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# REPORT

ON THE

# MORTALITY

OF

# EDINBURGH AND LEITH,

FOR THE MONTHS OF

MARCH, APRIL, AND MAY 1846.

BY

JAMES STARK, M. D.

FELLOW OF THE ROYAL COLLEGE OF PHYSICIANS OF EDINBURGH.

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*Wm. B. Ewing (handwritten)*

REPORT

MORTALITY



BY W. B. EWING

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TABLE I.

Month	Thermometer.			Barometer.		
	High- est.	Low- est.	Mean.	High- est.	Low- est.	Mean.
Jan.	30.18	28.23	29.09	30.45	29.66	29.99
Feb.	30.04	28.66	29.43	30.48	29.48	29.98
March	30.30	28.58	29.30	30.54	29.84	29.90
April	30.00	28.10	29.20	30.28	29.28	29.78
May	29.98	28.12	29.00	30.28	29.28	29.78

Month	Total	Spill- born.	Grand total.
Jan.	109	27	136
Feb.	112	27	139
March	101	33	134
April	108	37	145

## REPORT, &c.

SINCE the beginning of this year the mortality in Edinburgh has been unusually high. What makes this the more remarkable is the fact that last year the mortality was lower than for three previous years; and that this year there is no fatal epidemic prevalent among us to account for the increasing number of deaths. The average monthly mortality for the last six years amounted to 355; whereas the average monthly mortality of the five past months of this year amounts to 393—showing a mean increase of 37 deaths per month.

The Registrar-General's Reports put it in our power to compare the mortality here with that of London and of England since the beginning of the present year. From these we learn that London, unlike Edinburgh, has been unusually healthy this season; in fact, healthier than it has been for a period of eight years at least. It is a very curious circumstance, however, that though the same has been more or less the case with the southern and middle districts of England, the northern division has not been so highly favoured, and has more nearly resembled Edinburgh in exhibiting an increased mortality.

The low rate of mortality in London is with great justice ascribed by the Registrar-General to "the extraordinary mildness of the winter of 1846;" and the striking fact is stated that, excepting two weeks, the mean temperature since January has always been above 40°. As a natural consequence of this the range of temperature has been small. In Edinburgh, on the other hand, the winter, though open and mild, and the mean monthly temperature never below 42°, exhibited many sudden alternations of temperature, which are always noticed to be prejudicial to health. Thus, for instance, in London during March the range of the thermometer was 27° only, and in April the same; while in Edinburgh during March the range of temperature was 46°, and in April 39°. No wonder, therefore, that our mortality should be high, because, other things being equal, it is these sudden alternations of heat and cold which render one country or situation more unhealthy than another.

With the view of directing the attention more particularly to the connection of mortality with atmospheric agencies, but especially with temperature, the following table is drawn up—the mortality being limited to Edinburgh alone.

## Report on the Mortality of

TABLE I.

Month.	Barometer.					Temperature.			
	High-est.	Low-est.	Mean.	Range.	Rain.	High-est.	Low-est.	Mean.	Range
Jan.	30·18	28·52	29·09	1·66	2·64	59°	25°	42·47	34°
Feb.	30·04	28·56	29·43	1·48	1·60	64	28	42·31	36
March,	30·20	28·56	29·30	1·64	0·97	63	17	42·15	46
April,	30·00	28·70	29·59	1·30	2·88	64	25	44·22	39
May.	29·98	28·72	29·60	1·26	1·21	70	31	53·00	39

Month.	Mortality.					
	15 and under.	15 to 60.	Above 60.	Total deaths.	Still-born.	Grand total.
Jan	167	136+6	73	382	27	409
Feb.	137	112+7	71	327	27	354
March,	164	158+6	73	401	33	434
April,	155	138+2	82	377	16	393
May,	158	136+2	61	356	21	377

*Note.*—Canaan Cottage, where the meteorological registers are kept, is situated about a mile to the south of Edinburgh, in latitude 55° 57', and is 246 feet above the mean level of the sea.

The following tables exhibit an abstract of the mortality in Edinburgh and Leith for the months of March, April, and May, classified according to ages and diseases. It may be remarked that the numbers given include as nearly as possible the absolute amount of deaths in each place respectively; as in addition to the returns from the burying-grounds, and the medical certificates, the principal undertakers have kindly furnished me with the particulars of those cases where the bodies were removed for interment beyond the bounds of Edinburgh. All those cases brought from the country to the Royal Infirmary are excluded—the tables being limited to the residents in Edinburgh and Leith. It is to be regretted that the classified table of diseases for Leith should be so very imperfect for the months of March and April. This resulted from the imperfections of the plan of registration adopted at South Leith, but it is to be hoped that this will not again occur, and that nothing in future will prevent the diseases there being returned as completely as for Edinburgh.

TABLE II.

## EDINBURGH TABLE OF AGES.

Age.	March.			April.			May.		
	M.	F.	Tot.	M.	F.	Tot.	M.	F.	Tot.
Still-born,	23	10	33	11	5	16	17	4	21
1 year and under	45	30	75	43	35	78	42	34	76
2 years,	18	19	37	17	24	41	16	17	33
5,	18	13	31	11	7	18	16	11	27
10,	7	7	14	6	5	11	9	8	17
15,	4	3	7	4	3	7	2	3	5
20,	7	4	11	9	4	13	13	9	22

Ages.	March.			April.			May.		
	M.	F.	Tot.	M.	F.	Tot.	M.	F.	Tot.
30 years,	21	15	36	11	17	28	11	23	34
40,	16	18	34	13	11	24	14	7	21
50,	27	19	46	23	20	43	14	14	28
60,	16	15	31	12	18	30	17	14	31
70,	12	22	34	16	18	34	13	8	21
80,	9	16	25	15	16	31	11	17	28
90,	4	6	10	4	10	14	1	11	12
100,	0	4	4	1	2	3	0	0	0
Not stated,	2	4	6	1	1	2	1	1	2
Total,	229	205	434	197	196	393	197	181	378

TABLE III.  
EDINBURGH TABLE OF DISEASES.

Class.	Diseases.	March.	April.	May.	Class.	Diseases.	March.	April.	May.
I.	Small-pox, (vaccinated,)	0	1	1		Consumption,	64	57	67
	do. not vaccinat.	1	2	5		Lung disease,	3	1	0
	Measles,	28	22	20	V.	Pericarditis,	1	0	0
	Scarlatina,	0	1	2		Heart disease,	6	7	5
	Whooping cough,	13	17	18	VI.	Teething,	6	9	6
	Croup,	8	8	3		Enteritis,	7	9	6
	Thrush,	10	4	6		Peritonitis,	3	3	1
	Diarrhœa,	2	3	5		Tabes mesenter.	11	7	12
	Dysentery,	1	0	0		Ulcer. of stomach			
	Influenza,	1	0	0		or intestines,	1	0	2
	Remittent fever,	2	2	2		Hernia,	2	0	0
	Typhus fever,	21	16	11		Colic or ileus,	0	1	1
	Erysipelas,	6	5	7		Hæmatemesis,	1	0	0
	Syphilis,	1	0	1		Stomach disease,	2	0	1
II.	Hæmorrhage	0	1	3		Jaundice,	1	1	1
	Dropsy,	11	11	12		Liver disease,	3	2	2
	Abscess,	1	0	0	VII.	Ischuria,	0	0	1
	Mortification,	0	1	1		Diabetes,	1	1	0
	Scrofula,	0	1	0		Stone,	1	1	0
	Cancer,	3	3	1		Kidney disease,	2	1	2
	Debility,	16	17	15	VIII.	Child-birth,	1	3	2
	Sudden death,	2	2	0		Puerperal fever,	2	0	3
III.	Cephalitis,	4	0	2		Paramenia,	2	0	0
	Hydrocephalus,	22	14	19		Disease of uterus,	1	0	1
	Apoplexy,	9	5	9	IX.	Rheumatism,	2	0	2
	Paralysis,	9	10	7		Spine and joint			
	Convulsions,	1	5	0		disease,	3	3	4
	Epilepsy,	0	1	1	X.	Skin disease,	0	0	1
	Insanity,	1	1	1		Fistula,	0	1	0
	Delirium tremens,	2	4	0	XI.	Old age,	36	45	36
	Disease of Brain,	2	4	0	XII.	Intemperance	0	2	0
IV.	Laryngitis,	0	1	0		Privation,	1	0	0
	Quinsey,	2	0	0		Violent deaths and			
	Bronchitis,	2	3	1		suicides,	11	13	15
	Pneumonia,	18	21	20	XIII.	Still-born,	33	16	21
	Hydrothorax,	1	5	3		Causes not specified,	18	13	7
	Asthma,	10	6	3		Total,	434	393	378

TABLE IV.

## LEITH TABLE OF AGES.

Ages.	March.			April.			May.		
	M.	F.	Tot.	M.	F.	Tot.	M.	F.	Tot.
Still-born,	4	1	5	3	0	3	2	5	7
1 year & under	7	4	11	3	3	6	11	4	15
2,	2	1	3	2	3	5	4	2	6
5,	0	1	1	2	1	3	3	2	5
10,	0	1	1	1	0	1	0	0	0
15,	1	1	2	0	0	0	0	0	0
20,	3	0	3	0	1	1	2	0	2
30,	4	1	5	3	3	6	3	2	5
40,	4	2	6	2	2	4	6	5	11
50,	2	4	6	4	1	5	2	2	4
60,	2	1	3	3	0	3	2	5	7
70,	4	3	7	2	2	4	2	3	5
80,	3	4	7	4	2	6	0	5	5
90,	0	0	0	2	0	2	0	0	0
Total,	36	24	60	31	18	49	37	35	72

TABLE V.

## LEITH CLASSIFIED TABLE OF DISEASES.

Class.	Diseases.	March.	April.	May.	Class.	Diseases.	March.	April.	May.
I.	Measles,	0	0	3	IV.	Laryngitis,	0	1	1
	Hooping cough,	2	2	6		Bronchitis,	0	0	1
	Croup,	0	2	0		Pneumonia,	1	0	4
	Thrush,	0	0	1		Asthma,	0	0	2
	Influenza,	0	0	1		Hydrothorax	1	1	0
	Typhus fever,	1	1	2		Consumption,	4	4	8
	Erysipelas,	0	1	1	V.	Heart disease,	0	3	3
II.	Dropsy,	0	1	2	VI.	Dis. of diges. org.	2	6	7
	Debility,	3	0	1	VII.	Stone,	1	0	0
	Other diseases of uncertain seat,	0	0	4	VIII.	Child-birth,	1	0	1
III.	Cephalitis, (mi- ningitis,)	0	1	2		Puerperal fever,	0	0	1
	Hydrocephalus,	0	1	2	XI.	Old age,	6	7	5
	Paralysis,	0	3	2	XII.	Violent deaths,	0	1	2
	Convulsions,	0	0	1	XIII.	Still-born,	5	3	7
	Epilepsy,	0	0	1		Not specified,	31	10	0
	Disease of brain,	0	1	1		Total,	60	49	72

From the above classified table of diseases it will be seen, that, with the exception of the usual children's diseases, measles and hooping-cough, there is no epidemic disease among us to account for the increased mortality of the present year. Typhus fever, which in the earlier months attacked persons of all classes, but was not by any means very prevalent, has during the last month materially declined, and the fatal cases have been confined to the lower and middle classes. Erysipelas alone has been somewhat more prevalent.

Small-pox, from which Edinburgh has been unusually free this year, has during the last month made its appearance in several localities, and proved fatal in six instances. As usual, it has chiefly attacked those who were not vaccinated.

Only one of the fatal cases during March was reported to be vaccinated, but on making particular inquiry I have not been able to get satisfactory proof that such was the case. The fatal vaccinated case in April was twice successfully vaccinated, yet took unmodified small-pox and died under it. Even though such a person had taken small-pox itself and recovered, he would, in all likelihood, have been as liable as ever to a second attack. Two such instances I have witnessed in my own practice, in which children, after successful vaccination, took unmodified small-pox on being exposed to its contagion; and after the lapse of about a year were again successfully vaccinated, yet were seized with unmodified small-pox a second time, from being taken to a house in which lay a small-pox patient. My own conviction is, that these persons remain as liable to a third attack as if they had never been vaccinated, or had never taken small-pox.

The fourth class of diseases, those of the respiratory organs, are those which over Europe cut off the greatest proportional number of persons, very nearly an exact third of the mortality belonging to that class. As might be expected, these diseases are somewhat less prevalent in one locality than in another; but it does not seem to follow, that the less the mortality is in proportion to the population, the less should be the proportion of deaths from diseases of the respiratory organs. London and Edinburgh are very good examples of the general truth of this remark. In London during the past months of this year, the mortality has amounted to only 1 in 103 living. In Edinburgh during the same period, the mortality, (excluding the still-births,) has been 1 in 76, or between a fourth and a fifth higher than in London for the same period. In London, however, the deaths from diseases of the respiratory organs, including hooping-cough and croup, were in the proportion of 376 to every 1000 deaths; whereas in Edinburgh, the same diseases were to the 1000 deaths in the low proportion of 292, showing a difference in favour of the superior salubrity of Edinburgh to the extent of 84 out of the 1000 deaths, and this too in a year when the mortality is above the average.

The safest way, however, to estimate the proportional mortality of diseases is to compare their proportion both with the population and with the total deaths. Estimated in this way, London has lost from diseases of the respiratory organs, including hooping-cough and croup, 1 in every 273 of its present population, or, as above stated, in the proportion of 376 out of every 1000 deaths. Edinburgh, during the same period, has lost 1 in every 260 of its present population from these diseases, or in the proportion of 292 out of the 1000 deaths. If the deaths from consumption alone be estimated in the same way, it is found that in London 1 has died out of every 733 living, or in the proportion of 140 out of the 1000 deaths, whereas Edinburgh has lost from the same cause 1 out of every 501 living, or in the proportion of 150 out of every 1000 deaths.

In my first report I was led into an error as to the still-births being registered in England, in consequence of the Statistical Nosology, stating that premature births were registered under the head of debility, and in consequence of an explanatory note being appended, which quoted a passage from Dr Granville's work referring exclusively to still-births. I am, however, informed by the Registrar-General, that still-births are not registered in the English tables of mortality. This appears to me to be an important oversight, because in questions affecting the condition and health of the inhabitants, many important conclusions may be drawn from an accurate statement of the particulars connected with still-births. M. Lugol, in his *Researches on Scrofula*, attributes the mortality of the *fœtus in utero* to the existence of the scrofulous constitution in one or both parents, and unless means are used to register such facts both in town and country, no data can be procured for the confirmation or refutation of such statements.



Only one of the fatal cases during March was reported to be vaccinated, but on making particular inquiry I have not been able to get satisfactory proof that such was the case. The fatal vaccinated case in April was twice successfully vaccinated, yet took unmodified small-pox and died under it. Even though such a person had taken small-pox itself and recovered, he would, in all likelihood, have been as liable as ever to a second attack. Two such instances I have witnessed in my own practice, in which children, after successful vaccination, took unmodified small-pox on being exposed to its contagion; and after the lapse of about a year were again successfully vaccinated, yet were seized with unmodified small-pox a second time, from being taken to a house in which lay a small-pox patient. My own conviction is, that these persons remain as liable to a third attack as if they had never been vaccinated, or had never taken small-pox. The fourth class of diseases, those of the respiratory organs, are those which over Europe cut off the greatest proportional number of persons, very nearly an exact third of the mortality belonging to that class. As might be expected, these diseases are somewhat less prevalent in one locality than in another; but it does not seem to follow, that the less the mortality is in proportion to the population, the less should be the proportion of deaths from diseases of the respiratory organs. London and Edinburgh are very good examples of the general truth of this remark. In London during the past months of this year, the mortality has amounted to only 1 in 103 living. In Edinburgh during the same period, the mortality (excluding the still-births) has been 1 in 78, or between a fourth and a fifth higher than in London for the same period. In London, however, the deaths from diseases of the respiratory organs, including hooping-cough and croup, were in the proportion of 276 to every 1000 deaths; whereas in Edinburgh, the same diseases were to the 1000 deaths in the low proportion of 992, showing a difference in favour of the superior salubrity of Edinburgh to the extent of 84 out of the 1000 deaths, and this too in a year when the mortality is above the average.

The safest way, however, to estimate the proportional mortality of diseases is to compare their proportion both with the population and with the total deaths. Estimated in this way, London has lost from diseases of the respiratory organs, including hooping-cough and croup, 1 in every 276 of its present population, or as above stated, in the proportion of 276 out of every 1000 deaths. Edinburgh, during the same period, has lost 1 in every 280 of its present population from these diseases, or in the proportion of 292 out of the 1000 deaths. If the deaths from consumption alone be estimated in the same way, it is found that in London 1 has died out of every 733 living, or in the proportion of 140 out of the 1000 deaths, whereas Edinburgh has lost from the same cause 1 out of every 521 living, or in the proportion of 150 out of every 1000 deaths.

In my first report I was led into an error as to the still-births being registered in England, in consequence of the Statistical Society, stating that premature births were registered under the head of debility, and in consequence of an explanatory note being appended, which quoted a passage from Dr Granville's work relating exclusively to still-births. I am, however, informed by the Registrar-General, that still-births are not registered in the English tables of mortality. This appears to me to be an important oversight, because in questions affecting the condition and health of the inhabitants, many important conclusions may be drawn from an accurate statement of the particulars connected with still-births. M. Jugol, in his *Recherches on Scrofula*, attributes the mortality of the fetus in utero to the existence of the scrofulous constitution in one or both parents, and unless means are used to register such facts both in town and country, no data can be procured for the construction or refutation of such statements.