Total Traffic first 13 Weeks. (unit (00's omitted.) '61.	'63.	Traffic pr. Mile pr. Wk 13 Weeks. '61.	'63.	Dividends per Cent. for Half Years. 30 Jun. '63.	31 Dec. '62.	30 Jun. '62.
£					No.	No.	£	£	£	£	s. d.	s. d.	s. d.
48,0	Lond. & N. Westn.	108¾	107	108¾	1,229	1,179	1,166,	1,055,	79	72	42 6	55 –	37 6
44,0	Great Western	65¼	65	67	1,056	1,056	755,	716,	59	54	20 –	30 –	5 –
15,0	" Northern....	127	129	128½	353	351	395,	342,	84	79	42 6	85 –	45 –
20,6	" Eastern ...	48½	50	51	663	663	366,	341,	48	41	12 6	25 –	20 –
11,2	Brighton	106	104	110	261	250	190,	193,	82	65	50 –	70 –	50 –
14,9	South-Eastern ...	92¾	94¼	96¾	306	306	236,	226,	67	61	45 –	60 –	42 6
14,7	" Western ...	100½	103½	102½	450	441	225,	225,	53	46	45 –	60 –	40 –
168,4		92½	93¼	95	4,318	4,246	3,333,	3,098,	69	60	36 9	55 –	34 3
22,7	Midland.....	127½	129	131¼	641	630	554,	493,	73	63	57 6	65 –	55 –
19,8	Lancsh. and York.	110¼	110¾	112½	402	395	460,	410,	24	79	42 6	40 –	37 6
12,5	Sheffield and Man.	53	51	52	239	239	216,	186,	76	64	—	—	—
30,8	North-Eastern	102¼	103½	105	1,095	1,079	672,	615,	50	46	42 6	50 –	42 6
85,8		96¾	98	100	2,377	2,343	1,902,	1,704,	56	63	47 6	51 8	45 –
9,7	Caledonian	122	121	122½	245	234	222,	200,	70	67	52 6	60 –	50 –
5,5	Gt. S. & Wn. Irlnd.	97	99	99	373	329	92,	93,	23	23	42 6	50 –	50 –
269,4	*Gen. aver.*....	96¾	97¼	98	7,313	7,152	5,549,	5,095,	61	58	38 –	50 –	35 9

Consols.—Money Prices 1*st March*, 91⅛ to 91¼ de. and 91⅛ to 91¼ for acc.—2*nd February*, 90⅝ to 90¾ de.—1*st January*, 91¼ to 91⅜ de. and 91⅝ to 91¾ for acc.

Exchequer Bills.—1*st March*, 5*s.* dis. par.—2*nd Feb.*, 10*s.* to 4*s.* d.—1*st Jan.* 9*s.* to 4*s.* d.

BANK OF ENGLAND.—Weekly Return.

Pursuant to the Act 7th and 8th Victoria, c. 32 (1844), *for Wednesday in each Week, during the* First Quarter (*Jan.—March*) *of* 1861.

[0,000's omitted.]

1	2	3	4	5	6	7
Issue Department.					Collateral Columns.	
Liabilities.	Dates.	Assets.			Notes in Hands of Public. (Col. 1 minus col. 16.)	Minimum Rate of Discount at Bank of England.
Notes Issued.	(Wednesdays.	Government Debt.	Other Securities.	Gold Coin and Bullion.		
£ Mlns.	1861.	£ Mlns.	£ Mlns.	£ Mlns.	£ Mlns.	1861. Per ann.
28,16	Jan. 6	11,01	3,63	13,51	20,71	
27,69	,, 13 ...	11,01	3,63	13,01	20,76	
26,95	,, 20 ...	11,01	3,63	12,30	20,82	20 Jan. 8 p. ct.
27,00	,, 27 ...	11,01	3,63	12,35	20,28	
27,27	Feb. 3	11,01	3,63	12,62	20,55	
27,40	,, 10	11,01	3,63	12,75	20,16	11 Feb. 7 ,,
27,51	,, 17 ...	11,01	3,63	12,86	20,14	
27,70	,, 24	11,01	3,63	13,05	19,67	25 ,, 6 ,,
27,91	Mch. 2	11,01	3,63	13,26	20,24	
27,76	,, 9	11,01	3,63	13,11	20,02	
27,86	,, 16	11,01	3,63	13,21	19,85	
28,35	,, 23	11,01	3,63	13,70	19,85	
28,06	,, 30	11,01	3,63	13,41	20,40	

Banking Department.

8	9	10	11	12	13	14	15	16	17	18
Liabilities.					Dates.	Assets.				Totals of Liabilities and Assets.
Capital and Rest.		Deposits.		Seven Day and other Bills.		Securities.		Reserve.		
Capital.	Rest.	Public.	Private.		(Wdnsdys.)	Government.	Other.	Notes.	Gold and Silver Coin.	
£ Mlns.	£ Mlns.	£ Mlns.	£ Mlns.	£ Mlns.	1861.	£ Mlns.	£ Mlns.	£ Mlns.	£ Mlns.	£ Mlns.
14,55	3,30	10,00	13,05	,60	Jan. 6	10,95	22,43	7,44	,68	83,03
14,55	3,36	5,26	15,41	,63	,, 13	11,07	20,55	6,92	,66	78,45
14,55	3,40	5,68	13,88	,61	,, 20	11,07	20,27	6,12	,66	76,29
14,55	3,42	6,33	13,40	,58	,, 27	11,07	19,84	6,71	,67	76,61
14,55	3,45	6,74	13,37	,60	Feb. 3	11,12	20,21	6,72	,67	77,47
14,55	3,55	7,25	12,88	,54	,, 10	11,12	19,70	7,24	,71	77,57
14,55	3,58	7,08	13,30	,54	,, 17	11,12	19,85	7,36	,72	78,13
14,55	3,53	8,15	12,42	,53	,, 24	11,17	19,23	80,2	,76	78,40
14,55	3,77	7,89	13,54	,55	Mch. 2	11,17	20,70	7,67	,79	80,64
14,55	3,79	8,86	12,43	,53	,, 9	11,17	20,49	7,73	,77	80,35
14,55	3,88	8,57	13,10	,48	,, 16	11,17	20,65	8,01	,73	81,17
14,55	3,87	9,84	12,48	,51	,, 23	11,27	20,74	8,49	,74	82,51
14,55	3,88	10,28	12,65	,49	,, 30	11,27	22,19	7,65	,75	83,75

CIRCULATION.—Country Banks.

Average Amount of Promissory Notes in Circulation in England *and* Wales *on Saturday, in each Week during the* First Quarter (*Jan.—March*) *of* 1861; *and in* Scotland *and* Ireland, *at the Three Dates, as under.*

England and Wales.				Scotland.				Ireland.		
Dates.	Private Banks. (Fixed Issues, 4,26.)	Joint Stock Banks. (Fixed Issues, 3,27.)	Total. (Fixed Issues, 7,53.)	Four Weeks, ended	£5 and upwards.	Under £5.	Total. (Fixed Issues, 2,75.)	£5 and upwards.	Under £5.	Total. (Fixed Issues, 6,35.)
1861.	£ Mlns.	£ Mlns.	£ Mlns.	1861.	£ Mlns.	£ Mlns.	£ Mlns.	£ Mlns.	£ Mlns.	£ Mlns
Jan. 2	3,09	2,79	5,88	Jan. 9	1,58	2,72	4,30	2,68	2,98	5,66
,, 9	3,21	2,89	6,10							
,, 16	3,24	2,94	6,18							
,, 23	3,23	2,92	6,15							
,, 30	3,19	2,87	6,06							
Feb. 6	3,15	2,87	6,02	Feb. 6	1,54	2,55	4,09	2,70	2,96	5,66
,, 13	3,13	2,86	5,99							
,, 20	3,12	2,87	5,99							
,, 27	3,08	2,85	5,93							
March 5	3,09	2,87	5,96	March 5	1,54	2,46	4,00	2,67	2,89	5,56
,, 12	3,09	2,89	5,98							
,, 19	3,09	2,90	6,00							
,, 26	3,13	2,97	6,10							

FOREIGN EXCHANGES.—*Quotations as under,* London *on Paris, Hamburg & Calcutta; —and New York, Calcutta, Hong Kong & Sydney, on* London—*with collateral cols.*

1	2	3	4	5	6	7	8	9	10	11	12	13	14
	Paris.				Hamburg.				Calcutta.				
Dates.	London on Paris.	Bullion as arbitrated.		Prem or Dis on Gold per mille	London on Hambg.	Bullion as arbitrated.		New York.	India Council	At Calcutta on London.	Hong Kong.	Sydney.	Standard *Silver* in bars in London.
	3 m. d.	Agnst. Engd.	For Engd.		3 m. d.	Agnst. Engd.	For Engd.	60 d. s.	60 d. s.	6 m. s.	6 m. s.	30 d. s.	pr. oz.
1861.		pr. ct.	pr. ct.			pr. ct.	pr. ct.	pr. ct.	*d.*	*d.*	*d.*	pr. ct.	*d.*
Jan. 2..	25·72½	—	·1	3 pm	13·8½	—	—	165	23¾	26	57½	2 pm.	61½
,, 16..	·75	—	,,	4 ,,	·7½	—	—	166¾	24	,,	,,	,,	62
Feb. 6..	·85	—	,,	,,	·8¼	—	·2	172	,, ⅛	27	58	,,	61 7/16
,, 20..	·80	—	·3	,,	·8½	—	—	173	,,	25½	,, ¼	—	,, ¼
Mar. 5..	·72½	—	·1	4 ,,	·8¼	—	—	174	23 15/16	,, 9/16	,,	—	61½
,, 19..	·70	—	·2	3 ,,	,,	—	·3	176	,, ¾	,, 9/16	,,	—	,,

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JOURNAL OF THE STATISTICAL SOCIETY,

SEPTEMBER, 1864.

The Statistics *of the* Roman Catholics *in* England *and* Wales. *By* William Golden Lumley, Esq., LL.M., *of the Middle Temple, Barrister-at-Law, and one of the Honorary Secretaries of the Statistical Society.*

[Read before the Statistical Society, 17th May, 1864.]

His Eminence Cardinal Wiseman, in an address delivered to the Catholic Congress, at Malines, on the 21st August, 1863, which has been lately published in English, states this proposition: "You are "aware, gentlemen, that Catholicism in England is in a progressive "state. This is a truth not only recognized by all the members "of the Catholic Church, but admitted also by those who do not "belong to her. Everybody in England seems to acknowledge that "Catholicism is daily gaining ground upon Protestantism. * * * "A few facts will enable you better to judge of the importance of "this progress, and these facts will consist of simple statistics care-"fully framed. There is no eloquence more conclusive or more "persuasive than that of figures on a subject like this, and all fear "of exaggeration will be thus entirely avoided."

The Cardinal then proceeds to show by figures, that the number of priests has increased in England in the following manner:—

In 1830 there were 434 priests, in 1863 there were 1,242; in 1830 the churches were 410, in 1863 they were 872. There were 16 convents in 1830, the number has arisen in 1863 to 162. In 1830 there were no houses for religious men, but in 1850 there were 11. In 1863 the number amounts to 53.

In a subsequent passage it is stated, that in 1826 there were in London 48 priests; in 1851, 113; in 1863, 194; now (*i.e.* in 1864), 200. The number of the churches for these three periods respectively, amounts to 24, 46, and 102. At the first of these dates there was but one convent, at the second 9; now there are above 25; lastly, while, in 1826, religious houses of men and institutions of Catholic charity had no place in the statistics of the diocese, the first now amounts to 15, the second to 34.

These are the statistics supplied by the address. The other topics which, in the opinion of his Eminence, establish his proposition, are of a political and social character, and are not open to discussion in this place.