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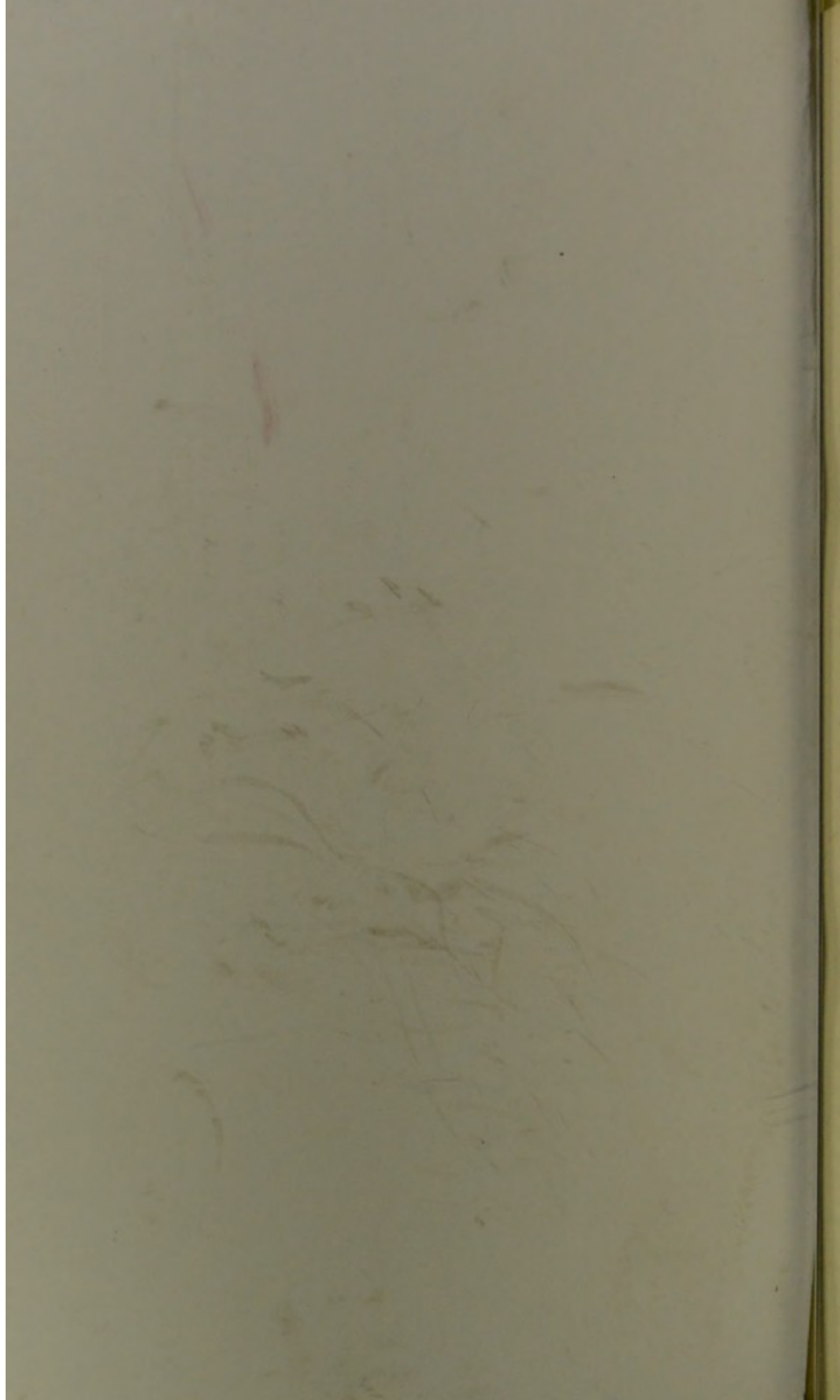
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CONTRIBUTION
TO THE
VITAL STATISTICS
OF
SCOTLAND.

BY

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EDITOR OF THE SCOTLAND REGISTER

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Contribution to the Vital Statistics of Scotland. By JAMES STARK, M.D.,
F.R.S.E., *Fellow of the Royal College of Physicians of Edinburgh.*

[Read before the Statistical Society of London, 20th January, 1851.]

THERE is scarcely a state of Europe relative to whose Vital Statistics we know so little as that portion of the United Kingdom called Scotland. This is the more surprising, seeing that at one time the Established Church of Scotland had in operation a system of enrolment by which every marriage, birth, and death, was entered on the parochial register. In the case of the births, it was the impolitic exaction of a tax on registration, imposed in 1783, which so displeased the great mass of the population, that the dissenters, in a body, gave up the registration of the births of their children, and numerous friends of the Church followed their example. Though this impolitic tax was removed in 1794, the registration by these parties was not resumed, and since that period not a third of the births over Scotland have been entered on the parochial registers.

The registration of deaths (or of *burials*, as it is now termed), instead of being kept by the same parties who kept the registers of births and marriages, was generally handed over to an officer called the recorder, who in many of the country parishes was at the same time the grave-digger, and was remunerated by the dues exacted for opening the graves. The office, therefore, frequently fell into the hands of illiterate men, who either wrote with difficulty, or were unable to write, so that the records of burials were either imperfectly kept, or not at all.

The only registration-books which have been kept with anything approaching to accuracy, are those of the proclamations of the banns of marriage; and we are indebted for these, not to the maternal care of the Church, but to an Act of Parliament, which renders it penal for any clergyman to marry a couple without being certified by the production of the banns of marriage that the parties have been regularly proclaimed.

Every one, from this statement, may at once perceive that the chief reason of the defective state of the parochial registers in Scotland has been the want of a superior board, to which reports of all these matters ought to have been duly and regularly sent. Had the Church, when she undertook the duty of registration, appointed a committee to watch over this most important department, and forced all the kirk sessions and parochial clergy to make an annual report of the numbers born, dead, and married, within their respective parishes, we should at this moment have had a most valuable collection of documents in vital statistics. The evils which arise from the want of proper registers of births, deaths, and marriages, is felt through all classes of society; and in questions affecting succession, legitimacy, and even the attainment of situations in the Army or under Government, the greatest difficulty is often experienced to prove, not only the age, place of birth, or

parents of the living, but also to prove that parties now dead have ever existed.

When this evil began to be felt, it was the duty of the Church to have directed its attention to the improvement of the registration kept under their auspices; but they have not only not done this, but when very excellent Bills were brought before Parliament for the purpose of effecting a more uniform system of registration over Scotland, they were the parties who were the chief agents in obstructing these Bills in every stage of their progress, and finally succeeded in depriving Scotland of the benefits of registration, it is feared, for an indefinite period.

Seeing, therefore, there is no near prospect of getting more accurate facts relative to the Vital Statistics of this portion of Great Britain, I have been induced to collect from all available sources such facts as bore on this subject, and offer the following as the result of these investigations.

The sources of my information are various. A considerable proportion of the facts are derived from that voluminous and most instructive work, "The Statistical Account of Scotland," published in 1845, by the Messrs. Blackwood, of Edinburgh, under the superintendence of a Committee of the General Assembly of the Church of Scotland. The accounts of each parish were furnished by the clergy of the respective parishes, and embody an immense amount of instructive information. Much valuable matter has been derived from the Reports of the Board of Supervision for the Relief of the Poor in Scotland; from numerous Parliamentary papers; from Reports procured by the present Lord Advocate for Scotland, and kindly allowed to be shown to me by John C. Brodie, Esq., the present Crown Agent. Sir Andrew Halliday's pamphlets; the Bills of Mortality for Glasgow, drawn up by the late Dr. Watt, and now by Mr. Patrick; those of Paisley, drawn up by John Lorimer, Esq., Town Chamberlain; those of Dundee, drawn up by the Chamberlain, Wm. B. Baxter, Esq.; those of Greenock, drawn up by John Tuelon, Esq.; those of Aberdeen, Perth, Kilmarnock, &c., drawn up by myself, from materials furnished to me by the Recorders of the different burying-grounds connected with these towns; those of Edinburgh and Leith, drawn up by myself, and published monthly, quarterly, and annually; the Reports of the British Association on the Vital Statistics of five of the chief towns in Scotland; have all furnished more or less information relative to the subject of this paper. Numerous other works have been consulted for the purpose of comparing the results in Scotland with those furnished by England, Ireland, and other countries; but these it is unnecessary to particularise, as they will be afterwards referred to.

The facts gathered from these various sources of information are condensed in the following paper, so as to give, in so far as practicable, a tolerable view of the condition of the population of Scotland on many interesting points.

I.—*Insane and Idiots.*

Many interesting problems hang on ascertaining the number of insane and idiots in a country. The number of the insane in Scotland has been several times attempted to be estimated. In 1812, the then

Lord Advocate procured returns from all the sheriffs of counties, by which it appeared that there were—

In jails	11	Lunatics.
In public madhouses.....	250	„
In private madhouses	100	„
Under care of friends	12	„
Total	373	„

As it was apparent, even on the most superficial inspection, that this number was greatly underrated, Sir Andrew Halliday, in 1816, with the able assistance of the late Principal Baird of the Edinburgh University, drew up a series of queries, which were distributed among the clergy of Scotland, and out of the 992 parishes, he procured returns from 85. Seven of these parishes contained no insane persons; the remaining 78 parishes returned—

Lunatics in confinement	137
Idiots at large.....	250
Total	387

Unfortunately, no note was taken of the population of these parishes. Sir A. Halliday and Principal Baird, therefore, assumed that all the parishes of Scotland were equal in this respect, and reckoning the total population to amount to 1,600,000 souls, arrived at the conclusion that at that period Scotland must have contained 4,500 insane and idiots, in the relative proportions of one lunatic to two idiots.

In 1829, Sir Andrew Halliday, in his letter to Lord Seymour, on the number of lunatics in England and Wales, corrected the above statement, and brought down the returns to the year 1821. He then stated that the corrected returns showed the probable number of insane and idiots in Scotland to be only 3,652 in that year, out of the total population of 2,093,436, being in the proportion of 1 deranged person to every 574 of the general population. No new facts, however, were given on which this corrected estimate was founded, so that we are left quite in the dark as to the principles which guided him in his corrections.

The last census of the population took no note, or at least published no abstract, so far as I am aware, of the number of the insane at large in the different parishes of Scotland. The number of the insane in confinement in the different public lunatic asylums was, however, given in the Occupation Abstract; but as it is well known that these merely included the cases requiring present restraint, from their being dangerous to the community, and did not include those in private madhouses, it is apparent that their numbers give no just idea of the proportion of insane actually existing in the population. The numbers returned as being confined in the public lunatic asylums were 1,325 persons, being in the proportion of 1 insane person in confinement out of every 1,977 of the general population.

That this number was much below the real number of insane among the population, appeared very evident from the returns made by

the parochial clergy, and published in the "Statistical Account of Scotland." I have carefully extracted from that voluminous work the important information on this head, and offer two tables as the result of this examination.

It will be seen from Tables I. and IV., that of the 996 parishes into which Scotland is divided, 164 returned the number of the insane as distinguished from the fatuous, and 211 returned the number of the fatuous as distinguished from the insane. As the number of the population in each parish was at the same time given, the accompanying tables exhibit the proportionate population in each parish and county for each of these classes, and thus render the facts stated available for exact comparison.

A few observations will be offered on each head separately.

TABLE I.

Showing the Number of Insane in 164 Parishes, and their Proportion to the Population.

Counties.	Number of Parishes.	Population.	Number of Insane.	Proportion.
Edinburgh	9	25,947	29	1 in 894
Linlithgow .....	....	....	....	....
Haddington	5	10,711	6	" 1,785
Berwick	8	13,217	18	" 734
Roxburgh	4	4,741	4	" 1,185
Peebles	1	629	2	" 314
Selkirk	1	1,222	1	" 1,222
Dumfries	5	17,985	15	" 1,199
Kirkcudbright	3	6,706	7	" 958
Wigton	3	5,994	14	" 428
Ayr	10	27,460	12	" 2,288
Bute	1	3,771	2	" 1,885
Lanark	3	11,188	9	" 1,235
Renfrew	2	9,659	12	" 805
Argyll	6	21,417	30	" 713
Dumbarton	1	3,090	4	" 772
Stirling	4	14,917	12	" 1,243
Clackmannan	1	5,159	3	" 1,719
Kinross	1	1,108	3	" 369
Fife	10	26,156	25	" 1,046
Perth	20	39,988	54	" 740
Forfar	8	11,594	19	" 610
Kincardine	6	10,600	16	" 642
Aberdeen	15	31,369	39	" 804
Banff	10	24,909	22	" 1,132
Elgin	4	7,760	14	" 554
Nairn	1	1,457	4	" 364
Inverness	3	11,011	17	" 647
Ross and Cromarty	5	11,011	17	" 647
Sutherland	5	9,768	12	" 816
Caithness	3	9,931	6	" 1,655
Orkney	5	7,590	12	" 632
Shetland	1	1,678	2	" 839
	164	389,743	342	1 in 1,139

A.—*Insane or Lunatic.*

By Table I. it is seen, that in 164 parishes, embracing a population of 389,743 souls, 343 persons were returned as insane, being in the proportion of 1 insane person in every 1,139 of the population. If the like proportion of lunatics existed over Scotland then, instead of 1,325 lunatics, as returned by the census of 1841, Scotland at that period would have contained no fewer than 2,299 lunatics in her population of 2,620,184 souls.

The above conclusion as to the probable number of insane in the population of Scotland is singularly confirmed by several important documents which were kindly shown to me by John C. Brodie, Esq., W.S., Crown Agent for Scotland. When the present Lord Advocate was preparing his Lunacy Bill, he procured returns from all the public and private asylums and madhouses in Scotland, of the number of patients in these establishments, and whether they were private or pauper-patients. He also, at the same time, through the Board of Supervision for the Relief of the Poor, procured the number of pauper lunatics receiving parochial aid. Table II., compiled from one of these documents, exhibits the number of private and pauper lunatics in confinement in the public and private madhouses of Scotland in the year 1847.

TABLE II.

Showing the Number of Private and Pauper Lunatics confined in Public Asylums or Private Madhouses in Scotland in 1847.

	Lunatics.		
	Private.	Pauper.	Total.
<i>In Public Asylums</i>			
In Aberdeenshire	45	165	210
„ Edinburghshire	123	344	467
„ Elginshire .....	.....	30	30
„ Forfarshire.....	84	252	336
„ Inverness-shire .....	.....	10	10
„ Lanarkshire	157	388	545
„ Perthshire	74	90	164
<i>In Private Licensed Madhouses</i>			
In Aberdeenshire	15	.....	15
„ Buteshire	2	.....	2
„ Dumfriesshire	64	66	130
„ Edinburghshire	167	92	259
„ Forfarshire.....	2	.....	2
„ Lanarkshire	47	70	117
„ Linlithgowshire	1	.....	1
„ Renfrewshire	17	112	129
	798	1,619	2,417

By this table, it appears that the total number of lunatics requiring confinement in 1847 was 2,417, and allowing that the population increased, from 1841, in the same ratio as it did from 1831 to 1841, the population of Scotland that year would amount to 2,781,683 souls,

giving a proportion of 1 insane person in confinement out of every 1,150 of the general population.

As there are always in the population several cases of insanity which ought to be in confinement, yet are not, and as these cases are enumerated in the returns of the clergy, but of course are not in the Lord Advocate's returns, it may be very safely assumed that the proportions returned by the clergy are the correct ones, and are as near the truth as it is possible, with our present data, to attain.

Let us then for a moment inquire whether the proportion of insane in Scotland exceeds or falls below that of England or Ireland.

Notwithstanding the existence of a Poor-Law Board, and a Board of Commissioners in Lunacy, in England, and the annual publication of reports by these, it is by no means an easy matter to spell out from these two documents the absolute number of lunatics in England and Wales. The numbers given by each Board do not agree with each other, and vary still more from those documents now and then called for by the House of Commons. By a Return made by order to the House of Commons, on 22nd June, 1847, it appeared, that in England and Wales, there were of lunatics confined—

In county lunatic asylums, hospitals, &c.	5,142
In licensed madhouses	3,761

Total lunatics in England and Wales 8,903

or 1 lunatic in confinement out of every 1,786 of the general population.

By a close comparison, however, of the Poor-Law Commissioners' Reports with those of the Commissioners in Lunacy, it appears that the absolute number of lunatics in confinement over England and Wales is nearly double what that official document shows it to be, and is made up as follows:—

In county lunatic asylums, hospitals, and licensed houses } 13,826	
in England	
Ditto, in Wales	163
Bethlem and naval and military hospitals	606
In jails	32
Found lunatic by inquisition	307
Single patients in private houses	130
Total lunatics in confinement over England and Wales	15,064
Of this number there were, paupers	11,067
Private patients	3,997

Allowing for increase of population, which in 1847 would have amounted to a total of 16,885,324 souls, the above numbers would yield a proportion of 1 insane person in England and Wales out of every 1,120 of the general population—a proportion slightly greater than that of Scotland.

From the official Reports of the Inspectors of the Lunatic Asylums in Ireland for 1848, published by command of Her Majesty, in 1849, it appears, that in a population of 8,175,124 souls, there were only 3,738 insane persons requiring to be confined in public lunatic asylums,

or in private madhouses or jails, being in the small proportion of 1 insane person in Ireland out of every 2,187 individuals of the general population. This result is the more curious, seeing that the great proportion of the Irish are Celts—the very same race as the highlanders of Scotland, among whom insanity is so much more frequent. The probable cause of this will be adverted to afterwards.

To return to Scotland, it may be remarked, that, large as the above estimate is, I am still inclined to consider it as below the truth, even though the returns procured by the Lord Advocate, and the deductions from the facts recorded in the "Statistical Account of Scotland," agree so closely. This opinion is principally founded on the returns made by some of the clergy of the Church of Scotland, and published in the "Statistical Account," in which more care has been taken to procure accurate returns, and fuller details are given. To show that such an opinion has some foundation in fact, I have exhibited in the following table a few of the parishes in which the proportion of insane is more than double the average for Scotland. The list could have been more than quadrupled; but the subjoined will serve to show the general bearing on the question:—

TABLE III.

Showing the Number of the Insane and their Proportion to the Population in a few Parishes of Scotland.

Name of Parish.	Population.	Number of Insane.	Proportion.
Pennicuick, Edinburghshire	2,255	5	1 in 451
Gordon, Berwickshire.....	882	3	„ 294
Coldstream, do.	2,801	6	„ 466
Traquair, Peeblesshire	629	2	„ 314
Cummertrees, Dumfriesshire	1,407	4	„ 352
Kirkcolm, Wigton	426	9	„ 47
Ardnamurchan, Argyll	3,311	8	„ 414
Island of Tiree, Argyll Coast.....	4,687	8	„ 586
Island of Coll, do.	1,409	4	„ 352
Campbelton, Argyll	9,539	16	„ 596
Portmoak, Kinross	1,108	3	„ 369
Kenmore, Perthshire	3,126	7	„ 446
Killin, do.	1,707	7	„ 244
Kilmorach, Inverness	2,201	14	„ 157
Avoch, Ross-shire	1,936	9	„ 215

In so far, then, as the lunatics are concerned, the sister countries stand to each other in the following relations:—

Ireland, one lunatic in every	2,187	inhabitants.
Scotland,	„ 1,139	„
England,	„ 1,120	„

B.—*Fatuous Persons, Idiots.*

By Table IV. it is seen, that in 211 parishes of Scotland, embracing a population of 467,921 souls, 805 were returned as labouring under fatuity. This gives a proportion of 1 idiot or fatuous person in every 581 of the general population. If the like proportion of idiots existed

over Scotland, then, according to the amount of the population in 1841, there would have been 4,486 idiots in Scotland that year. This number, large as it may seem, does not, I fear, fairly represent the total numbers actually existing, seeing that many of the clergy, in making their returns, appear to have attached a limited meaning to the word *fatuous* (the word used in the queries submitted to them), and did not include therein the harmless idiot and imbecile—*silly* persons, as they are termed in Scotland. Thus one clergyman remarks, "Our population comprehends three insane and six *fatuous*, besides several of marked weakness of intellect."—"Statistical Account," vol. 13, p. 231. Another observes, "One insane (a man) is in the asylum; there are two *fatuous*, and six of both sexes idiots or quite *silly*" (vol. 10, 410). Another says, "There is one person *fatuous*, one insane, two imbecile, and two blind" (vol. 5, 411).

TABLE IV.

Showing the Number of *Fatuous* Persons in 211 Parishes, and their Proportion to the Population.

Counties.	Parishes.	Population.	Fatuous.	Proportion.
Edinburgh	7	17,260	44	1 in 390
Linlithgow .....	....	....	....	....
Haddington	4	9,206	18	„ 511
Berwick	6	6,384	14	„ 456
Roxburgh	3	4,280	9	„ 475
Peebles	3	2,066	5	„ 413
Selkirk	1	1,221	3	„ 407
Dumfries	10	26,074	39	„ 668
Kirkcudbright	5	8,603	16	„ 537
Wigton	8	18,505	34	„ 544
Ayr	14	40,254	36	„ 1,118
Bute	2	4,611	6	„ 768
Lanark	10	24,280	39	„ 622
Renfrew	4	17,513	13	„ 1,347
Argyll	8	20,650	40	„ 516
Dumbarton	2	4,261	6	„ 710
Stirling	5	17,657	14	„ 1,261
Clackmannan	1	5,159	3	„ 1,719
Kinross	2	4,116	3	„ 1,372
Fife	15	36,307	47	„ 772
Perth	20	33,788	87	„ 388
Forfar	10	19,280	43	„ 449
Kincardine	8	12,798	27	„ 474
Aberdeen	16	26,831	42	„ 638
Banff	9	23,686	34	„ 696
Elgin	4	5,058	8	„ 632
Nairn	1	1,177	2	„ 588
Inverness	7	19,158	36	„ 532
Ross and Cromarty....	8	17,316	46	„ 376
Sutherland	6	11,241	24	„ 468
Caithness	3	15,030	37	„ 556
Orkney	6	8,443	26	„ 324
Shetland	3	5,708	16	„ 356
	211	467,921	805	1 in 581

The following table exhibits a few of the parishes in which the number of fatuous persons is more than double that of the average of Scotland:—

TABLE V.

Showing the Number of Idiots and their Proportion to the Population in a few Parishes of Scotland.

Parish.	Population.	Fatuous.	Proportion.
Latheron, Caithness	8,000	20	1 in 400
Traquair, Peebles	629	2	„ 314
Bertram Shotts, Lanark	3,750	12	„ 312
Islands of Canna and Gigha, Argyll.....	550	2	„ 275
Brechin, Forfarshire	6,508	24	„ 271
Comrie, Perthshire	2,622	10	„ 262
Stromness, Orkney	2,139	10	„ 214
West Kilbride, Ayr.....	1,684	8	„ 210
Kingarth, Bute	840	4	„ 210
Westruther, Berwick	870	4	„ 217
Bowden, Roxburgh.....	1,010	5	„ 202
Dalkeith, Edinburgh	5,853	30	„ 195
Kintail, Ross	1,240	7	„ 177
Stromness, Sutherland	1,153	10	„ 115
Sandsting and Aithsting, Shetland ...	2,177	12	„ 181
Meigle, Perth	873	8	„ 109
Humbie, Haddington.....	875	10	„ 87
Kirkcolm, Wigton	426	5	„ 85

The returns procured by the Lord Advocate, and the Reports of the Board of Supervision for the Relief of the Poor in Scotland, furnish us with some additional facts relative to the fatuous. These returns, however, do not include the whole number of such persons in Scotland, but only of those receiving parochial aid, and in this respect differ essentially from the returns relative to the lunatics.

The harmless idiot or imbecile, though unable to labour profitably, is by many, even of the lowest classes, supported at home without parish aid. All such cases, and they are, without doubt, the majority, are not returned in the Reports of the Board of Supervision; but with regard to lunatics, the case is different; being dangerous to society, they cannot be kept at home, excepting in a few rare cases. The returns, therefore, from all the public and private madhouses will give a very near approximation to the total number of lunatics in a population; but the pauper returns of the number of fatuous persons or idiots must always be much below the truth.

This is rendered apparent by the Board of Supervision's returns of the number of fatuous persons receiving parochial aid in 1847 and 1848. By the Third Report of that Board, it appeared that 1,960 fatuous persons or idiots were receiving parish relief over Scotland during 1847, all of which number were so harmless, that they were boarded with friends or others. As the table which is appended to that Report did not distinguish between insane and fatuous persons, but included all of unsound mind who were in the receipt of parochial aid, it is unnecessary to refer to it more in detail. It is, however, appended in Table VI., in order to complete the facts on this important

head of inquiry. This table possesses the additional advantage of giving the sexes of the deranged, by which it appears that the proportion of females exceeds that of the males by a proportion somewhat greater than could be accounted for by the excess of females in the general population.

TABLE VI.

Showing the Number and Distribution in the Counties of Scotland of the Pauper Lunatics and Idiots for the Year ending May, 1849.

Counties.	Population, 1841.	Number of Insane and Fatuous Persons.		
		Males.	Females.	Total.
Edinburgh	225,276	250	321	571
Linlithgow	27,466	19	17	36
Haddington	35,835	44	37	81
Berwick	34,345	23	31	54
Roxburgh	46,271	42	42	84
Peebles.....	10,558	3	3	6
Selkirk	7,413	4	6	10
Dumfries	72,855	39	52	91
Kirkcubright	41,119	30	30	60
Wigton	39,195	32	33	65
Ayr	164,477	76	71	147
Bute.....	15,740	6	8	14
Lanark.....	427,738	217	212	429
Renfrew	154,160	81	95	176
Argyll	96,824	59	72	131
Dumbarton	46,005	21	17	38
Stirling	80,535	36	37	73
Clackmannan	20,041	5	14	19
Kinross	7,834	3	5	8
Fife	139,729	79	86	165
Perth	137,854	128	102	230
Forfar	170,395	116	128	244
Kincardine	33,550	24	28	52
Aberdeen.....	192,893	119	112	231
Banff	48,463	27	62	89
Elgin, or Moray	35,879	31	38	69
Nairn	7,186	3	12	15
Inverness.....	98,417	50	48	98
Ross and Cromarty.....	79,941	50	56	106
Sutherland	23,715	23	23	46
Caithness.....	37,410	37	32	69
Orkney	30,507	17	29	46
Shetland	30,558	11	10	21
	2,620,184	1,705	1,869	3,574

It may prove interesting to inquire whether the sister countries of England and Ireland contain a larger or smaller proportion of fatuous persons in their population.

Both England and Ireland labour under greater disadvantages than Scotland with regard to ascertaining the probable number of idiots or fatuous persons. The sole returns on this head which they possess are the numbers of the fatuous poor receiving parish aid.

By the Reports of the Commissioners in Lunacy for England and

Wales, it appears that all the deranged persons confined in workhouses are in the condition of fatuous persons or helpless idiots. By combining the information furnished in their Third Annual Report, and in their "Further Report," it appears that the number of fatuous paupers stands thus:—

	Idiots.
In poor law union workhouses and single parishes, &c., under late Act ...	8,986
In unions under Gilbert's Act	176
Calculated excess of pauper idiots in workhouses above those returned by the parish officers	3,053
Total in England and Wales in 1847-8 receiving parochial relief	
	12,215

Allowing for increase of population, and estimating the total inhabitants of England and Wales to have been 16,885,324 in 1847, the above numbers give the proportion of 1 pauper idiot in every 1,382 persons. We should be quite safe in reckoning the absolute number of idiots in England and Wales at double the above numbers, so as to include all classes, and thus calculate the proportion of idiots over the country to be 1 idiot in every 691 inhabitants. This, however, in the present state of our knowledge, must be a mere guess, which it is to be hoped the approaching census will enable us to correct.

In Ireland, again, the Lunacy Reports mention very different numbers of idiots as existing in that country from what the Poor-Law Commission Reports do. By the Lunacy Commission Reports we find that there were in workhouses in 1848 no fewer than 1,943 fatuous persons; while by the Poor-Law Commission's Reports we learn, that during the same year, there were relieved of *out-door lunatics*, as they are termed, 2,745 persons. The explanation which is appended to this term (*out-door lunatic*), shows that it is pauper idiots not requiring confinement that is meant. These numbers make a total of 4,688 pauper idiots receiving parochial aid during the year 1848; and as it is very questionable whether the population of that unhappy country has made any increase since 1841, the proportion of pauper idiots in her population would amount to 1 in every 1,743 inhabitants. The Lunacy Commissioners, however, report that they have received returns from the Constabulary, which show that at least 6,000 fatuous persons (*insane*, they are termed) wander about the country. As the greater portion of these parties, however, are shown, by the Poor-Law returns, not to apply for relief, they must be left out of the calculation, if we compare the number of idiots receiving relief in the three sister countries.

As above observed, Scotland contained only 1,960 pauper idiots receiving parochial aid in 1847, which, in its calculated population for that year, of 2,781,683 souls, would give a proportion of 1 pauper idiot in every 1,419 inhabitants.

In so far, therefore, as the pauper fatuous persons are concerned, the three sister countries would stand to each other in the following relations:—

England, one pauper idiot in every	1,382	inhabitants.
Scotland,	1,419	"
Ireland,	1,743	"

This is the whole extent to which the comparison can be carried at present; but it is much to be desired that the approaching census should take an accurate note of the number of the insane and fatuous over the kingdom, and thus enable us to ascertain with some approach to accuracy the proportion of the population affected with these distressing maladies.

Before leaving this subject, it is of some importance to note the proportion of the sexes affected with lunacy and idiocy, as this has some important bearings on the theory of the cause or origin of the disease. According to returns from eight of the public lunatic asylums in Scotland, it appears that of 6,528 patients admitted during a series of years, 3,493 were males, and 3,035 females, showing that in Scotland males were one-seventh more prone to lunacy than females, supposing the proportion of the sexes in the population was equal.

In England, on the other hand, we find, that of 10,429 insane persons, 4,499 were males, and 5,930 females, showing that, in England, females were one-fourth more prone to lunacy than males.

In Ireland, however, the number of insane males exceeds that of insane females, though the proportions are more equal than either England or Scotland. Thus, of 3,738 lunatics, 1,940 were males, and 1,798 females, showing that males, in Ireland, were one-fourteenth more prone to lunacy than females. Let us glance, then, for a moment, at the probable cause of this great prevalence of disordered intellect in Scotland and the sister kingdom, with the view of ascertaining how far the facts adduced throw light on this recondite subject of inquiry.

Esquirol, Quetelet, and others, while holding the opinion that "idiocy is dependent on soil and on material influences," also hold that "insanity is the product of society and of moral and intellectual influences." By this they mean, that insanity is a disease which attends and increases with civilization, and is most prevalent in those countries where the moral and intellectual faculties are most highly developed. Idiocy, on the other hand, they regard as being produced by residence in a high and mountainous locality, in fact, as being attributable to *situation*, as much as they hold cretinism and goitre to be.

Correct statistics are the best means of proving the falsity or truth of any theory; and, unfortunately for both the above theories, the statistics of insanity and of fatuity in England and Scotland lend no countenance whatever to them. Did insanity prevail most among those in the highest stage of civilization—among those whose moral and intellectual faculties were most strongly exercised, it would prevail most extensively among the upper and middle classes of society. The very reverse of this, however, is observed in every country of which correct statistics are kept. In Scotland, of 2,417 lunatics in 1847, no fewer than 1,619 belonged to the class of paupers, while only 798 belonged to the upper and middle classes of society. In England, of 15,064 lunatics, in 1847, no fewer than 11,067 were paupers, while only 3,997 persons were the quota furnished by all classes of society above the condition of paupers.

The theory, therefore, which endeavours to account for the greater prevalence of insanity on the supposition of its connection with civilization, or with the greater development of the moral and intellectual

faculties, is utterly baseless, seeing that these very carefully-collected statistics demonstrate that *insanity is least prevalent among those whose intellectual attainments and civilization is highest.*

But the same conclusion is arrived at from an examination of the facts still more minutely. If the greater development of the intellectual faculties had anything to do with the production of insanity, not only would that disease prevail most among the upper classes of society, but it would be out of all proportion most common among the male sex. What shall we say then to the fact that, in England, one-fourth more females are affected with that disease than males. Nay, even Quetelet's own figures prove, that over all the world, as a whole, females are affected in greater numbers than males.

Table I. is, however, one of the most satisfactory refutations of Esquirol's and Quetelet's theory which could be produced. Let the counties in which the population is in the highest state of civilization and in the highest stage of moral and intellectual attainment be picked out, and arranged on one side, and those in which the inhabitants are in the lowest stage of civilization and in the lowest state of moral and intellectual attainment, be arranged on the other, and it will be found, that while the average of the most civilized counties yields only about one insane person in every 1,200 or 1,300 individuals, the barbarian counties yield a proportion of one insane in every 700 or 800 persons. In fact, had cultivation of intellect anything to do with the development or non-development of insanity, the converse of Esquirol's theory might be asserted to be the correct one, viz., that the more uncultivated the intellect, the more dormant the faculties, and the more unbalanced the passions by the restraints of high civilization, the more prevalent would be insanity.

I am far, however, from believing that either one or other is the cause of insanity, though I grant readily that poverty, privations, and an untrained and unbalanced mind, will act as powerful adjuvants in exciting a disease to which a tendency is given from any cause.

Again, with regard to the theory of soil and material influences favouring the production of idiocy, it is at once granted that, on a *primâ facie* view, such a theory appears, so far at least, to explain the prevalence of cretinism and idiocy in Switzerland. But to Scotland, England, or Ireland, this theory appears to be no more applicable than the former one relative to the insane. Did soil favour its development, or produce it, the proportion of idiots ought to be vastly greater on the high primitive mountain ranges of Aberdeenshire than on the low-lying red sandstone formations of Orkney and Shetland, or than in the volcanic or trap Western Islands. Did height above the level of the sea produce idiocy, it ought to be more prevalent on the high mountain ranges than on the sea coasts or low-lying islands around Scotland. But not only is it not so, but, if we are to judge from the relative proportion of *pauper idiots*, low-lying or level England yields a greater proportion than mountainous Scotland; and the almost level northern islands of Scotland yield a greater proportion of idiots than the interior hilly and mountainous regions. A reference to Table IV. will show these facts relative to Scotland, and will serve to satisfy the most bigoted defender of Esquirol's theory, that no theory of soil, climate, height, or material influences, will account for the now known

facts relative to the prevalence and proportion of idiocy in the various counties of England, Scotland, and Ireland.

As a general fact, with regard to Scotland, it may be stated, that idiocy appears to be nearly equally prevalent among the three distinct races met with in different parts of the island, viz., the Saxons and Normans in the low countries, the Celts in the Highlands and Western Islands, and the Danes and Norwegians, or Scandinavians, in Caithness and in the Orkney and Shetland Islands. Generally speaking, too, it may be said to be equally prevalent in the hilly regions as in the plains and islands; equally prevalent over every geological formation, the primitive districts of Aberdeenshire, &c., the coal measures of Berwick, Edinburgh, &c., the old red sandstone districts of Orkney and Shetland, and the trap districts of Peebles and the border counties.

Whatever, therefore, the proximate cause of idiocy, and, it may be added, of insanity, be, it must be one which is NOT dependent on climate, on soil, on exposure, on geological formation of the surface, nor on race. What then is most likely to be the proximate cause of insanity? What cause will account for the much greater prevalence of insanity in Scotland and England, than in Ireland or most other countries of the globe?

In the endeavour to solve this question, I shall limit myself to Scotland, believing that the same agencies are at work in England, but knowing too little of the internal economy of it to speak of it in the same positive manner in which I can speak of my native country. There is one peculiarity in the social condition of the people of Scotland which appears to me to be quite adequate to explain the excessive tendency to insanity and idiocy among its population, that is, the prevalence of the intermarriage of blood-relatives. This prevails in Scotland, and, I have reason to believe, in England and Wales also, to an extent greater perhaps than among the inhabitants of any other known country. This circumstance, or *fact* rather, has been repeatedly alluded to by the clergy in the accounts of their parishes, published in the "Statistical Account of Scotland," and is mentioned as one of the remarkable features of the Scottish character. Thus one clergyman remarks, "They are all so closely connected by blood-relationship and intermarriage, that they are all near relatives of one another" (vol. 7, p. 245). Another, struck by the same fact, says, "The intermarriages which have taken place among them have formed them into an extended community of blood relations" (vol. 10, p. 436). &c., &c.

Now it is a known fact, with which every medical practitioner must be conversant, that the children resulting from the intermarriage of near blood relatives are not only much more delicate, and more liable to scrofulous and brain diseases, than other children, but are also much more frequently born idiotic, blind, deaf, or dumb. In my own limited experience, I have several times had this painful fact brought under my notice, and have no doubt of its general truth. The breeders of our domestic animals know well this fact, and consequently avoid breeding in and in, as it is termed, in consequence of its pernicious effects on the progeny. Can we, therefore, hesitate to believe that the delicacy of organization which is the natural result of such unions should manifest itself in the production of a larger number of idiots at

birth or during childhood, and a greater tendency to insanity, on any exciting cause, in riper years, than in those countries where such intermarriages are not so prevalent?

Supposing, then, that this is the proximate cause of the prevalence of mental derangement in a community, what an apparently simple explanation does it afford of the presumed greater prevalence of insanity and idiocy in Scotland, than in Ireland or the continental countries of Europe! In Roman Catholic countries, cousin-marriages are discountenanced by the Church, and as they require a dispensation, are comparatively rare. In Protestant countries, on the other hand, the Church throws no barrier in the way of such marriages, and, consequently, over the length and breadth of Britain, but especially in Scotland, of which I can speak more confidently, cousin-marriages are extremely common.

As the only circumstance, therefore, which is common to the different races existing over Scotland and England, is the frequency of the intermarriage of near blood relatives, and as this cause can be traced in numerous instances to give rise to the production of mental derangement, I am inclined to regard it as the most likely proximate cause of idiocy at birth, of fatuity from the effects of brain diseases in childhood, and of insanity in riper years.

Even the few facts known with regard to Roman Catholic Ireland go to support the theory now started, and the greatly lesser prevalence of mental alienation among the natives of most of the different states of Europe goes far to support my views.

Now that England is favoured with a Registration Act, and thus possesses the means of acquiring distinct information on all points connected with the movement of the population, I would take leave to suggest to the Registrar-General the desirability of adding one more query to the marriage schedule, viz., "*What relation (if any) the parties are to each other?*" The information could be thus easily acquired, and we should have it in our power to ascertain by correct statistical data what proportion of the population enter into such unions.

II.—*Deaf and Dumb.*

There are few countries relative to which we have returns of the number of deaf and dumb. Yet this is an important element in the population, especially when taken in connection with the numbers labouring under mental derangement, seeing that the same general causes which give rise to the production of the one, also cause the other. The whole particulars I have been able to collect relative to the number of deaf and dumb in Scotland have been gathered from the Reports in the "*Statistical Account of Scotland,*" and are expressed in Table VII.

From this table it appears, that 161 parishes, embracing a population of 443,721 souls, contained 397 deaf and dumb persons, or 1 to every 1,117 inhabitants. It will be seen, by a reference to Table I., that this is a proportion slightly greater than the number of insane. If the other parishes in Scotland, which made no returns as to the number of the deaf and dumb, contained an equal proportion to their population, the number of deaf and dumb in Scotland in 1841 would have amounted to 2,344.

TABLE VII.

Showing the Number of Deaf and Dumb, and the Population in 161 Parishes in Scotland.

Counties.	Parishes.	Population.	Deaf and Dumb.
Edinburgh	6	15,661	13
Linlithgow .....	....	....	....
Haddington	4	9,921	6
Berwick	8	12,625	8
Roxburgh	3	4,280	5
Peebles	2	1,708	3
Selkirk .....	....	....	....
Dumfries	7	20,341	15
Kirkcudbright	1	2,697	1
Wigton	5	10,579	15
Ayr	13	37,188	20
Bute	2	4,611	2
Lanark	7	18,257	12
Renfrew	3	16,513	16
Argyll	7	14,705	21
Dumbarton	2	4,261	8
Stirling	4	18,294	13
Clackmannan	1	5,159	2
Kinross	3	7,043	8
Fife	14	58,254	38
Perth	14	53,939	47
Forfar	7	21,393	21
Kincardine	6	10,133	11
Aberdeen	10	16,672	20
Banff	5	13,634	8
Elgin	2	5,029	3
Nairn .....	....	....	....
Inverness	4	14,956	14
Ross and Cromarty	7	16,697	21
Sutherland	6	11,241	11
Caithness	3	9,931	20
Orkney	3	5,144	12
Shetland	2	3,855	3
	161	443,721	397

Excepting Prussia, Saxony, and the United States of America, I know of no country which has published returns of the number of deaf and dumb in its population.

In 1840, Prussia, in its population of 14,928,501, contained 11,075 deaf and dumb persons, or 1 such person in every 1,347 inhabitants.

Saxony, in 1840, in its population of 1,108,147, contained 1,172 deaf and dumb persons, or 1 such person in every 945 inhabitants.

The United States of America, in 1840, in her population of 17,068,666, contained 6,682 deaf and dumb persons, or 1 such in every 2,554 inhabitants.

We thus see that Scotland appears to contain a larger proportion of deaf and dumb than either Prussia or America, but a smaller proportion than Saxony.

III.—Blind.

Now that the ravages of small-pox are so greatly restrained by vaccination, blindness is by no means so common as once it was. Even yet, however, a large proportion of the cases of blindness met with, perhaps a full half, may fairly be attributed to that loathsome disease, the lower classes being so careless about vaccination, that small-pox still finds among their unprotected children many victims. None of the facts I have been able to collect give any idea of the proportion of persons who were blind from birth, or who became so from the effects of disease. The facts simply refer to the actual number of persons afflicted with blindness in 181 parishes of Scotland, from which we may calculate the proportions existing over the country.

TABLE VIII.

Showing the Number of Blind, and the Population in 181 Parishes in Scotland.

Counties.	Parishes.	Population.	Blind.
Edinburgh	7	15,279	10
Linlithgow .....	.....	.....	.....
Haddington	5	10,711	7
Berwick	7	11,654	7
Roxburgh	3	4,280	2
Peebles .....	.....	.....	.....
Selkirk	1	1,221	2
Dumfries	8	24,175	22
Kirkcudbright	2	5,572	3
Wigton	4	10,426	13
Ayr	14	35,117	24
Bute	2	4,611	4
Lanark	6	18,297	16
Renfrew	4	18,653	15
Argyll	8	15,777	27
Dumbarton	2	4,261	6
Stirling	2	12,342	7
Clackmannan	1	5,159	3
Kinross	3	7,043	8
Fife	14	52,974	33
Perth	20	64,755	48
Forfar	6	18,778	21
Kincardine	7	11,856	20
Aberdeen	10	22,563	25
Banff	8	19,439	16
Elgin	6	10,112	15
Nairn .....	.....	.....	.....
Inverness	9	23,185	22
Ross and Cromarty	8	18,573	21
Sutherland	4	7,356	10
Caithness	4	17,911	17
Orkney	5	7,451	11
Shetland	1	1,678	3
	181	481,209	438

Table VIII. shows, that in 181 parishes, embracing a population of 481,209 souls, 438 persons were afflicted with blindness, being in

the proportion of 1 blind in every 1,098 of the general population. Did the same proportion exist over the remainder of the country, then, in 1841, Scotland would have contained 2,385 blind persons.

The following, then, is the calculated number of all the above objects of pity in Scotland in the year 1841, when its population amounted to 2,620,184:—

Insane	2,299
Fatuous.....	4,486
Deaf and dumb.....	2,344
Blind.....	2,385
	<hr/>
Total	11,514

Thus showing it to be probable that 1 of these objects of pity exists in every 228 inhabitants of Scotland.

IV.—*Paupers, Orphan and Deserted Children.*

It will serve to complete the review of the relative proportions of the population who are dependent on others (not being their parents) for support, to state the number of paupers and of deserted and orphan children. Table IX., extracted from the Appendix to the Fourth Report of the Board of Supervision for the Relief of the Poor in Scotland, exhibits very fully and distinctly all the facts on this head, giving the sexes of the constant paupers and of the orphan and deserted children, and showing their distribution over the various counties of Scotland.

By this table, it appears, that, during the year ending May 1849, there were 106,434 paupers on the parish rolls receiving parochial relief, being in the proportion of 1 regular pauper out of every $24\frac{6}{10}$ persons, according to the census of 1841. As we must, however, allow for increase of population, the numbers of the population would have amounted to 2,816,696 by November 1848, which is the middle of the year under discussion, giving a proportion of 1 regular pauper over Scotland in 1848 for every $26\frac{5}{10}$ inhabitants. It is not a little surprising to see the immense disproportion of the sexes on the poor's roll, 29,596 only being males, while no fewer than 76,838 were females, giving a proportion of very nearly 3 females to 1 male. As a general rule, this disproportion of the sexes is greatest in the highlands and islands, and least in the agricultural and manufacturing counties.

Strange as it may appear, the number of paupers in the several counties of Scotland bears no proportion to the poverty of the county, as might have been expected. On the other hand, the poorest and most barren counties contain the least proportion of paupers, while the richest in agriculture and in commerce contain by far the largest proportion. Thus the rich county of Edinburgh contains 1 pauper on the parish roll for every 15 inhabitants; Lanark, 1 pauper on the roll for every 16 inhabitants; while Caithness has only 1 pauper for every 21 inhabitants; Aberdeen, 1 in every 27 inhabitants; Argyll, 1 in every 29; the Orkney Islands, only 1 in every 36 inhabitants; while the Shetland Islands furnish only 1 pauper for every 38 inhabitants. In fact, pauperism in Scotland appears to abound most in those counties which have the largest commercial or other towns; next in the highly-

improved agricultural counties; and is least prevalent in those counties where the great mass of the population is just above the starvation point.

TABLE IX.

Showing the Number of Paupers, Casual Poor, Orphans and Deserted Children in the different Counties of Scotland in the Year ending May 1849.

Counties.	Number of Paupers.			Number of Casual Poor.	Orphans and Deserted Children.		
	Males.	Females.	Total.		Males.	Females.	Total.
Aberdeen	1,460	5,606	7,066	1,535	236	207	443
Argyll	921	2,400	3,321	719	74	70	144
Ayr	1,347	3,102	4,449	6,569	264	274	538
Banff	435	1,426	1,861	256	24	28	52
Berwick	412	903	1,315	421	19	21	40
Bute	87	356	443	43	15	10	25
Caithness	435	1,341	1,776	336	14	11	25
Clackmannan	195	478	673	432	29	33	62
Dumbarton	294	768	1,062	824	68	72	140
Dumfries	682	1,754	2,436	1,112	72	83	155
Edinburgh	4,219	10,030	14,249	5,479	715	646	1,361
Elgin	315	1,221	1,536	256	19	27	46
Fife	1,179	2,935	4,114	4,603	141	154	295
Forfar	1,377	3,567	4,944	1,730	258	226	484
Haddington	466	961	1,427	1,072	49	53	102
Inverness	795	2,869	3,664	715	55	78	133
Kincardine.....	326	993	1,319	270	35	32	67
Kinross	45	104	149	155	7	5	12
Kirkcudbright.....	463	1,182	1,645	1,019	43	47	90
Lanark	8,290	17,955	26,245	50,015	875	930	1,805
Linlithgow.....	251	648	899	1,052	28	25	53
Nairn	54	245	299	14	1	3	4
Orkney	173	660	833	73	3	6	9
Shetland	120	673	793	201	7	13	20
Peebles	114	195	309	73	10	8	18
Perth	927	2,898	3,825	1,658	92	112	204
Renfrew	1,455	3,834	5,289	8,470	318	268	586
Ross and Cromarty	876	2,974	3,850	383	38	39	77
Roxburgh	569	1,154	1,723	2,432	26	43	69
Selkirk	60	154	214	1,074	6	6	12
Stirling	490	1,424	1,914	1,490	95	102	197
Sutherland.....	206	834	1,040	52	11	11	22
Wigton	558	1,194	1,752	1,153	84	85	169
	29,596	76,838	106,434	95,686	3,731	3,728	7,459

To the above number of regular poor must be added the number of casual poor, amounting, during the year ending May 1849, to 95,686 persons, or 1 casual poor person to every $29\frac{4}{10}$ inhabitants.

The number of orphans and deserted children receiving parochial relief in 1849 was 7,459, being in the proportion of 1 to every 376 inhabitants. It is remarkable that the proportion of sexes among these children is equal, just as it would be in the general population at the same ages. The proportion of deserted children in the different counties seems to follow the same laws as that of the regular poor.

They are most numerous in proportion to the population in the counties containing the large towns, next most numerous in the agricultural counties, and least numerous in the highland and island counties of Scotland.

In these days, when the wealth of a country and its reproductive industry receive the marked attention of all classes, it may be worth a moment's consideration to reckon the proportion of productive and of unproductive labourers in the community.

Mr. Porter, in his remarks on the census of 1841, justly considers that the prosperity of a country is best shown by the larger proportion of productive labourers in its population, and the smaller proportion of unproductive population or children. His remarks were limited to the consideration of the varying proportion of children alone in different European and other states. But startling as were the facts adduced by him, they become much more so when we add the numbers of the different classes above alluded to. Thus, if we reckon all the children under fifteen years as unproductive labourers, the following would represent, in round numbers, the actual amount of individuals in Scotland who require to be supported by the productive labour of both sexes above fifteen years of age:—

Children under 15 years.....	953,186
Regular paupers	106,434
Casual paupers	95,686
Orphans and deserted children	7,459
Insane.....	2,299
Fatuous, or idiots	4,486
Deaf and dumb	2,344
Blind	2,385

Total 1,174,279

If this large number of unproductive persons, amounting to 1,174,279 persons, be deducted from the total population of Scotland, which amounted, in 1841, to 2,620,184, there would be left only 1,445,905 persons as productive labourers. Even this number, however, does not fairly represent the numbers labouring for the support of others. From it would require to be deducted a large proportion of those from fifteen to seventeen years of age, and all above seventy, so that a strict inquiry would find that the half of the population of Scotland was dependent on the other half for support.

V.—Births.

The state of the registers of births in Scotland is a disgrace to any country. Not only are few of the births registered, but small care is taken to insure accuracy in the entries which are made; so much so, indeed, that when a certificate of birth is required for any special purpose, it does not cost much trouble to get a whole grown-up family's names entered on the registers, on paying little more than the accustomed fees.

The whole registers are so defective, that even in towns like Edinburgh, Glasgow, and Dundee, where registration is conducted with some care, not exceeding a third of the total births is entered on the registers. In many of the country parishes, however, the clergyman

very properly insists on the parent registering the birth of his child before he baptizes it. But of course this only applies to those who are members of the Established Church.

The only use which I found could be made of the registers of births was to ascertain the proportion of illegitimate children; and as the result is curious in itself, and is the only fact of the kind extant relative to Scotland, it seems worthy of being put on record.

In 79 parishes, there were, among the members of the Established Church, 4,305 births, and of these 328 were illegitimate, being in the proportion of 1 illegitimate birth in every 13·12 births.

By the wise laws of Scotland relative to legitimacy, well worthy of being adopted in England, a large proportion of these children were legitimized by the subsequent marriage of their parents; so that the above numbers give no idea of the proportion of illegitimate persons in the population. Many of the accounts from the clergy of the different parishes set this matter in its true light. Thus, the clergyman of Methlich, Aberdeenshire, remarks, "The number of illegitimate births in the parish within the last three years previous to 1840 was 11, of which 7 were ante-nuptial cases."—Statistical Account, vol. xii., p. 968.

The clergyman of Ancrum, Roxburghshire, says, "During the last three years, there have been 20 illegitimate births, but in 8 of the cases the parties were afterwards married" (vol. iii., p. 247).

Of Tain, in Ross-shire, it is remarked, "Number of illegitimate children in the parish during the last three years 15, but this includes several cases that were afterwards followed by the marriage of the parents" (vol. xiv., p. 293).

Of Clonmel, in Ayrshire, it is remarked, "*Instances of this kind (illegitimate births) have of late years been generally followed by marriage*" (vol. v., p. 530).

Of the parishes of Liff and Beuvri, Forfarshire, the clergyman remarks, "The number of illegitimate children born within the parish within the last three years is 7. *In most of these cases the parents were afterwards married!*" &c.

I have been the more particular in bringing prominently forward these facts relative to the diminution of the number of illegitimate children in the population by the subsequent marriage of the parents, from the circumstance that, in every enlightened community, the number and condition of the illegitimate are attracting more or less attention. Illegitimacy, as Bernouilli very justly remarks, is in itself an evil to a man; and I quite agree with him, that it is the duty of the State not only to seek to diminish the number of illegitimate births, but, by every means in its power, to lessen the proportion of illegitimacy in its population. I cannot but regard the Scottish laws relative to legitimacy as both wise and just, that *the subsequent marriage of the parents legitimizes all the children born before marriage*. I hold it to be one of the crying evils of the English law, that no amount of repentance of the parents, and no subsequent marriage, can legitimize the offspring born before marriage. Why should the laws of man on this point be more unforgiving than the laws of God? The having illegitimate children is *not a crime* punishable by the laws of man; and if the parents are willing and anxious to place their children in a more favourable social position, why should the laws of man interfere

and declare that no subsequent marriage can legitimize these children, or place them in a more favourable social position than that they received, without any fault of theirs, at birth? Scotland is a standing proof that the allowing children to be legitimized by the subsequent marriage of their parents is not found to have any hurtful effects on the morals of the people; and as this is both an enlightened and a moral mode of reducing the proportion of the illegitimate among the general population, I hope the day is not far distant when we shall see our legislators assimilate the English laws on this point to those of Scotland.

As it is interesting to compare the relative proportions of illegitimate births in the different countries of Europe, the following table (X.) is appended, compiled from the Registrar-General's Sixth Annual Report. The table shows both the total average annual number of births and of illegitimate births, and the proportion of the illegitimate to the total births.

TABLE X.

Showing the Proportion of Illegitimate to the Total Births in several Countries of Europe.

States.	Total Births.	Illegitimate Births.	Ratio of Illegitimate Births to 100 Births.	Proportion, One Illegitimate to
Sardinia	1,457,493	30,474	2.09	1 in 44.54
Sweden	476,799	31,289	6.56	„ 15.23
Norway	181,363	12,111	6.67	„ 14.97
England	517,739	34,796	6.72	„ 14.88
Belgium	138,135	9,354	6.77	„ 14.66
France	982,896	69,928	7.11	„ 14.05
Prussia.....	591,505	42,129	7.12	„ 14.03
Scotland (part of) ...	4,305	328	7.61	„ 13.12
Denmark	64,376	6,020	9.35	„ 10.69
Hanover	55,559	5,487	9.87	„ 10.12
Austria	894,711	101,821	11.38	„ 8.79
Wurtemberg	75,456	8,859	11.74	„ 8.51
Saxony.....	70,094	10,512	14.99	„ 6.66
Bavaria	149,185	30,729	20.59	„ 4.85

VI.—Marriages.

Table XI. exhibits the number of marriages in 523 parishes of Scotland, embracing a population of 1,509,760 souls, and including all the chief towns. This table is compiled partly from the facts stated relative to marriages in that voluminous work, the "Statistical Account of Scotland," partly from official returns obtained through the kindness of the Chamberlains of many of the large towns. The registers of marriage in Scotland are both registers of the proclamations of the banns of marriage and also of the marriage itself. In many of the large towns, a proportion of the parties marrying are so careless in the matter of registration, that they do not return to enter the marriage itself on the register. But in almost all the country parts of Scotland, this point is more attended to, and the registers of marriage are therefore more perfect.

By the Scottish marriage law, no clergyman dares unite parties in marriage unless he is certified by the production of the banns of marriage that the intention has been three times proclaimed in the parish church of each of the parties. If the parties belong to different parishes, each marriage may be twice registered. The clergy, however, in drawing up their respective reports, have very wisely allowed for this; and while they return all the marriages where both parties reside in the parish, only return the half in cases in which only one of the parties resided in the parish. It thus happens that the aggregate returns from the parishes furnish an exact list of the number of marriages among the population.

TABLE XI.

Showing the Number of Marriages and their Proportion to the Population in 523 Parishes of Scotland.

Counties.	Number of Parishes.	Population.	Marriages.	Proportion.
Edinburgh	31	200,230	1,528	1 in 132
Linlithgow	4	6,844	42	„ 162
Haddington	16	23,148	176	„ 131
Berwick	18	21,186	152	„ 136
Roxburgh	12	21,955	157	„ 133
Peebles	14	7,680	61	„ 125
Selkirk	3	4,584	36	„ 127
Dumfries	31	40,350	364	„ 110
Kirkcudbright	10	16,304	94	„ 173
Wigton	8	19,927	118	„ 168
Ayr	27	85,496	797	„ 107
Bute	4	11,532	56	„ 206
Lanark	40	360,803	2,893	„ 124
Renfrew	18	81,959	816	„ 100
Argyll	22	38,943	243	„ 160
Dumbarton	8	24,327	201	„ 121
Stirling	13	44,138	367	„ 120
Clackmannan	1	1,500	14	„ 107
Fife	38	57,408	617	„ 93
Kinross	1	3,008	22	„ 136
Perth	41	91,790	739	„ 124
Forfar	29	113,722	973	„ 115
Kincardine	12	18,918	148	„ 128
Aberdeen	37	117,843	879	„ 134
Banff	14	27,911	184	„ 151
Elgin	10	18,610	130	„ 143
Nairn	2	2,634	16	„ 164
Inverness	13	23,911	151	„ 158
Ross and Cromarty...	19	39,391	272	„ 144
Sutherland	7	13,415	77	„ 174
Caithness	7	23,334	137	„ 170
Orkney	9	12,936	84	„ 154
Shetland	4	4,030	25	„ 161
	523	1,509,761	11,579	1 in 130·3

Table XI. gives the mean annual number of marriages in 523 parishes of Scotland, the period of observation extending over a period of seven years, comprised between the years 1835 and 1845. From

this table it appears, that in a population of 1,509,761, there occurred annually 11,579 marriages, or 1 marriage annually out of every $130\frac{3}{10}$ souls. This proportion is very little inferior to the proportion of marriages in England during the same period. From the Registrar-General's Eighth Annual Report we learn that the proportion of marriages in England, from 1836 to 1845, was, annually, 1 marriage out of every $128\frac{3}{10}$ souls. The fact of the returns from Scotland corresponding so closely with those of the sister country, of itself shows how carefully these returns have been prepared, and give greater confidence to any conclusions founded thereon.

A reference to the last column of Table XI. shows that the proportion of marriages in the different counties varied considerably. As a general rule, marriages were most numerous where manufactures, trade, and agriculture, were most actively carried on, and fewest in the highland and island districts.

As the above returns embrace more than a half of the entire population of Scotland, they may be considered to give a very fair and correct view of the proportion of marriages in the population. Calculating the proportion of marriages to the entire population at the same rate, would lead to the conclusion that, in 1841, when the number of the population stood at 2,620,184, the annual number of marriages would amount to 20,095, being 1 marriage in every $130\frac{3}{10}$ souls.

For the sake of comparison, I have appended a table of the proportion of marriages in several of the countries of Europe, compiled from the Registrar-General's Report.

TABLE XII.

Showing the Proportion of Marriages to the Population in the Different Countries of Europe.

	Years.	Proportion of Marriages to Population.
Frankfort.....	1837-42	1 marriage in 193
Bavaria	1839	" 152
Denmark	1835-39	" 134
Hanover	1842	" 132
Sweden	1826-35	" 131
Scotland	1835-45	" 130
Norway	1826-38	" 129
England	1835-45	" 128
France	1842	" 122
Austria	1834, 7, 9	" 120
Prussia.....	1840, 41	" 109
Russia	1842	" 99
Belgium	1841	" 93
Saxony.....	1832-38	" 80

Before leaving the subject of marriages, it may be mentioned that there is one point on which it is exceedingly desirable we had more particular information, viz., the relative proportion of fruitful and unfruitful marriages. On this important point in vital statistics and social economy we possess very little information; indeed, almost all we do know we owe to the investigations of Professor Simpson, of

Edinburgh, published in the "Edinburgh Medical and Surgical Journal, for January 1844." He got some friends to take the census of two villages for him, for the purpose of ascertaining this very point, viz., the census of Grangemouth, in Stirlingshire, and of Bathgate, in Edinburghshire. At the same time he added the results obtained from a critical examination of Sharpe's work on the British Peerage. The following was the table he gave as the result of his researches:—

	Total Number of Marriages.	Number of Marriages without Issue.	Proportion.
Grangemouth	202	20	1 in 10½
Bathgate	455	45	„ 10½
British Peerage	495	81	„ 6½
	1,252	146	1 in 8½

It may be mentioned, however, that in Sharpe's work on the British Peerage, in 1833, it is mentioned that there were in all 503 marriages, of which 401 had issue, and 102 had no issue; but Professor Simpson, in his calculations, did not include marriages which had not subsisted at least five complete years; he also excluded the unproductive marriages where the husband at the date of the marriage exceeded fifty-six years of age. He therefore made the real proportion of marriages *with* issue appear greater than it really was.

In the "Statistical Account of Scotland," I have met with accurate returns on this point from only two parishes. Many state the number of families with or without children, but forget to tell us how many of these families consisted of single unmarried persons.

In the account of the parish of Portpatrick, in Wigton, it is mentioned that the number of persons in the parish who have been married was 680, and of these 31 had no issue, giving a proportion of one married person without issue for every 21·9 married.

In the parish of Birse, Aberdeenshire, the number of marriages subsisting in the parish, including widows and widowers, was 259, of which 14 had no issue, giving a proportion of 1 marriage without issue for every 18·0 marriages.

These facts are too few to allow of any general conclusions being deduced from them. They, however, induce the earnest desire that the approaching census of the population may be taken with sufficient minuteness to throw some light on such an interesting subject.

VII.—Deaths.

Table XIII. is compiled from the returns of deaths made in the "Statistical Account of Scotland," and is limited entirely to the country districts, including the smaller towns and villages. The mortality of the fourteen larger towns is excluded, and is given in a separate table. This table gives the average population and the mean annual deaths for each parish referred to during a period of seven years,

most of these seven years being included between the years 1835 and 1845.

TABLE XIII.

Showing a Seven Years' Average of the Annual Number of Deaths and their Proportion to the Population in 381 Parishes of Scotland.

Counties.	Number of Parishes.	Population.	Deaths.	Proportion.
Edinburgh	8	26,638	623	1 in 42·7
Haddington	12	19,247	311	„ 61·8
Berwick	16	19,442	268	„ 72·5
Linlithgow	5	9,653	145	„ 66·5
Roxburgh.....	11	15,119	227	„ 66·6
Peebles.....	9	7,135	91	„ 78·4
Selkirk.....	3	4,584	81	„ 56·6
Dumfries	26	46,935	704	„ 66·6
Kirkcudbright	7	12,091	189	„ 63·4
Wigton	4	8,279	116	„ 71·2
Ayr	22	73,509	1,420	„ 52·4
Bute.....	3	7,955	155	„ 51·3
Lanark.....	25	78,335	1,396	„ 56·1
Renfrew	7	75,005	2,217	„ 33·8
Argyll	3	8,201	176	„ 46·6
Dumbarton	5	12,539	312	„ 40·1
Stirling	9	25,301	436	„ 58·0
Clackmannan	1	1,500	14	„ 107·1
Kinross	1	3,008	53	„ 56·7
Fife	31	59,952	1,293	„ 46·3
Perth	27	64,277	1,258	„ 51·0
Forfar	31	101,579	1,904	„ 53·3
Kincardine	10	14,166	303	„ 46·7
Aberdeen.....	23	38,530	621	„ 62·0
Banff	4	13,056	195	„ 72·0
Elgin	5	12,079	146	„ 82·7
Nairn	1	1,457	34	„ 42·8
Inverness.....	1	1,092	15	„ 72·8
Ross and Cromarty....	6	14,150	172	„ 82·2
Sutherland	4	7,379	105	„ 70·2
Caithness.....	3	6,436	83	„ 77·5
Orkney	6	11,210	166	„ 67·5
Shetland	2	2,177	21	„ 103·6
	331	751,016	15,250	1 in 49·2

From this table it appears, that in 331 parishes, embracing a population of 751,016 souls, there died annually during each of these seven years 15,250 persons. This gives a proportion of 1 death annually out of every $49\frac{2}{10}$ living, or 20·30 deaths annually out of every 1,000 living. It is unnecessary to remark, that this fact exhibits the healthiness of Scotland in a favourable light. The mean annual mortality for all England for the eight years 1838 to 1845 was in the proportion of 1 death annually out of every 46 persons living, or 21·76 deaths per annum out of every 1,000 living.

It will be seen by a reference to Table XIV., that the mortality in the towns of Scotland is considerably higher than it is in the country districts. Thus, in fourteen of the chief towns of Scotland, em-

bracing a population of 764,297 persons, the annual average of deaths amounted to 20,397, being in the proportion of 1 death annually out of every $37\frac{4}{10}$ living, or 26.68 deaths per annum out of every 1,000 inhabitants.

TABLE XIV.

Showing the Average Annual Mortality in the 14 Chief Towns of Scotland.

Towns.	Years of Observation*.	Population.	Deaths.	Proportion.
Edinburgh	1841-46	140,409	3,873	1 in 36.2
Glasgow	1838-44	282,087	8,049	„ 35.0
Aberdeen	1845-47	63,288	1,333	„ 47.4
Dundee	1839-46	62,794	1,528	„ 41.0
Greenock	1845, 6, 8	36,936	1,055	„ 35.0
Paisley	1845, 6, 8	50,000	1,378	„ 36.2
Leith	1845-7	26,808	747	„ 35.8
Kilmarnock	1845-8	19,956	565	„ 35.3
Perth	1845-7	19,293	510	„ 37.8
Dumfries	1826-32	11,606	229	„ 50.6
Ayr	1830-36	7,525	175	„ 43.0
Falkirk	1833-39	13,037	255	„ 51.1
Dumfermline	1837-43	18,500	407	„ 45.4
Montrose	1828-34	12,055	293	„ 41.2
		764,297	20,397	1 in 37.4

* It may be mentioned, once for all, that in every case, and in every table, all the years named are included. Thus, 1841-46 means from the beginning of the year 1841 to the end of the year 1846.

Table XIV. is drawn up from various sources, viz., from the official reports furnished by the Chamberlains of several of these towns, from the Reports of the British Association, in 1842, from the Reports on the Sanitary State of Edinburgh, and Reports on the Mortality of Edinburgh and Leith, by myself, and from the "Statistical Account of Scotland." The reports of several of these towns could have been brought down to the present day, but as the last two years in especial have been years of unusual epidemic mortality, it was thought that a more correct estimate of the average or mean mortality would be arrived at by selecting the years named in the table. With regard to Greenock, Perth, and Kilmarnock, it may be mentioned, that I have not been able to procure correct returns for any years but those above noted; and with regard to Paisley, the mortality during the year 1847 has been omitted, seeing that, during that year, the mortality was raised much above its average by the influx of poor Irish labouring under typhus fever.

If we endeavour to estimate the number of deaths over the whole of Scotland, the above facts enable us to do so. Excepting the population of the above fourteen towns, the whole of the rest of the population of Scotland may be considered as resident in the country, and it is fair to infer that its mortality will be the same as that of the 331 parishes mentioned in Table XIII. The following will therefore be

the results furnished by calculations founded on the above observations:—

	Population.	Deaths.
14 towns	764,297	20,397
331 parishes	751,016	15,250
Rest of Scotland	1,104,871	23,564
Total of Scotland....	2,620,184	59,211

This, then, is the nearest approximation which is at present possible to the usual rate of mortality in Scotland; the population of the towns dying at the rate of 1 annually out of every 37 persons living, and of the country at the rate of 1 annually out of every 49 living.

To complete this short view of the Vital Statistics of Scotland, tables are added of the ages at death, of the principal fatal diseases, and of the mortality during each month of the year. It is much to be regretted that this can only be done for the towns, seeing that the returns from the country parishes give little else than the number of the deaths.

As, however, these tables are drawn up with the view of exhibiting the usual or mean mortality, and not the high and unusual mortality of epidemic years, and as in this paper it is desirable to give all the information which I possess, I have added, in Table XV., the mortality in nine of the chief towns of Scotland to the latest period of which I have been able to obtain the statistics.

TABLE XV.

Showing the Mortality in Different Towns of Scotland for a Series of Years to the Latest Period for which Returns have been procured.

	1849.	1848.	1847.	1846.	1845.	1844.	1843.	1842.	1841.	1840.	1839.
Edinburgh	4,807	5,475	6,706	4,594	3,668	3,964	4,541	3,854	3,507	3,688	4,046
Glasgow	12,231	12,475	18,081	10,854	7,509	7,367	9,459	7,359	8,886	8,821	7,525
Dundee	2,312	2,146	2,520	1,531	1,324	1,169	1,509	1,471	1,358	1,320	1,647
Paisley	1,712	1,552	2,068	1,429	1,154	...	...	...	...	...	...
Leith	1,066	1,212	955	801	486	...	...	...	613	690	...
Greenock	2,344	1,289	2,214	1,087	788	709	911	...	...	...	...
Perth .....	...	921	683	505	389	...	...	...	466	415	428
Kilmarnock .....	...	539	862	459	399	...	...	...	...	...	...
Aberdeen .....	...	2,366	1,466	1,315	1,217	...	...	...	1,034	1,384	1,149

This table (XV.) exhibits some facts for which we were not prepared. On the Continent, it has generally been remarked that the cholera more than doubled the annual mortality, and in every case caused the mortality of the year during which it prevailed to rise high above all previous years. Such has not been noticed to the same extent in Scotland, severe as cholera was, and destructive as were its ravages. In Edinburgh, in Glasgow, in Dundee, and in Paisley, the mortality during 1847, the year of epidemic typhus fever, greatly exceeded that of the year or years when cholera raged. Thus, cholera

raged in Edinburgh in 1848 and 1849, but the typhus fever epidemic caused the mortality of 1847 to exceed that of 1848 by 1,231 deaths, and that of 1849 by no fewer than 1,899 deaths. In Glasgow, again, the typhus fever epidemic caused the mortality of 1837 to exceed that of the cholera year 1848 by no fewer than 5,606 deaths, and also to exceed the mortality of the cholera year 1849 by no fewer than 5,850 deaths.

Dundee and Paisley, though both very smartly handled by the cholera, exhibited the same remarkable fact, the typhus fever year of 1847 showing a higher mortality than the cholera year 1849.

Seeing this is the case, seeing also that cholera is a disease which, as yet, has only passed over us at long and distant intervals—whereas typhus fever, at all times endemic, breaks out in the epidemic form every five or six years—it is the duty of the Legislature to enforce the use of all those means and appliances which the science of the present day has shown to be so efficacious in diminishing the virulence and fatality of that endemic and epidemic malady. With regard to Edinburgh, I can speak positively, that ever since the Irish settled here, epidemics of typhus fever have become more and more frequent, and more and more virulent. It must be borne in mind that typhus fever, being an *endemic* as well as an *epidemic* disease, is always to be met with in particular localities; but formerly it was wont to extend over the town as an *epidemic* only every tenth or twelfth year. Such, however, has been the increased tendency to this complaint of late years, that, during the ten years ending 1848, we have had no fewer than three virulent epidemics of this disease, and every succeeding epidemic has been more prevalent and more virulent than the former one. In proof of this, it may be mentioned, that, during the prevalence of typhus fever during these three several epidemics, the monthly admissions to the fever-wards of the Royal Infirmary, the only hospital we have, were as follows:

Epidemic 1836-39	monthly admissions,	134 cases.
„ 1843-44	„	380 „
„ 1847-48	„	420 „

These facts, then, demonstrate the necessity of actively carrying out those sanitary measures which the sudden invasion and dread of cholera caused to be put in force for a while. We have far more to dread from typhus fever than from cholera; the one is but an occasional visitant, the other is a constant resident. Both cut off by preference those in the prime of life—both, consequently, throw thousands of widows and helpless orphans on the charity of the public. But the above facts clearly demonstrate that typhus is the greater scourge of the two, and proves a greater burden to the country, by the greater number of deaths of those in the prime of life which it occasions. The statist has done all in his power, when he points out these facts to the Legislature; it is for Government to follow these up by an enforcement of the means which science has clearly shown will save human life and increase human happiness.

TABLE XVI.

Showing the Ages at Death in Eight of the Chief Towns of Scotland during a Series of Years.

Ages.	Edinburgh, 1846-7-8.		Leith, 1846-7-8.		Glasgow, 1838-44.		Dundee, 1839-46.	
	Males.	Females.	Males.	Females.	Males.	Females.	Males.	Females
Under 1 year	1,463	1,176	206	207	5,986	5,076	1,264	1,042
1 to 2 yrs.	723	741	152	142	3,790	3,621	612	590
2 ,, 5 ,,	706	658	137	141	3,661	3,487	646	656
5 ,, 10 ,,	385	390	65	77	1,776	1,603	304	301
10 ,, 15 ,,	159	163	23	26	747	705	}282	246
15 ,, 20 ,,	369	280	58	49	896	867		
20 ,, 30 ,,	931	813	113	110	2,144	2,279	327	398
30 ,, 40 ,,	859	792	155	143	2,141	2,223	403	432
40 ,, 50 ,,	874	742	127	137	2,160	2,060	465	476
50 ,, 60 ,,	695	725	127	125	1,687	1,576	367	404
60 ,, 70 ,,	621	747	124	139	1,651	1,813	382	477
70 ,, 80 ,,	466	634	86	135	1,283	1,661	369	490
80 ,, 90 ,,	170	252	25	47	542	829	159	200
90 ,, 100 ,,	13	44	1	3	60	112	16	26
100 and above	....	5	....	....	5	8	1	4
Not stated	91	88	13	25	....	....	....	....
	8,525	8,250	1,412	1,506	28,529	27,920	5,597	5,742
Still-born.....	556	336	121	88	3,003	2,359	507	390

Ages.	Paisley, 1847-8-9.		Greenock, 1843 and 1848.		Aberdeen, 1837-40.		Perth, 1837-41.	
	Males.	Females.	Males.	Females.	Males.	Females.	Males.	Females
Under 1 year	377	309	176	149	347	297	151	188
1 to 2 yrs.	277	221	84	94	205	175	106	88
2 ,, 5 ,,	325	317	105	94	293	258	126	112
5 ,, 10 ,,	212	164	58	51	186	169	52	42
10 ,, 15 ,,	83	79	28	18	93	68	28	25
15 ,, 20 ,,	103	98	43	39	113	110	37	27
20 ,, 30 ,,	219	201	99	107	204	226	90	84
30 ,, 40 ,,	180	201	99	103	219	231	78	89
40 ,, 50 ,,	200	245	116	97	221	220	103	93
50 ,, 60 ,,	193	210	83	88	222	208	105	111
60 ,, 70 ,,	206	213	86	89	246	255	133	148
70 ,, 80 ,,	174	217	62	70	185	257	154	186
80 ,, 90 ,,	68	90	24	44	112	166	78	115
90 ,, 100 ,,	3	13	1	4	16	33	4	13
100 and above	....	....	....	....	1	1	....	....
Not stated	60	55	25	28	....	....	....	....
	2,680	2,633	1,089	1,075	2,663	2,674	1,245	1,321
Still-born.....	155	101	130		?	?	248	

Table XVI. shows the ages at death in eight of the chief towns of Scotland, each for a longer or shorter period of time. To render the facts relative to each town available for comparison with each other, it

was necessary to give a short abstract of this table, and add the calculated proportion which the deaths at four periods of life bear to the total deaths. This has been done on Table XVII., by which it will be seen that the proportion of deaths among children under five years of age is lowest in Aberdeen, and highest in Glasgow. If these eight towns were arranged according to their relative low infantile mortality, they would stand thus:—

Least—Aberdeen,	295	deaths under 5 in 1000	deaths at all ages.
„ Perth,	300	„	„
„ Edinburgh,	329	„	„
„ Greenock,	332	„	„
„ Leith,	342	„	„
„ Paisley,	351	„	„
„ Dundee,	424	„	„
Greatest—Glasgow,	453	„	„

With the exception of Aberdeen and Perth, which exchange places, these towns arrange themselves in the same order, if placed according to the relative mortality among children under fifteen years of age. Thus:—

Perth	} 357 deaths under 15 yrs. per 1000.	Leith	} 408 deaths under 15 yrs. per 1000.				
Aberdeen		391		Paisley	454		
Edinburgh	395	„	„	Glasgow	539	„	„
Greenock	405	„	„				

Dundee, from not giving the ages between ten and fifteen, but only between ten and twenty, is rendered unavailable for comparison but for those under ten and above sixty years of age.

The position which these towns occupy when arranged according to the proportion of least mortality in adult age, is very different from the above; indeed, with the exception of Perth and Aberdeen, relative to whose entire statistics there is manifestly some inaccuracy, they occupy the very reverse positions of what they did when arranged according to the proportion of least mortality among children. Thus:—

Perth,	318	deaths between 15 and 60 years in 1000	deaths at all ages.
Glasgow,	319	„	„
Paisley,	355	„	„
Aberdeen,	391	„	„
Leith,	397	„	„
Greenock,	417	„	„
Edinburgh,	426	„	„

It may be remarked that, with the above exceptions, this is the exact position these towns ought to occupy, if the above facts were accurately collected. If, from a greater amount of attention during infancy, or from a more healthy locality, a greater number of children survive the numerous perils of infancy, there must be among the adults of such population or places a much greater proportion of physically-feeble individuals than in a population or locality where all the feeble are cut off during early life, and only those saved whose constitutions are hardened, and whose frames are thereby better enabled to bear the ills of life.

We see this fact illustrated not only in the mortality of different towns whose healthiness is notoriously different, but still more strikingly in the comparative mortality among the different classes of

society in the same town. Among the higher ranks, most of the children are reared. Among the lower classes, more than a half are cut off before they attain their fifteenth year; and in numerous unhealthy towns, a half of all who are born to the lower classes are cut off before they reach their fifth year. The natural physiological consequence of this is, that, among the adults of the higher classes, there exists a much larger proportion of individuals of feeble frames than among the lower classes. They are, consequently, not only more liable to disease, *but, of necessity, die in larger proportions than the adults of the lower classes.*

The known fact that the upper classes of society do not keep up their own numbers, but require constant recruiting from the lower classes, probably receives an explanation from this very cause. A large proportion of them must possess those weak and feeble constitutions which are unfavourable to increase; and this cause, probably more than the dissipated lives which many, but far from all, lead, appears to me rationally to explain why so many of our old families have died out.

By a reference to the concluding paragraphs of the section on "Marriages," it will be seen how forcibly this conclusion is borne out by the immense proportion of unfruitful marriages existing among the peerage of Great Britain as compared with what occurs among the general population. Among the British peers in 1833, there were 503 existing marriages, of which no fewer than 102 had no issue, being in the great proportion of 1 out of every 5 marriages without issue. By the returns from two parishes in Scotland, only 1 marriage in every 18, and 1 in every 22 marriages, were unfruitful.

TABLE XVII.

Showing the Ages at Death at four different periods of Life, and their Proportion to 1000 Deaths at all Ages.

	Edinburgh.		Leith.		Glasgow.		Dundee.	
	Deaths.	Ratio.	Deaths.	Ratio.	Deaths.	Ratio.	Deaths.	Ratio.
Under 5 Years	5,467	329·	985	342·	25,621	453·	4,810	424·
Total under 15	6,564	395·	1,176	408·	30,452	539·	?	?
15 to 60 Years	7,080	426·	1,144	397·	18,033	319·	?	?
Above 60	2,952	177·	560	194·	7,964	141·	2,134	188·
Total.....	16,596	....	2,880	....	56,449	....	11,339	....

	Paisley.		Greenock.		Aberdeen.		Perth.	
	Deaths.	Ratio.	Deaths.	Ratio.	Deaths.	Ratio.	Deaths.	Ratio.
Under 5 Years	1,826	351·	702	332·	1,575	295·	771	300·
Total under 15	2,364	454·	857	405·	2,091	391·	918	357·
15 to 60 Years	1,850	355·	874	417·	1,974	370·	817	318·
Above 60	984	189·	380	180·	1,272	238·	831	324·
Total.....	5,198	....	2,111	....	5,337	....	2,566	....

NOTE.—In this Table, the "Ages not ascertained" are not included in the totals.

Table XVIII. is constructed for the purpose of showing the proportion of deaths to the living at different ages in seven of the chief towns of Scotland. Instead, however, of taking the latest years, I have selected as years of comparison those of 1840-41-42. This has been done for special reasons. The introduction of railroads to most of our chief towns has very sensibly affected the numbers of the population; and the ratio of increase between 1831 and 1841 affords but a feeble approximation, if any, to the present state of these towns. In a paper like this, therefore, whose object is rather to give a view of the mortality usually prevalent, than to report on the mortality of epidemic years, it was necessary to make a selection, and those chosen possess the double advantage of being easily and correctly comparable with the ascertained population, and of being years of mean mortality. I regret I have not been able to add Paisley, in consequence of the Government Abstract of the population not including all the suburbs which are included within the Mortality Bills. This oversight, it is to be hoped, will be remedied in our next census. Of Aberdeen, as formerly remarked, the figures are not to be depended on. With these exceptions, the table may be generally relied on.

TABLE XVIII.

Showing the Population and Deaths at different Ages, and the Proportion of Deaths to the Population at these Ages in seven chief Towns of Scotland. Deaths the Average of 1840-1-2.

	TOTAL.			Under 5 Years.			Total under 15 Years.		
	Popula- tion.	Deaths.	Ratio.	Popula- tion.	Deaths.	Ratio	Popula- tion.	Deaths.	Ratio.
Edinburgh	140,241	3,520	1 in 39.8	15,327	1,183	1 in 12.9	43,907	1,457	1 in 30.1
Glasgow	282,343	8,112	1 in 34.6	35,372	3,861	1 in 9.1	93,527	4,581	1 in 20.4
Dundee	62,794	1,883	1 in 45.3	8,608	628	1 in 13.6	22,293	742	1 in 30.0
Greenock	36,936	1,055	1 in 35.0	4,994	351	1 in 14.2	12,917	428	1 in 30.1
Leith	28,159	681	1 in 41.3	3,562	214	1 in 16.6	9,779	257	1 in 38.0
Aberdeen	63,288	1,189	1 in 53.2	7,864	345	1 in 22.9	21,745	459	1 in 47.3
Perth	19,293	446	1 in 43.2	2,331	133	1 in 17.5	6,451	158	1 in 40.8

	15 to 60 Years.			Above 60 Years.		
	Population.	Deaths.	Ratio.	Population.	Deaths.	Ratio.
Edinburgh	87,500	1,343	1 in 65.1	8,834	720	1 in 12.2
Glasgow	177,241	2,493	1 in 71.0	11,575	1,048	1 in 11.0
Dundee	36,537	396	1 in 92.2	3,413	245	1 in 13.9
Greenock	22,096	437	1 in 50.3	1,884	190	1 in 9.9
Leith	16,771	248	1 in 67.6	1,582	146	1 in 10.7
Aberdeen	36,443	436	1 in 83.5	2,927	295	1 in 9.9
Perth	11,055	138	1 in 80.1	1,780	150	1 in 11.8

NOTE.—The total Deaths do not correspond with the numbers produced under the different ages, as the totals include the "Ages not ascertained."

This table then shows the not unaccountable fact, that, just in proportion to the amount of misery and destitution in a town, is the proportion of mortality to the population. Beyond all comparison, Glasgow exceeds in this respect; and it is instructive to note that, even in these years of mean mortality, the population died at the high rate of 1 annually out of every $34\frac{6}{10}$ inhabitants. Greenock, then Edinburgh, follow; then Leith, Perth, Dundee, and Aberdeen. If

these towns were arranged according to the proportion of deaths out of the population, at four periods of life, placing highest that town in which the least mortality occurred at the age specified, they would arrange themselves thus:—

Proportion of Deaths under 5 Years to Population under 5 Years.	Proportion of Deaths under 15 Years to Population under 15 Years.
Aberdeen 1 death in 22·9 living.	Aberdeen 1 death in 47·3 living.
Perth..... " 17·5 "	Perth..... " 40·8 "
Leith..... " 16·6 "	Leith..... " 38·0 "
Greenock " 14·2 "	Greenock " 30·1 "
Dundee..... " 13·6 "	Edinburgh " 30·1 "
Edinburgh " 12·9 "	Dundee " 30·0 "
Glasgow " 9·1 "	Glasgow " 20·4 "

Proportion of Deaths between 15 and 60 Years in Population at same Ages.	Proportion of Deaths above 60 Years in Population at same Ages.
Dundee 1 death in 92·2 living.	Dundee..... 1 death in 13·9 living.
Aberdeen " 83·5 "	Edinburgh " 12·2 "
Perth " 80·1 "	Perth " 11·8 "
Glasgow..... " 71·0 "	Glasgow " 11·0 "
Leith " 67·6 "	Leith " 10·7 "
Edinburgh..... " 65·1 "	Greenock " 9·9 "
Greenock " 50·3 "	Aberdeen " 9·9 "

We thus see, that, of all these towns, Glasgow is out of all proportion the most unfavourable to childhood, no fewer than 1 child out of every 20, under fifteen years of age, dying annually there; while in Edinburgh, Dundee, and Greenock, which approach nearer to it than any of the other towns, only 1 child dies annually out of every 30 living. Dundee and Edinburgh, on the other hand, take their place at the head of the list as the most favoured towns of Scotland to the aged; in them, the aged are only cut off at the rate of 1 out of every 14 in Dundee, and 1 out of every 12 in Edinburgh, annually; whereas, in Greenock and Aberdeen, 1 is cut off annually out of every 10 persons above sixty years of age.

Table XIX. shows the influence of seasons on the mortality in eight of the chief towns of Scotland, and the results furnished are curious, as demonstrating how much the mortality of the seasons is modified by situation, exposure, or shelter, and the like.

Villermé, Quetelet, and most writers on medical statistics, from confining their attention too exclusively to the statistics of the seasons in one town or country, have spoken too confidently of the influence of season on the mortality. Dr. Casper, of Berlin, appears to have been the first who studied this subject in a truly philosophical spirit, and collected and compared the statistics of the mortality as affected by season from various quarters of the globe. His valuable Essays on Medical Statistics clearly prove how difficult it is to draw any decided conclusion on the subject, seeing the influence of the seasons on the mortality in each town or country is modified by so many circumstances of which as yet we know little. The only conclusions, therefore, which he ventures to draw are, *first*, that "Spring is the most dangerous, and summer the most favourable, season to health;" and,

second, that "Extremes of temperature, whether high or low, are eminently destructive to health."

TABLE XIX.

Showing the Influence of Season on Mortality in Eight Towns of Scotland.
(The Deaths from Epidemic Cholera are excluded.)

Months.	Edinburgh, 1845-8.			Glasgow, 1837-44.			Leith, 1835-8.		
	Male.	Female.	Total.	Male.	Female.	Total.	Male.	Female.	Total.
January	935	897	1,832	3,850	2,723	7,573	158	159	317
February	839	793	1,632	3,032	3,039	6,071	121	142	263
March	854	825	1,679	3,061	2,939	6,000	136	131	267
April	776	756	1,532	2,663	2,485	5,148	110	119	229
May	815	724	1,539	2,551	2,413	4,964	124	123	247
June	758	718	1,476	2,459	2,396	4,855	114	102	216
July	791	701	1,492	2,559	2,378	4,937	116	117	233
August	724	680	1,404	2,835	2,719	5,554	107	119	226
September	765	728	1,493	2,677	2,529	5,206	160	129	289
October	843	838	1,681	2,540	2,639	5,179	146	144	290
November	927	955	1,892	2,724	2,583	5,307	152	160	312
December	1,146	1,200	2,346	2,971	2,804	5,774	183	200	383

Months.	Dundee, 1839-45.			Paisley, 1837-8-9.			Greenock, 1843 & 48.	Perth, 1837-41.	Aberdeen, 1837-41.
	Male.	Female.	Total.	Male.	Female.	Total.			
January	537	583	1,120	345	314	661	888	341	725
February	530	528	1,058	242	234	476	806	251	629
March	460	492	952	240	257	497	797	223	601
April	441	454	895	242	222	464	731	218	552
May	440	432	872	208	214	422	699	222	534
June	354	381	735	176	192	368	630	150	487
July	434	376	810	196	185	381	617	176	446
August	371	345	716	213	180	393	695	197	414
September	344	332	676	191	175	366	767	188	438
October	427	426	853	185	192	377	718	183	457
November	427	432	859	190	199	389	723	200	494
December	481	529	1,010	297	265	562	892	210	593

The above table, exhibiting the mortality in eight towns during the several months of the year, and extending over periods of observation varying from three to eight years, clearly demonstrates that other agencies besides mere weather are at work, forwarding, retarding, or rendering irregular, the influence of season on the mortality. Thus, in both Edinburgh and Leith, December is out of all proportion the month during which the greatest mortality occurs; and in Edinburgh, instead of January following as the next most fatal month, it is November. Leith so far agrees with Edinburgh, that the mortality of January and November is nearly equal. In Glasgow, however, in Dundee, in Perth, and in Aberdeen, December is neither the most fatal nor even the second most fatal month. Nay, in the case of Glasgow and Aberdeen, the months of January, February, and March, exhibit a much higher amount of mortality than December; while in Perth, no fewer than the first five months of the year exceed in their mortality that of December.

The same difference is observed with regard to the month of least mortality in those eight towns. Thus, in Edinburgh and Aberdeen, August is the month of least mortality; in Leith, Glasgow, and Perth, June is the month of least mortality; in Paisley and Dundee, September is the month of least mortality; while in Greenock, it is the month of July.

Much of this difference of the effect of season on the mortality is probably due to difference in exposure or situation. Edinburgh, Leith, and Glasgow, and probably most other towns of Scotland, agree in this, that the months of greatest cold are January, February, and March. But the biting east and north-east winds which blow over Edinburgh and Leith with unmitigated severity during the months of November and December, raise the mortality of these months above those months whose actual thermometric cold is greater. When acting as honorary registrar of the mortality of Edinburgh and Leith, I had frequent occasion to notice the close connexion between the prevalence of these winds and the increase of mortality, and the influence of mild weather in again causing the mortality to sink. For additional facts on this subject, I beg to refer to the Quarterly and Annual Reports on the Mortality of Edinburgh and Leith, published in the "Edinburgh Medical and Surgical Journal," in 1846-7-8-9.

The next series of tables has for object the showing the principal diseases which prove fatal in the different towns of Scotland. The mortality tables for Edinburgh and Leith were drawn up on the plan of the English tables, adopting the same classification of diseases. Instead of reducing them, therefore, to the rude form of table used in the other towns, it has been considered better to give them separately, as they serve to give a much clearer idea of the diseases which prove fatal. Table XX. exhibits the classification of diseases, and the number of deaths under each class, during the years 1846-7-8, in Edinburgh and Leith; and Table XXI. gives the particular diseases, and number of deaths from each, also during these years.

TABLE XX.

Showing the Number of Deaths under the Different Classes of Disease in Edinburgh and Leith during the Years 1846-7-8.

CLASSES OF DISEASE.	Edinburgh.			Leith.		
	1846.	1847.	1848.	1846.	1847.	1848.
I. Epidemic, Endemic, and Contagious Diseases	1,141	2,679	2,468	198	285	568
II. Diseases of uncertain or variable seat	406	428	417	76	64	69
III. Diseases of Brain and Nervous System	482	516	382	75	84	73
IV. Diseases of Respiratory Organs	1,048	1,385	821	152	212	162
V. Diseases of Heart and Organs of Circulation	100	114	85	27	14	14
VI. Diseases of Stomach, Liver, and Organs of Digestion	493	598	562	76	106	117
VII. Diseases of Kidneys and Urinary Organs.....	21	39	22	3	2	3
VIII. Child-birth and Diseases of Organs of Generation...	61	87	76	15	16	14
IX. Rheumatism and Diseases of Joints, Bones, &c. ...	35	27	23	2	7	5
X. Diseases of Integumentary System	3	8	4	1	2	2
XI. Old Age	540	617	367	90	115	100
XII. Intemperance, Violent Deaths, Suicides, &c.	136	141	121	29	34	39
XIII. Causes not specified	128	67	127	57	14	46
Total deaths.....	4,594	6,706	5,475	801	955	1,212
Still-born	279	320	293	64	76	69

TABLE XXI.

Showing the Mortality of the Fatal Diseases in Edinburgh and Leith during the Years 1846-7-8.

DISEASES.	Edinburgh.			Leith.		
	1846.	1847.	1848.	1846.	1847.	1848.
I. Small Pox	34	163	96	2	64	5
Measles	183	217	55	32	16	9
Scarlet Fever	12	20	530	....	3	159
Hooping Cough	251	279	94	37	42	22
Croup	59	89	51	10	13	18
Diarrhoea	171	118	75	30	9	11
Dysentery.....	18	32	16	1	1	5
Cholera.....	47	11	478	12	0	185
Influenza	5	125	43	1	15	8
Typhus Fever	212	1,517	965	57	108	127
Erysipelas	47	59	43	8	11	12
Other Zymotics	52	49	22	8	3	7
II. Dropsy	133	154	142	25	26	14
Cancer	31	26	18	9	7	9
Debility	182	178	150	21	13	23
Sudden Death	14	15	17	6	11	9
Other odd Diseases	46	49	90	15	7	14
III. Cephalitis.....	22	29	26	7	7	3
Hydrocephal	190	165	113	28	29	31
Apoplexy	81	84	62	9	13	10
Paralysis	89	101	93	16	11	16
Epilepsy	12	12	13	3	1	1
Convulsions	19	39	24	3	8	3
Insanity	16	36	27	1	11	5
Delirium Tremens	23	24	3	2	2	....
Other Brain Diseases	30	26	31	6	2	4
IV. Bronchitis	39	113	16	12	27	6
Pneumonia	233	246	126	30	71	24
Asthma.....	73	118	66	6	14	10
Consumption	639	799	533	89	93	113
Pleurisy	13	21	10	2	1	4
Other Lung Diseases	51	88	70	13	6	5
V. Heart Diseases.....	100	114	85	27	14	14
VI. Teething	135	118	112	25	18	21
Inflammation of Bowels	121	206	246	11	38	56
Tabes Mesenterica	142	161	129	22	34	29
Liver Disease	53	54	40	6	7	4
Other Bowel Diseases	43	59	35	12	9	7
VII. Kidney and Urinary	21	39	22	3	2	3
VIII. Child-birth	42	74	63	13	13	10
Generative Organ Diseases	19	13	13	2	3	4
IX. Rheumatism.....	14	11	5	....	5	1
Joint and Spine Diseases.....	21	16	18	2	2	4
X. Ulcers, Skin.....	3	8	4	1	2	2
XI. Old Age	540	617	367	90	115	100
XII. Intemperance	7	9	2	1	....	1
Privation	4	3	....	....	....	....
Violence, Suicide.....	125	129	119	28	34	38
Not specified	128	67	127	57	14	46
Total.....	4,594	6,706	5,475	801	955	1,212

From these it will be seen, that the whole class of epidemic diseases fluctuates considerably; indeed, a proper average of this class of diseases could only be obtained by taking a long average of years. One fact, however, may be noted with regard to them, and that is, that with certain diseases, one epidemic disease usurps the place of another, and so destroys it, that during its prevalence, that other seems almost quite extinguished. This is notably the case with scarlet fever. When it prevails as an epidemic, measles and hooping cough, the usual fatal diseases of children, are in more or less complete abeyance, but immediately resume their prevalence and fatality on the disappearance of the epidemic scarlatina.

We are still too little acquainted with the causes which give rise to epidemics to be able to trace them to their causes. Each epidemic disease appears to be governed by laws of its own, which seem to be diverse from that which regulates others. The year in which one epidemic rages is in some cases found to correspond to that in which another also is prevalent, so that two epidemics are ravaging the population at the same period of time. In other years, however, the one epidemic is observed without the other, or the one seems even to take the place of the other; and all our inquiries have as yet failed to trace this coincidence or succession to any probable cause.

Some years, however, appear to be peculiarly favourable to the spread of epidemic influence, as, for instance, was 1847, in many, but not in all, the towns of Scotland. During that year, measles, small-pox, hooping cough, typhus fever, and influenza, prevailed simultaneously in Edinburgh and Glasgow, to a greater extent than they had been observed to do for many previous seasons. But in many of the other towns of Scotland no such connection was traced; and even in Leith, closely adjoining, as it is, to Edinburgh, measles that year was below the average in frequency and fatality.

Table XXII. gives a general view of the diseases which proved fatal in six of the chief towns of Scotland during a series of years, all the years mentioned being included, and the numbers in the table indicating the total deaths from these diseases during the years named. To render this table more easily comparable with Table XXI., Table XXIII. has been added, which gives the proportions per 1,000 deaths in which certain diseases proved fatal in the different towns. In drawing up this table, the "unascertained" deaths were necessarily omitted. The proportions are given for Aberdeen, though evidently too incorrect to allow of any confidence being placed in them.

From this table, we see that the manufacturing town of Paisley furnishes the largest proportion of deaths from consumption, no fewer than 208 out of every 1,000 deaths from all diseases falling victims to that fell disease. Next follows Glasgow, also a manufacturing town; then Greenock; then Dundee, also the seat of manufactures; then Perth; and lastly Edinburgh and Leith. In this last town, the proportional deaths from consumption was so low as 103 deaths only out of every 1,000 deaths from all diseases.

The high mortality from consumption in the manufacturing towns can be easily accounted for. The confinement of masses of people to the confined atmosphere of manufactories, and the breathing air which is constantly more or less filled with particles of dust, have been long

known to induce that disease. The very low mortality from that disease in Edinburgh and Leith is more difficult to explain, the proportion being not only much lower than in any other of the towns of Scotland, but also below that of most towns of England. Exposed as Edinburgh and Leith are, from their situations, to the full force of the biting easterly and northerly winds, it might *a priori* be expected that lung affections, and more especially consumption, would be more than usually prevalent. Such, however, is not the case; for, if we even allow for the increased general mortality in 1847 from fever, and in 1848 from cholera, the proportionate mortality from consumption would be below that of almost all towns in Scotland or England.

TABLE XXII.

Showing the Number of Deaths from certain Diseases in Six Towns of Scotland during certain Years, (all inclusive).

DISEASES.	Glasgow, 1838-44.	Dundee, 1839-45.	Paisley, 1845-48.	Greenock, 1843-48.	Aberdeen, 1837-41.	Perth, 1838-41.
Accidents and Suicides	1,385	249	77	50	72	55
Aged	4,898	894	958	186	404	410
Asthma	1,203	331	85	38	68	92
Bowel Complaints	6,648	1,000	851	231	114	134
Catarrh	943	?	?	15	32	62
Child-birth	621	87	75	18	17	9
Croup	1,211	208	87	39	15	47
Consumption	9,412	1,236	1,208	306	259	263
Dropsy.....	1,881	404	203	63	71	74
Typhus Fever	6,221	1,082	707	462	307	176
Brain Diseases.....	3,373	681	198	154	139	171
Heart Diseases	407	129	33	31	11	16
Hooping Cough	2,859	418	221	40	38	76
Inflammation	3,465	462	251	74	152	101
Measles	3,373	583	175	16	51	78
Nervous Diseases.....	449	135	20	2	85	81
Scarlet Fever	2,217	301	113	74	67	59
Small-Pox	2,138	354	119	41	57	49
Miscellaneous	2,296	926	382	259	195	90
Total ascertained.....	55,000	9,480	5,763	2,099	4,157	2,043
Not ascertained	1,349	318	400	104	4,213	57
Total.....	56,349	9,798	6,163	2,203	8,370	2,100

TABLE XXIII.

Showing the Proportional Mortality of a few of the Principal Fatal Diseases in 1,000 Deaths from all Causes.

	Edin- burgh.	Leith.	Glasgow.	Dundee.	Paisley.	Gree- nock.	Aber- deen.	Perth.
Consumption	119	103	171	130	208	143	62	128
Typhus Fever	163	102	113	114	122	220	73	86
Scarlet Fever	34	56	43	31	19	35	16	29
Measles.....	27	19	61	61	30	8	12	38
Hooping Cough	37	35	52	44	38	19	9	37
Small Pox.....	17	24	38	37	20	20	18	24
Croup	12	14	22	22	15	19	3	22
Brain Diseases.....	83	81	61	71	34	73	33	83
Heart Diseases	18	19	7	12	6	14	2	8

The probable reason, therefore, for this immunity, must be looked for in the circumstance that the keen air and constant breezes, which both towns enjoy in perfection, brace and strengthen the respiratory organs, and render them less liable to become the seat of those morbid deposits on which consumption depends.

Relative to the comparative frequency in the different towns of epidemic diseases, viz., typhus fever, scarlet fever, measles, small-pox, and hooping cough, little need be said, seeing the number of years under observation are too few to admit of any fair average being obtained. Besides, the calculations for Edinburgh, Leith, Greenock, and Paisley, were made from epidemic years, while those of Glasgow, Perth, Dundee, and Aberdeen, were made from years of mean mortality.

Relative to the other diseases, some rather interesting results are arrived at. Thus, croup seems to be most prevalent in the low-lying and sheltered towns, such as Glasgow, Dundee, Perth, and Greenock. Brain disease, on the other hand, appears out of all proportion numerous in Edinburgh, Perth, and Leith, and at a minimum in Paisley and Aberdeen; and heart disease seems so far to follow the same apparent influences as brain disease, inasmuch as it also is more prevalent in Edinburgh and Leith than in any of the other towns in the above table. Much reliance cannot, however, be placed on these proportions, as the registration of the causes of death is carried on in Scotland in too unsatisfactory a manner to admit of anything more than an approximation to the truth being attained.

In conclusion, permit me to remark, that I hope the facts now brought forward relative to the Vital Statistics of Scotland will have the effect of inducing those in authority to do something in the way of enabling us, with more accuracy, to ascertain the actual condition of our population. The approaching census, if taken as it ought to be, should give us the numbers of the insane in lunatic asylums and private madhouses; of the fatuous or idiots in workhouses, or boarded with their friends, or at large in the general population; of the blind; of the deaf and dumb; and, lastly, the number of married persons with issue, and of married persons who have had no issue.

Scotland also requires an uniform system of registration of births, deaths, and marriages; and if Government cannot carry a measure which shall prove satisfactory to all parties, what hinders it to pass a short Act, rendering it imperative on the clergy of the Established Church, which asserts the right of keeping such registers at present, to furnish annually to the Secretary of State, to the Lord Advocate, or to any authorised person, a complete list of all the marriages in their respective parishes, and of all the burials in the various cemeteries within each parish? If Government does not succeed in carrying out a new and uniform system of registration, it appears to me it is bound to enforce the proper keeping of the present parochial registers, and I can see no difficulty in the way, in so far as the marriages and burials are concerned. A similar return from the present registry of births would answer no end, inasmuch as not a third of the births over the country is registered; but were Government once seriously to contemplate such a beneficial measure for Scotland, means might easily be suggested by which this deficiency might be supplied.

