

Some calculations of the number of accidents or deaths which happen in consequence of parturition : and of the proportions of male to female children, as well as of twins, monstrous productions, and children that are dead-born : taken from the Midwifery Reports of the Westminster General Dispensary : with an attempt to ascertain the chance of life at different periods, from infancy to twenty-six years of age, and likewise the proportion of natives to the rest of the inhabitants of London : in a letter to Samuel Foart Simmons, M.D. F.R.S. / by Robert Bland.

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Bland, R. 1730-1816.
Royal College of Surgeons of England

Publication/Creation

London : Printed by J. Nichols, 1781.

Persistent URL

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10.
S O M E

C A L C U L A T I O N S

O F T H E

Number of Accidents or Deaths which happen in
consequence of Parturition ;

A N D O F T H E

Proportions of Male to Female Children, as well as of Twins,
Monstrous Productions, and Children that are dead-born.

T A K E N F R O M T H E

Midwifery Reports of the Westminster General Dispensary.

W I T H

An Attempt to ascertain the Chance of Life at different Periods, from
Infancy to Twenty-six Years of Age ; and likewise the Proportion
of Natives to the rest of the Inhabitants of London.

In a L E T T E R to

SAMUEL FOART SIMMONS, M. D. F. R. S.

By ROBERT BLAND, M. D.

Physician-Man-Midwife to the Westminster General Dispensary.

Read at the ROYAL SOCIETY, May 10, 1781,
and published in the PHILOSOPHICAL TRANSACTIONS, vol. LXXI.

L O N D O N :

Printed by J. N I C H O L S. MDCCLXXXI.

ERRATA.

Page 11. line 15. *for* after a labour delivered, *read* first delivered

Ibid. 21. *for* eight inches, *read* five inches.

14. line ult. *for* 362, *read* 10.

SOME

CALCULATIONS, &c.

DEAR SIR,

THE great advantage of hospitals and other similar institutions, in improving and diffeminating medical knowledge, is generally acknowledged; but there are other purposes they seem equally calculated to answer, which, though subordinate to the former, may yet deserve attention, as they may throw light upon, and perhaps finally determine, certain political questions, about which various opinions are at present entertained. Thus, though it is known that this city contains persons from various countries, and that a very small portion of its inhabitants are natives; yet the proportion which the latter bear to the aliens can at present only be guessed at.

A

But

But this question might be resolved, with a tolerable degree of accuracy, if to the register of the names of the persons admitted to the several charities were added the places of their birth. Again, the great mortality of the human species, particularly in infancy, and the small chance a child has to attain to years of maturity, have been calculated from parish-registers, bills of mortality, &c. But I do not know, that an attempt has hitherto been made to ascertain them, by noting the number of children a promiscuous multitude of women had borne, together with the number they had been able to preserve.

This, however, is what I have here done; and from it I have attempted to form a table, shewing the chance of life at different periods. I am far from pretending that by this mode clear and certain intelligence will be obtained; but in a matter of such moment, I presume, that any assistance will be acceptable. Dr. SMELLIE * has cursorily mentioned, for the encouragement of his pupils, the small proportion of the unnatural and laborious births to the natural; but he did not carry his views farther, or point out the proportionate number of consequent accidents, which might occur to retard or prevent the recovery of the woman, although this is not less necessary to be known than the former. With a view to these, and other useful purposes, the following register has been kept of the most material circumstances concerning the patients admitted to the midwifery-department of the Westminster General Dispensary, from its first institution, in the year 1774, to the present time; viz.

1. The ages of the several women.
2. The number of children they had borne.
3. The sexes of the children,

* See SMELLIE's *Midwifry*, 8vo, p. 195.

4. The number of children they had been able to preserve.

5. The place or country where they and their husbands were born.

And after the delivery of the patient I have constantly noted,

1. The accidents that attended, or were the consequences of parturition.

2. The sexes of the children delivered.

3. The number of twins or triplets.

4. The number of the children that were deficient or monstrous.

5. The number of the children that were dead-born: and, as the women were enjoined to return their letters as soon as they were able to go abroad, I farther intended to have added the proportion of the children who died under four or five weeks; but many of the women neglecting this duty, prevented my information under this head from being so compleat as I could have wished. Of those, however, who came, or of whom certain account could be obtained, the number is set down.

From the above mentioned register the following tables and accounts have been composed; and as the greatest care and exactness were used in recording the several circumstances, the same punctuality has been observed in collecting and digesting them. And that they might be kept as free from error as possible, tables for each year were first composed and compared together; but finding no material variation, I did not think it necessary to produce them in that form. My first intention was to have given the tables simply, and without any explanatory observations; but finding I could not introduce all the circumstances I had noted in my register, as was particularly the case with regard to the first table, and imagining that

in some places they were not perfectly intelligible, without some explanation, as for instance in the table of the chance of life at different periods, I have ventured to add such occasional remarks as I think will tend to illustrate the subject.

As my first view was to find the proportion of difficult labours, and of the accidents or deaths that happen in consequence of child-birth, I shall begin with the following TABLE.

Of 1897 women delivered under the care of the Dispensary,
 63 or 1 in 30 had unnatural labours: in
 18 of these, or 1 in 105, the children presented by
 their feet; in
 36 or 1 in 52, the breech presented; in
 8 the arms presented; and in } 9*, or 1 in 210.
 1 the funis.

 63

17 women, or 1 in 111, had laborious labours: in
 †8 of these, or 1 in 236, the heads of the children were
 lessened; in
 4 a single blade of a forceps was used; and in the
 remaining
 5 in which the faces of the children were turned to the
 pubes, the delivery was at length accomplished by
 the pains.

 80

 17

80

* In all these nine cases the children were turned.

† Two of these women have since been delivered of full-sized healthy children.

A third bore a very small and weakly child, who died in two or three days. A
 fourth

80

1 woman had convulsions about the seventh month of her pregnancy, and was delivered a month after of a dead child, and recovered.

1 woman had convulsions during labour; brought forth a live child, and recovered.

*9 women, or 1 in 210, had uterine hæmorrhage before and during labour.

Of these 1 died undelivered;

1 died a few hours, and

1 ten days, after delivery, and

6 recovered.

—

9

—

5 women had the puerperal fever, of whom four died. In one of these the placenta was undelivered, and continued so to her death.

2 women were seized with mania, but recovered in about three months. In

1 woman a suppuration took place, soon after labour, from the vagina into the bladder and rectum. This patient recovered, but the urine and stools continue to pass through the wounds. Of

99

fourth was delivered of a seven-months child, without mutilating it, which died in its passage. The number of women, therefore, who from error in their conformation were incapable of bearing live children appears to be very inconsiderable. Of the remaining four I have not been able to get any intelligence.

* In these nine cases only one child was saved.

99

1 woman the perinæum was lacerated to the sphincter ani. A future was attempted, but without effect; she recovered, but is troubled with prolapsus uteri.

5 had large and painful swellings of the legs and thighs, but recovered.

105 therefore of these, or 1 in 18, had preternatural or laborious births, or suffered in consequence of labour. Of this number of cases 43, or 1 in 44, were attended with particular difficulty or danger; and 7 only, or 1 in 270, died. The remaining 62 were delivered and recovered with little more than the common assistance: and

1792 had natural labours, not attended with any particular accidents.

1897

Of two women the uterus was retroverted in the third or fourth month of their pregnancy; but in both the uterus was replaced, and the women went to their full time, and brought forth live children.

Besides the accidents above enumerated, it seems right to observe, that many of the women were afflicted with severe after-pains, or had what is called the milk-fever; but as these complaints were generally relieved in three or four days, and did not seem to have any influence in retarding their recovery, or to affect their future healths, no notice is taken of them. Some women also had symptoms of incipient prolapsus uteri, who had not before been troubled with that complaint; but as

I seldom

I seldom saw them above once or twice, I cannot give the result. But as few of them were able to indulge themselves with rest, or to comply with the rules necessary for their cure, it is to be feared, that in many of them the complaint would gradually increase; and that in a course of years, the uterus would make its appearance externally, when, finding it an impediment to their activity, they would apply and submit to wear a pessary, or to such palliatives as in that state can only be administered. Excepting this accident, and the fluor albus, to which many of them are subject after child-bearing, but which, I think, does not often materially affect their healths until late in life, I am inclined to believe, that the lower sort of people recover more certainly after parturition than persons in higher stations of life: at least, they are less subject to the puerperal fever, which is so fatal, if not checked on its first attack; and which, if not caused, is certainly nourished, and its malignancy increased, by great fires, close rooms, warm septic diet and costiveness. But the apartments of the poor are generally so crazy, that without opening doors or windows, to which they are sufficiently averse, the air pours in upon them from all sides. To this circumstance, added to their inability to keep great fires, or to indulge themselves with animal food, and to the care that is taken very early to empty their bowels, I have been induced to attribute their so generally escaping this fatal disease; and by adopting rules in my private practice consonant to this idea, I have the satisfaction to be able to say, that I have not seen the puerperal fever among my private patients for more than three years.

TABLE of the proportion of male to female children, of the number of twins, and of the children that were deficient or monstrous, and of those that were dead-born.

1897 women were delivered of 1923 children; 972 boys and 951 girls, or as 46 boys to 45 girls.

23 of the women, or 1 in 80, were delivered of twins, 16 of whom were boys and 30 girls.

1 woman was delivered of 3 girls.

Of the twins and triplets, therefore, the males were only half the number of the females.

8 of the children, or 1 in 241, were deficient or monstrous.

Of these 1 was web-fingered;

1 had a hare-lip;

1 had a dropfical head and distorted spine;

1 a dropfical head;

in 1 a part of the palate;

and in 2 a considerable portion of the cranium * was wanting;

and 1 had two heads †, see fig. 1.

8

One

* One of these lived an hour after it was born.

† This was the child of ELIZABETH wife of — BROMFIELD, Peruke-maker, Jeess-court, Oxford-street. It had two heads and necks, four hands and arms, two spines, uniting at the sacrum, and terminating in one pelvis, from whence the lower extremities proceeded single: there was one navel-string, and one male organ of generation. On opening the body there were found, two thoracic cavities, the right more compleat than the left: the heart also, and the lungs on the right side, were more perfect than those on the left, which latter were very small.

There

One woman was delivered of a twin *, see fig. 2.

84 of the children, or 1 in 23 of the whole number, were dead-born †. Of these, 49, or nearly five-eighths, were boys, and 35 were girls.

Of 1400 women who returned their letters, or of whom a certain account could be obtained, 85, or nearly 1 in 16, had

There were two stomachs, two sets of intestines, which, at length uniting, terminated in one rectum and anus. There was but one urinary bladder. The drawing that accompanies this will give a more just idea of its external figure; and Dr. HUNTER, who dissected it, will probably one day oblige the world with an exact anatomical description of it.

* Of this singular production, to which I have not ventured to give a name, the following is the history and description. The woman who produced it is about twenty-seven years of age; this was her first pregnancy. She was, after a labour, delivered of a female foetus, and its placenta, in which nothing uncommon was observed; and although the uterus remained of an unusual size, yet the pains not recommencing, there was no suspicion entertained but that its bulk was occasioned by coagulated blood. On the third day the pains became violent, and this monster was born. Its shape was spherical, but somewhat flattened. It measured in its largest diameter eight inches, and weighed about eighteen ounces. It received its nourishment by an umbilical chord, to which was attached a portion of membranes, and although no placenta was found, it is probable it had a small one, and that it was inclosed in its own involucre. It was completely covered with a cuticula, and a little above the part, where the navel-string terminated, there was a hairy scalp covering a bony prominence, somewhat resembling the arch of the cranium. On dissection it was found to be plentifully supplied with blood vessels, proceeding from the navel-string, and branching through every part of it. It had a small brain and medulla spinalis continued into a bony theca, with nerves passing from thence through the foramina of the bones; but no resemblance of any thoracic or abdominal viscera. The rest of its bulk was made up of fat.

† By dead-born children I mean those that die after they have been perceived to move, that is, generally after four months. Abortions, or deaths before that period, may reasonably be estimated at double this number; so that, perhaps, 1 child in 8 dies in the womb, or in the act of coming into the world.

buried

buried their children before the end of two months. Of this number 53, or 5 in 8, were boys, and 32 girls.

This singular circumstance of there being a greater number of males than females among the still-born children, and of a greater number of male children dying in infancy than of females, has been remarked by Dr. PRICE and other writers on calculations; and Dr. HAYGARTH * has shewn that at Chester more husbands die in a given period than wives. This naturally suggests an enquiry, whether the lives of males are at all ages more precarious than those of females.

To be enabled to assist in answering this question, I have added the following article to my register, *viz.* of the children that shall be living at the time the women apply for their letters, how many will be boys, and how many girls?

* Observations on the bills of mortality in Chester for the year 1772.

TABLE of the ages at which women begin and cease to be capable of bearing children, and of the intermediate periods at which they are most so.

Of 2102 * pregnant women

	Years of age.	
+ 36 or 1 in 58 were from	- 15 to 19	85, or 1 in 25, from
49 or 1 in 43 were	- 20	15 to 20 inclusive.
578 or 5 in 19 were from	- 21 to 25	1684, or four fifths
699 nearly 1 in 3 were from	- 26 to 30	were from 21 to
407 nearly 1 in 5 were from	- 31 to 35	35 inclusive.
291 or 3 in 22 were from	- 36 to 40	
36 or 1 in 58 were from	- 41 to 45	42, or 1 in 50, from
6 or 1 in 350 were from	- 46 to 49	41 to 49.

2102

* Although 2102 women, the number here mentioned, obtained letters, entitling them to the assistance of the midwives, 1897 only were delivered by them: the remainder either removed out of the bounds of the Dispensary, or, from some alteration in their circumstances, were obliged to go to an hospital or workhouse.

+ 1 of these women was between 15 and 16 years of age.

1 between 16 and 17;

3 between 17 and 18;

10 between 18 and 19; and

21 between 19 and 20.

36

C

TABLES

TABLES of the number of children borne by 1389* women, with the number that were living at the time of their applying to the Dispensary.

Women.	No of children borne by each woman.	Total of children born.	Total of children living.	No of women who had preserved their children.	No of children preserved by each woman.	Total of children preserved.
1	24	24	5	—	—	—
1	17	17	3	—	—	—
3	16	48	5	—	—	—
2	14	28	11	—	—	—
11	13	155	46	—	—	—
14	12	168	44	—	—	—
15	11	165	45	1	11	11
22	10	220	84	—	—	—
33	9	297	93	—	—	—
56	8	448	151	4	8	32
74	7	518	213	3	7	21
89	6	534	214	11	6	66
138	5	690	288	32	5	160
169	4	676	293	84	4	336
208	3	624	299	174	3	522
254	2	508	259	306	2	612
299	1	299	171	464	1	464
1389 and 370 were in their first pregnancy,		†5419	2224	1079 and 310 had lost all their childr.		2224
1389				1389		

* In order to account for the difference between the number of the women in these and the preceding tables, it is proper to mention, that this account was not begun until some months after the former one. In these also care has been taken that no woman is reckoned more than once, although many of them had been assisted by the midwives to the Dispensary two, three, or four times. 370, as noted in the table, were in their first pregnancy.

† Of these 5419 children 2747 were boys, and 2672 girls, or nearly as 36 boys to 35 girls. This proportion of the boys to the girls will be found a little different from what is given in the table p. 362.

I have

I have placed these two tables together, that we might have an opportunity of observing how exceedingly fertile the women of the poorer classes in this country are; and at the same time how unable to rear any considerable number of children; for, although 321 of the women had borne six children and upwards each, and were all again pregnant, 19 only of them had been able to rear six or more children; and, although 102 of the women had borne nine children and upwards each, only one of them had been able to preserve that number living.

I am inclined to believe, that this great mortality amongst the children does not arise from any natural imbecillity or a constitution vitiated from the birth, many of those victims being born with all the appearances of health and vigour; but that we ought rather to search for the cause of it in the poverty of the parents, which prevents their taking the necessary care of, or even affording sufficient cloathing and nourishment to their offspring. Whether this great check to population is in its nature irremediable; and whether an abatement in the parish rates and taxes, but particularly the former, to persons rearing more than a certain number of children, or any other mode of relief and encouragement, would contribute to restrain so melancholy an evil, are inquiries well deserving the attention of government. In order to determine how well my conjectures on this subject are founded, it might be useful, perhaps, to learn what the proportion of deaths is in more opulent families, where the cause just now mentioned can have but little influence. But this must be the result of the united observations of different practitioners.

I shall now from these tables attempt to collect what the chance of life is at different periods, from infancy to twenty-six years of age; but, that I may be understood, it will be

necessary to premise some account of the method I have followed.

I have supposed each of the women to bear a child every two years; this, from the account of those who returned to the Dispensary a second, third, or fourth time, appearing to be the mean term. Upon this principle, when I find that a woman applied at the Dispensary who had had one child before, I conclude, that that child would be two years old, if living; but if the woman had borne two children, I suppose that the first would be four, the second two years old, and so on. And finding, that of 299 children borne by as many women, who were now advanced in their second pregnancy, 171, or seven-twelfths only were living, I conclude, that on an average 5 out of 12 die under two years of age: and observing that of 508 children borne by 254 women, who were now advanced in their third pregnancy, 259 only were living, I first deduct 210, which is five-twelfths of the whole number, who died under two years of age; and then find that 39, which is nearly one-twelfth of the whole number, or one-seventh of the survivors, died between two and four years of age.

TABLE of the chance of life from infancy to 26 years of age.

Age.	Persons living.	Decrease of life.	
0	5400	2250	5 in 12.
2	3150	450	6 in 12, or 1 in 7 of the survivors.
4	2700	180	8 in 15, or 1 in 15 of the survivors.
6	2520	204	4 in 7, or 1 in 12 and $\frac{1}{2}$ of the survivors.
8	2313	156	6 in 10, or 1 in 15 of the survivors.
18	2160	540	7 in 10, or 1 in 4 of the survivors.
26	1620		

3780 or seven-tenths would die.

1620 or three-tenths would be living at the end of 26 years.

5400

Whether this mode of calculating the chance of life will be admitted by gentlemen who have made speculations of this kind their peculiar study, I know not. I confess, that when I first thought of it, I expected it would have proved more certain and accurate than upon examination I have found it to be: for, although in the first series of years, where the deaths are numerous, the proportions agree tolerably well with the tables of M. BUFFON and others, yet as we advance we find ourselves obliged to take longer periods than two years. Thus, for instance, we may observe, that although from 2 to 4, from 4 to 6, and from 6 to 8 years of age, the decrease continues to go on; yet so far is this from being the case between the ages of 8 and 10, or even 12, that there then appears to be some trifling increase. But as the proportion of deaths from 8 to 10 or 12 is probably inconsiderable, a very small deduction from the deaths in the earlier years would rectify this difference. A deviation of this kind, I presume, might be occasioned by the small-pox,

or

or some other epidemic, prevailing amongst children during two or three years of the time I was making this collection, which would occasion the decrease in the first and second series to be greater than usual. If this should prove to be the case, it is probable, that in a course of years, by comparing this with a variety of similar tables, the true medium may be found.

A COMPARATIVE TABLE of the population of London, with a view to shew the proportion of natives to persons born in the different counties of England and Wales, in Scotland, Ireland, or foreign countries.

Of 3236 married persons

824 or one-fourth were born in London.

1870 or four-sevenths in the different counties of England and Wales.

209 or 1 in 15 in Scotland.

280 or 1 in 11 in Ireland.

53 or 1 in 60 were foreigners.

3236

Of the above number the males and females were in the following proportions.

Men.		Women.
329	were born in London, and	495 or 166 more than men.
952	— in different counties	917 or 35 fewer than men.
135	— in Scotland,	74 or 61 fewer than men.
162	— in Ireland, —	119 or 43 fewer than men.
40	— were foreigners,	13 or 27 fewer than men.
<u>1618</u>		<u>1618</u> <u>166</u>

Thus,

Thus, of 824 married persons born in London, there were one-fifth more women than men. This may be accounted for either by supposing a greater number of males to die or to migrate before they attain a marriageable age than women. It is also to be observed, that of the Scotch and of the foreigners the women are in proportion to the men as about 1 to 3; but of the Irish they are as 3 to 7.

By this table we find at how great an expence to the country this city is maintained; and as we may suppose that the bulk of the Scotch, Irish, and foreigners, who come into the kingdom, reside in the metropolis, we hence may also learn in what proportion they contribute to repair the waste which is incurred by its excessive populousness. A more compleat knowledge of these facts may give rise to regulations which, if the calculations of Dr. PRICE shall be found to be just, are but too necessary; but I fear I have already intruded upon your patience, and extended this paper beyond its due bounds. I shall only add, that if these inquiries should be favourably received by the illustrious body to whom you have so obligingly undertaken to present them, they will be continued, and their value of course increased by the additional number of objects which each year will supply.

I am, &c.

St. Alban's Street,
March 26, 1781.



of the Westminster General Dispensary.

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By this table we find at how great an expense to the country this city is maintained; and as we may suppose that the bulk of the Scotch, Irish, and foreigners, who come into the kingdom, reside in the metropolis, we here may also learn in what proportion they contribute to repair the waste which is incurred by its excessive population. A more complete knowledge of these facts may give rise to regulations which, if the calculations of Dr. Price shall be found to be just, are but too necessary; but I fear I have already intruded upon your patience, and extended this paper beyond its due bounds. I shall only add, that if these inquiries should be favourably received by the illustrious body to whom you have so obligingly undertaken to present them, they will be continued, and their value of course increased by the additional number of objects which each year will supply.

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