BIRTH WEIGHT AND GESTATION TIME IN RELATION TO MATERNAL AGE, PARITY AND INFANT SURVIVAL

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Introduction

The present communication continues a statistical analysis (Karn, Lang-Brown, MacKenzie & Penrose, 1951; Karn, 1947) of the relation between birth weight and gestation time, taking into account the mother's age and parity.

The large body of data assembled from the records of U.C.H. Obstetric Hospital for the years 1935–46 contains information about 13,730 infants (7037 male, 6693 female) and their mothers.

A number of twins was recorded for these years, but, as the present investigation was concerned with the variations of normal birth weight and gestation time, these were not included. The data contained information on stillbirths and neonatal deaths (non-survivors at 28 days), 340 males, 274 females. Thus, the complete data were as follows:

	Males	Females
Survivors (beyond 28 days)	6697	6419
Non-survivors (stillbirths and neonatal deaths)	340	274
Totals	7037	6693

The means and standard deviations for the four variables are set out in Table 1, for males and females, for the groups of survivors, non-survivors, together and separately.

Table 1. *Means and standard deviations of four variables for (a) all births, (b) survivors, (c) non-survivors, and the difference (c) − (b)*

	No.	Weight (lb.)		Mother's age (years)		Parity		Gestation time (days)	
		Mean	S.D.	Mean	S.D.	Mean	S.D.	Mean	S.D.
(*a*) Males	7037	7·27 ± 0·02	1·32	28·13 ± 0·07	5·61	0·89 ± 0·02	1·70	279·66 ± 0·18	15·41
Females	6693	7·06 ± 0·02	1·22	28·23 ± 0·07	5·72	0·92 ± 0·02	1·71	280·60 ± 0·18	14·37
(*b*) Males	6697	7·35 ± 0·01	1·17	28·07 ± 0·07	5·57	0·89 ± 0·02	1·68	280·71 ± 0·16	13·02
Females	6419	7·13 ± 0·01	1·10	28·18 ± 0·07	5·72	0·92 ± 0·02	1·72	281·50 ± 0·15	12·32
(*c*) Males	340	5·64 ± 0·13	2·43	29·30 ± 0·34	6·24	1·01 ± 0·11	2·12	259·06 ± 1·82	33·61
Females	274	5·28 ± 0·13	2·20	29·40 ± 0·34	5·67	0·94 ± 0·09	1·52	259·45 ± 1·93	31·89
(*c*) − (*b*)		Difference in mean weight (lb.)		Difference in mean age (years)		Difference in parity		Difference in gestation time (days)	
Males		−1·71 ± 0·13		+1·23 ± 0·35		+0·12 ± 0·12		−21·65 ± 1·83	
Females		−1·85 ± 0·13		+1·22 ± 0·35		+0·02 ± 0·10		−22·06 ± 1·94	

The means for non-survivors can be compared with those for the survivors. The non-survivors are thus seen to be significantly lighter at birth with considerably shorter mean gestation time and somewhat older maternal age than survivors. Parity in the two groups is the same.

Analysis of normal birth weight

In order that the data for statistical constants may be homogeneous, it is best to eliminate as far as possible the infants with gross abnormalities and low viability: this has been done by taking only the survivors after 28 days. The relationships between pairs of the variables are shown in Table 2, giving both total and partial correlations.

Table 2. *Correlation between pairs of the factors birth weight, parity, mother's age, and gestation time, and partial correlations corrected for age and parity*

Correlated factors	Males 6697	Females 6419	Corrected for	Males	Females
Birth weight and parity	0·166 ±0·012	0·180 ±0·012	Age	0·166	0·173
Birth weight and mother's age	0·043 ±0·012	0·062 ±0·012	Parity	−0·043	−0·035
Parity and mother's age	0·482	0·507	—	—	—
Gestation time and parity	−0·041 ±0·012	−0·054 ±0·012	Age	−0·021	−0·018
Gestation time and mother's age	−0·046 ±0·012	−0·074 ±0·012	Parity	−0·030	−0·055
Birth weight and gestation time	0·417	0·377	Age	0·420	0·384
Birth weight and gestation time	—	—	Parity	0·431	0·395
Birth weight and gestation time	—	—	Age and Parity	0·430	0·394

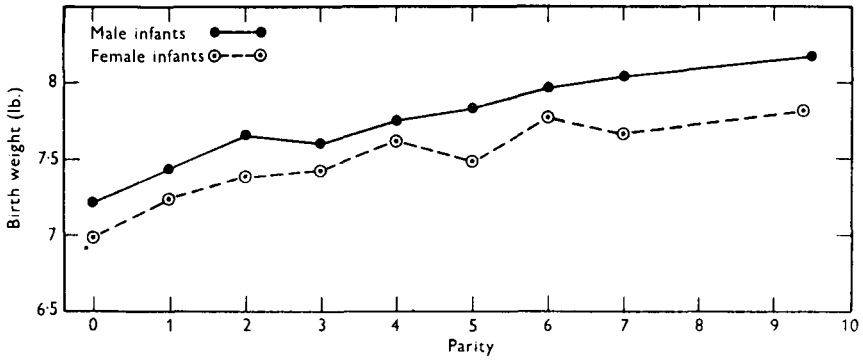

Fig. 1. Mean birth weight for given parity.

Taking first *birth weight* with *parity* and with *mother's age*, the correlation between *birth weight* and *parity* is significant (0·166, male; 0·180, female), and that between *birth weight* and *mother's age* is very small (0·043, male; 0·062, female).

The correlations between *parity* and *mother's age* are 0·482, male, and 0·507, female. With the help of these, correcting for *age*, the correlation between *birth weight* and *parity* is scarcely altered and is still significant (0·166, male; 0·173, female).

Correcting for *parity*, the correlation between *birth weight* and *mother's age* is changed to a small but significant negative value (−0·043, male; −0·035, female).

These relations are well illustrated by the series of mean weights for different parities in Table 3 and Fig. 1. The means of the first born are the lowest in both sexes, rising to nearly 1 lb. more for the high parities 8 and over.

Table 4 similarly shows how the mean weights vary with mother's age, the infants of the youngest mothers having the smallest weights which rise slightly, by about $\frac{1}{4}$ lb. altogether, to the highest values at ages over 40.

Table 3. *Mean birth weight and mean gestation time for given parity—males and females*

Parity	Weight				Gestation time			
	Males		Females		Males		Females	
	No.	Mean (lb.)	No.	Mean (lb.)	No.	Mean (days)	No.	Mean (days)
0	4114	7·205	3933	6·982	4114	281·14	3933	282·06
1	1307	7·437	1226	7·244	1307	279·84	1226	280·95
2	548	7·654	466	7·384	548	280·82	466	279·75
3	257	7·599	301	7·416	257	280·31	301	281·25
4	162	7·750	156	7·606	162	280·61	156	282·96
5	103	7·829	126	7·484	103	277·49	126	277·60
6	67	7·955	71	7·773	67	277·97	71	280·94
7	48	8·026	55	7·657	48	285·75	55	277·64
8 and over	91	8·174	85	7·820	91	277·22	85	280·24
Total	6697	7·350	6419	7·132	6697	280·71	6419	281·50

Table 4. *Mean birth weight and mean gestation time for given age group of mother—males and females, all births*

Mother's age group	Weight				Gestation time			
	Males		Females		Males		Females	
	No.	Mean (lb.)	No.	Mean (lb.)	No.	Mean (days)	No.	Mean (days)
Under 20	291	7·259	228	7·041	291	279·78	228	281·34
20–	1461	7·303	1519	7·033	1461	281·23	1519	282·58
24–	1889	7·327	1711	7·140	1889	281·18	1711	281·93
28–	1468	7·368	1401	7·145	1468	281·41	1401	281·29
32–	915	7·358	879	7·201	915	279·30	879	280·86
36–	484	7·480	453	7·249	484	279·21	453	280·21
40 and over	189	7·566	228	7·252	189	278·59	228	277·66
All ages	6697	7·350	6419	7·132	6697	280·71	6419	281·50

The influence of parity on the mean weights in Table 3 would lead, theoretically, to still higher values of weight, if age had not the effect of slightly lowering them.

The influence of age by itself on the mean weights in Table 4 would, in the same way, lead to decreasing instead of increasing values if parity had not the effect of increasing the weight.

The two factors parity and maternal age thus have independent effects, parity having the greater influence, and mother's age very little. In a population where small numbers in the family are the rule, the former effect might be shown in an absolute deficiency of the heavier babies.

The opinion of many workers, quoted by Martin (1931), that weight is related to place in the family and that this factor is more important than the age of the mother, is thus confirmed.

These points are shown in Table 5, in which mean weights for given parity and age group of mother, for each sex, are given.

Table 5. *Mean weight (lb.) for given parity and age group of mother*

Males

Age group of mother	Parity					
	0	1	2	3 and 4	5 and 6	7 and over
Under 20	7·24	7·61	7·79	—	—	—
20–	7·14	7·46		7·60	7·39	—
24–	7·21	7·38	7·71			—
28–	7·15	7·37	7·69	7·58	8·08	8·18
32–	7·06	7·36	7·39	7·51	7·82	7·85
36–	7·09	7·19	7·49	7·61	7·80	7·96
40 and over	6·90	7·16	6·99	7·91	7·49	8·02

Females

Age group of mother	Parity					
	0	1	2	3 and 4	5 and 6	7 and over
Under 20	7·00	7·29	—	—	—	—
20–	6·98	7·10	7·34	7·14	—	—
24–	7·01	7·24	7·38	7·41	7·48	—
28–	6·91	7·37	7·38	7·48	7·59	7·68
32–	6·91	7·18	7·22	7·56	7·38	8·11
36–	6·83	6·94	6·97	7·37	7·59	7·70
40 and over	6·61	7·08	7·20	6·98	7·71	7·58

In the columns of the tables it is seen that the first, second and third born have a definite decrease in weight as age of mother increases, while in the later parities the weights are high whatever the age of the mother may be.

The mean birth weight for the sexes together and for all parities (7·24 lb.) falls within the range of means for numerous data from diverse groups extending over the period from 1866 up to date, recorded by Murray (1924) and Henderson (1945).

Analysis of normal gestation time

When *gestation time* is the variable under consideration the accuracy of the estimate of the standard deviation can be improved by making a correction for the uncertainty of the exact day of the beginning. The only date given is the first day of the last menstrual period. The time of ovulation is variable and may be assumed to be, on the average, at the middle of the interval between successive menstruations; the date as recorded is likely to be too early by about 15 days, as a mean, some cases having an earlier, others a later beginning of gestation. Thus use can appropriately be made of the variance $\frac{1}{12}h^2$ of a rectangular frequency distribution in which all values of the variable lie within a range $\pm\frac{1}{2}h$ of the mean and are equally frequent (Yule & Kendall, 1940).

In the calculation of the constants for gestation time this correction has been used, with $h = 30$ days, in addition to Sheppard's correction.

Considering next the association of *gestation time* with *parity*, and *maternal age*, the correlations are found to be nearly negligible, *gestation time* and *parity* having the values $-0{\cdot}041$ (males) and $-0{\cdot}054$ (females), which when corrected for *age* have reduced negative values $-0{\cdot}021$ and $-0{\cdot}018$ respectively. The means in Table 4 confirm this negative tendency and indicate that, on the whole, the mean gestation times are shorter by a day or two for the later parities 5 and over.

Gestation time and *age* have also a small negative correlation, with values $-0{\cdot}046$ (males) and $-0{\cdot}074$ (females), reducing to $-0{\cdot}030$ and $-0{\cdot}055$ respectively when corrected for *parity*.

Table 4 shows the same effect in the mean gestation times for age, those for mothers under 32 being a day or two longer than those from 32 upwards.

The conclusion reached by Gibson & McKeown (1950) for Birmingham data is that there is no consistent relationship between mean gestation time and maternal age and parity; but the above correlations show a negative correspondence in both, small but significant.

Relationship between birth weight and gestation time

One of the main objects of this investigation was to explore the relationship between *birth weight* and *gestation time*. In the previous analysis (Karn *et al.* 1951) of familial data the correlation was found to be of varying value in different groups, from 0·3 to 0·5. With much larger numbers this correlation is now 0·417 for males and 0·377 for females, uncorrected. When allowance is made for the small influence of maternal age and parity on both weight and gestation time, the correlation is raised to 0·430 for males and 0·394 for females.

Table 6. *Mean birth weight for given gestation time*

(*a*) Males			(*b*) Females		
Days	No.	lb.	Days	No.	lb.
219·2	49	4·964	218·4	42	4·961
237	131	6·107	237	98	6·403
252	363	6·615	252	294	6·427
267	1303	6·978	267	1166	6·769
282	3220	7·463	282	3198	7·195
297	1297	7·762	297	1320	7·488
312	261	7·735	312	228	7·568
327	61	7·853	327	57	7·423
342	12	7·734	345	16	7·609
All	6697	7·350	All	6419	7·132

The relationship is not entirely linear, and the regression of weight on time may be well represented by a parabola as shown in Figs. 5 and 6 in the above reference (Karn *et al.*). The mean weights for given gestation time are shown in Table 6 and in Fig. 2. Some remarkable characteristics are apparent in the illustration. The growth between 252 days (that is, 36 weeks or $8\frac{1}{4}$ months) and 297 days (that is, 42 weeks or $9\frac{3}{4}$ months) is definitely linear; there seems to be a slowing down of growth in weight to almost nil after 297 days; the male and female weights appear to be undifferentiated before 247 days, after which the males are always heavier.

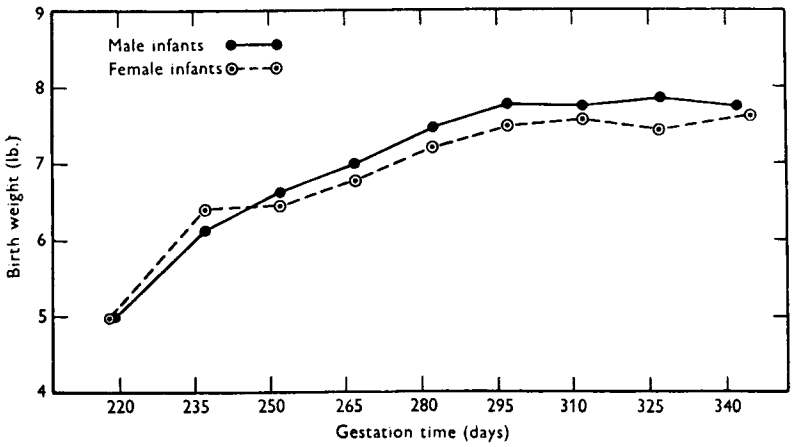

Fig. 2. Mean birth weight for given gestation time.

Birth weight and infant survival

In Table 7 the combined still birth and neonatal mortality rates per cent and the survival rates per mille, for males and females, are given according to weight.

The distributions of survival rates in relation to birth weights show highest values in the group above average weight, 7½–8½ lb. (979 for males and 985 for females); next in order comes the group with weights 6½–7½ lb. (with values of 973 for males and 981 for females). It is interesting

Table 7. *Mortality rates per cent and survival rates per mille for given birth weight, males and females*

Birth weight (lb.)	Males				Females			
	Totals	Neonatal deaths	Mortality rate (%)	Survival per 1000	Totals	Neonatal deaths	Mortality rate (%)	Survival per 1000
8½ and over	998	36	3·6	964 ± 6	630	20	3·2	968 ± 7
7½–	2083	44	2·1	979 ± 3	1689	25	1·5	985 ± 3
6½–	2405	66	2·7	973 ± 3	2570	49	1·9	981 ± 3
5½–	1081	44	4·1	959 ± 6	1324	41	3·1	969 ± 5
4½–	269	34	12·6	874 ± 20	299	33	11·0	890 ± 18
Under 4½	201	116	57·7	423 ± 35	181	106	58·6	414 ± 37
Total	7037	340	4·8	952 ± 3	6693	274	4·1	959 ± 2

here to note the results obtained by Hosemann (1950) in Göttingen, who tabulated mortality rate at different birth weights; his survival rates beyond 10 days after birth shown in Table 8 are nearly comparable with those in the present data. Again, the most favourable rates are found in the range between 7·7 and 8·8 lb., that is, they are in the group above the average. Hosemann concludes, however, that the lowest mortality lies at approximately the average weight.

It is natural to assume that in consequence of the action of natural selection the mean value of any biological measurement would be the most normal value and associated with the most

favourable survival rate. In the case of birth weight the optimal value from the point of view of avoiding stillbirth or neonatal mortality is clearly greater than the mean.

Table 8. *Göttingen data*

g.	lb.	Totals	Deaths within 10 days of birth	Mortality (%)	Survival per 1000
4500–	9·9–	123	8	6·5	935
4000–	8·8–	690	18	2·6	974
3500–	7·7–	2692	42	1·56	984·4
3000–	6·6–	3779	62	1·64	983·6
2500–	5·5–	1534	35	2·3	977
2000–	4·4–	275	24	8·7	913
Under 2000	Under 4·4	53	24	45·3	547
All		9146	213	2·3	976·7

The optimal birth weight can be estimated with fair precision on the assumption that both survivors and non-survivors have weight distributions approximating to Gaussian curves. The logarithm of the ratio of probability of surviving to that of not surviving would then describe a

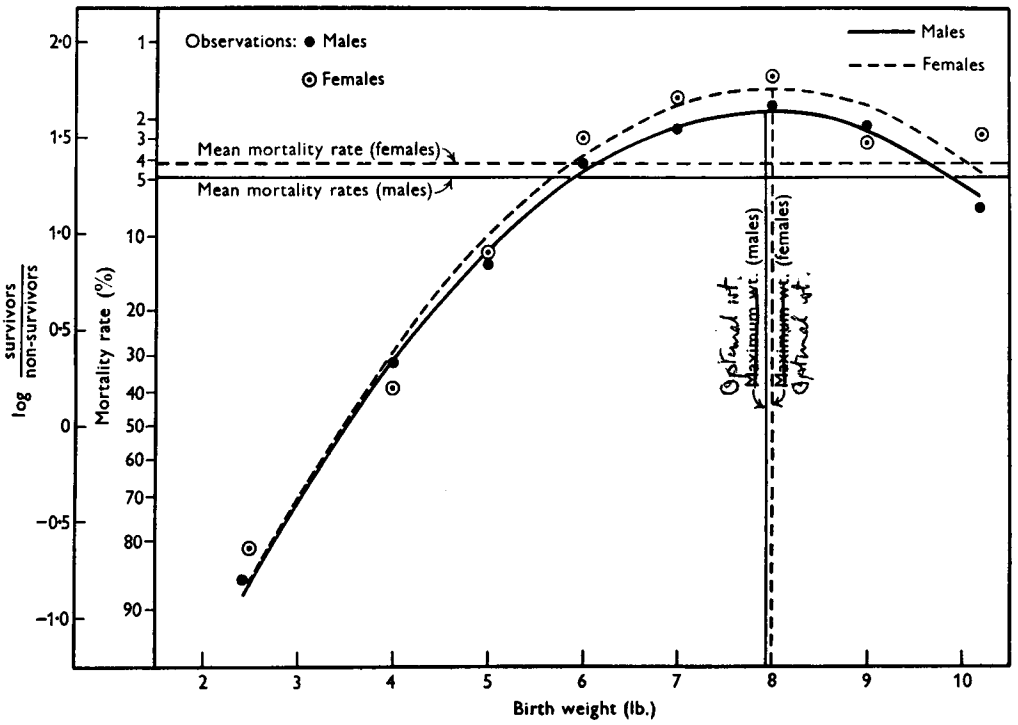

Fig. 3. Odds on survival and mortality rate per cent for given birth weight. Males and females.

parabola with its apex at the birth-weight value where the odds on survival was maximal. From the data under consideration, parabolas were fitted to the observed probability ratios at different birth weights both for males and females. In doing this, the contribution of each observed point was made proportional to the product, divided by their sum, of the numbers of survivors and non-survivors in each weight group. Fig. 3 shows the result of fitting these parabolas. The ordinate

(y) is the common logarithm of the ratio of survivors to non-survivors and the abscissa is birth weight. The equations are as follows:

$$y = -0{\cdot}0832x^2 + 1{\cdot}3195x - 3{\cdot}5956 \quad \text{for males}$$

and

$$y = -0{\cdot}0848x^2 + 1{\cdot}3586x - 3{\cdot}6851 \quad \text{for females.}$$

The odds on survival are maximal ($dy/dx = 0$) at about 8 lb. in each case ($x = 7{\cdot}93$ for males and $x = 8{\cdot}01$ for females), and the mortality rate there is less than 2 %. The average mortality rate for males, 4·8 %, occurs at 5·91 lb. and also at 9·95 lb. Between these critical points mortality rate is less than the average, and outside them it is in excess of the average. For females the critical points, where average mortality is 4·1 %, are 5·85 and 10·05 lb. Infants of either sex, whose birth weights are below 5·9 lb. or above 10·0 lb., could be called 'dysmature', a more logical criterion perhaps than that defining as 'premature' those infants who weigh less than 5·5 lb. at birth.

Gestation time and infant survival

The effect of gestation time on survival rates is shown in Table 9, the most favourable rates (975 for males and 982 for females) being found in the range of 275–289 days, which is the average group. Unduly short periods, less than 260 days, are, however, much more unfavourable than unduly long periods, 305 days or more.

Table 9. *Mortality rates per cent and survival rates per mille for given gestation time in males and females*

Gestation time (days)	Males				Females			
	Totals	Neonatal deaths	Mortality rate (%)	Survival per 1000	Totals	Neonatal deaths	Mortality rate (%)	Survival per 1000
Under 260	688	145	21·7	789 ± 16	556	122	21·9	781 ± 18
260–	1353	50	3·7	963 ± 5	1209	44	3·6	964 ± 5
275–	3302	82	2·5	975 ± 3	3257	59	1·8	982 ± 2
290–	1343	46	3·4	966 ± 5	1359	39	2·9	971 ± 5
305 and over	351	17	4·8	952 ± 11	312	10	3·2	968 ± 10
Total	7037	340	4·8	952 ± 3	6693	274	4·1	959 ± 2

Estimation of infant survival rates from the combined distribution of birth weight and gestation time

Since the infant mortality (stillbirths and neonatal deaths) is influenced both by birth weight and gestation time, it may be useful to inquire into the nature of their combined effects. These are not independent variables, and it seemed worth while to obtain a general formula for the odds on survival for any given values of the two variables amplifying the method described by Smith (1947) for discrimination between two classes whose measurements, like those of survivors and non-survivors, have markedly different variances. The calculation of this general formula from the data in Appendix Tables 1 (i) and (ii) is given in full, and the corresponding values of survival chances for males and females are illustrated in Figs. 4 and 5 respectively.

The chance of an infant of given birth weight and gestation time falling into the non-survivor group being r %, and that of falling into the survivor group being $(100-r)$ %, the odds on survival will be $\frac{100-r}{n}\Big/\frac{r}{N}$, i.e. $\frac{100-r}{r}\times\frac{N}{n}$; and this will be equal to $\frac{f_A(x,y)}{f_B(x,y)}$, where the bivariate distributions of x (gestation time) and y (birth weight) for populations A (survivors) and B (non-survivors) are given by

$$f_A(x,y)=(2\pi\sqrt{w})^{-1}\exp-\tfrac{1}{2}[i_{xx}(x-m_x)^2+2i_{xy}(x-m_x)\,(y-m_y)+i_{yy}(y-m_y)^2] \quad (1)$$

and
$$f_B(x,y)=(2\pi\sqrt{W})^{-1}\exp-\tfrac{1}{2}[I_{xx}(x-M_x)^2+2I_{xy}(x-M_x)\,(y-M_y)+I_{yy}(y-M_y)^2], \quad (2)$$

m_x being mean days of gestation time, m_y mean birth weight, v_{xx} variance of gestation time, v_{yy} variance of birth weight, v_{xy} co-variance of the two variables, $w=v_{xx}v_{yy}-v_{xy}^2$, $i_{xx}=\frac{v_{yy}}{w}$, $i_{xy}=-\frac{v_{xy}}{w}$, $i_{yy}=\frac{v_{xx}}{w}$, similar definitions applying to the values M_x, ..., V_{xx}, ..., I_{xx}.

Taking Napierian logarithms ($\times 2$) of equations (1) divided by (2)

$$2\log f_A(x,y)-2\log f_B(x,y)=\alpha_{xx}x^2+2\alpha_{xy}xy+\alpha_{yy}y^2+2\alpha_x x+2\alpha_y y+\alpha,$$

where the constants can be calculated in terms of m_x, i_{xx}, ..., M_x, I_{xx}, ..., m_y, i_{yy}, ..., M_y, I_{yy}, ... from the observations.

But $2\log f_A(x,y)-2\log f_B(x,y)$ is equal also to $2\log\left(\frac{100-r}{r}\times\frac{N}{n}\right)$, therefore

$$\alpha_{xx}x^2+2\alpha_{xy}xy+\alpha_{yy}y^2+2\alpha_x x+2\alpha_y y+\alpha=2\log\left(\frac{100-r}{r}\times\frac{N}{n}\right). \quad (3)$$

The right-hand side will be zero if r is the average mortality per cent, viz. $100N/(N+n)$; and this will give the *critical* contour

$$\alpha_{xx}x^2+2\alpha_{xy}xy+\alpha_{yy}y^2+2\alpha_x x+2\alpha_y y+\alpha=0. \quad (4)$$

A series of contours can be obtained by giving different values to r in equation (3).

In the calculation of the constants from the data an arbitrary origin $x=282$ days, $y=6{\cdot}9844$ lb. and units of 15 days and 1 lb. respectively have been used.

It has been found convenient then to transform equation (4) to parallel co-ordinate axes through the centre, giving

$$-1{\cdot}1275x^2+0{\cdot}3147xy-0{\cdot}4714y^2+3{\cdot}3091=0 \text{ (males)}$$

and
$$-1{\cdot}2245x^2+0{\cdot}2452xy-0{\cdot}4929y^2+3{\cdot}5799=0 \text{ (females)},$$

the centre being 283·28 days, 7·846 lb. for males; 283·39 days, 7·842 lb. for females. These are the optimal values.

The horizontal diameter $y=0$ cuts the ellipse in points

$$x=\pm 1{\cdot}7131 \text{ (males)} \quad \text{and} \quad x=\pm 1{\cdot}7099 \text{ (females)}. \quad (5)$$

The diameter conjugate to $y=0$ in each case, that is,

$$-1{\cdot}1275x+0{\cdot}1574y=0 \text{ (males)} \quad \text{and} \quad -1{\cdot}2245x+0{\cdot}1226y=0 \text{ (females)}, \quad (6)$$

cuts the ellipse (1), (2) in points where

$$y=\pm 2{\cdot}7135 \text{ (males)} \quad \text{and} \quad y=\pm 2{\cdot}7293 \text{ (females)}. \quad (7)$$

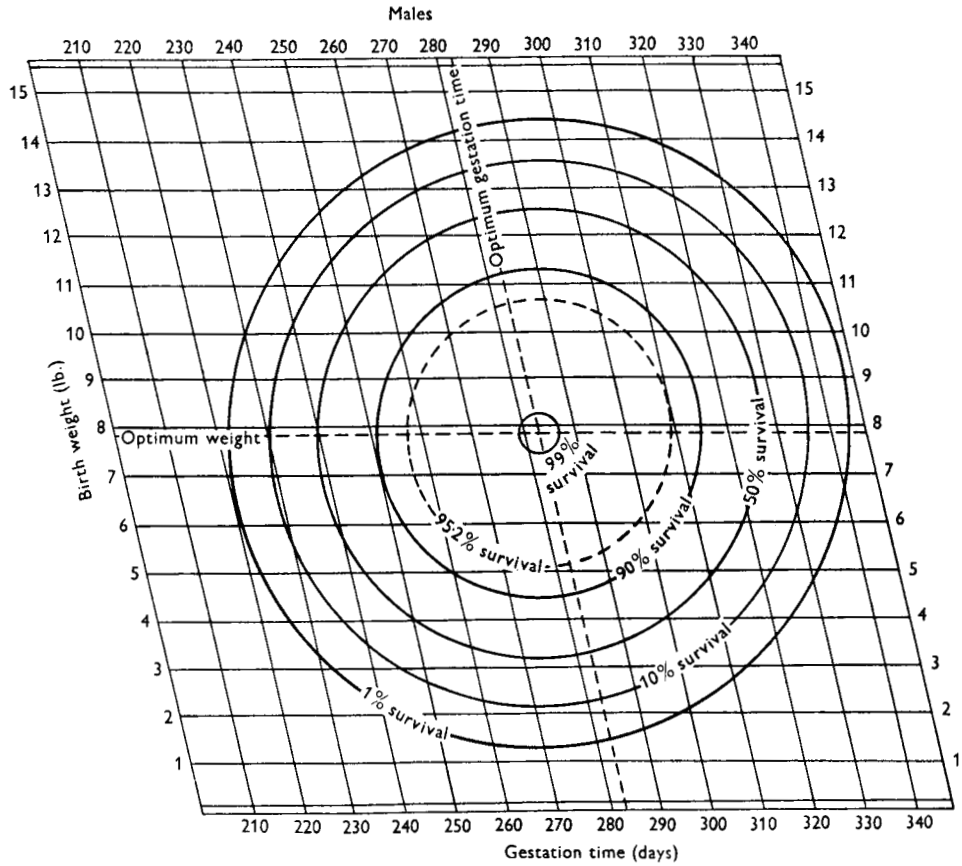

Fig. 4. Percentage survival for given birth weight and gestation time, showing critical circle (95·2%, average).

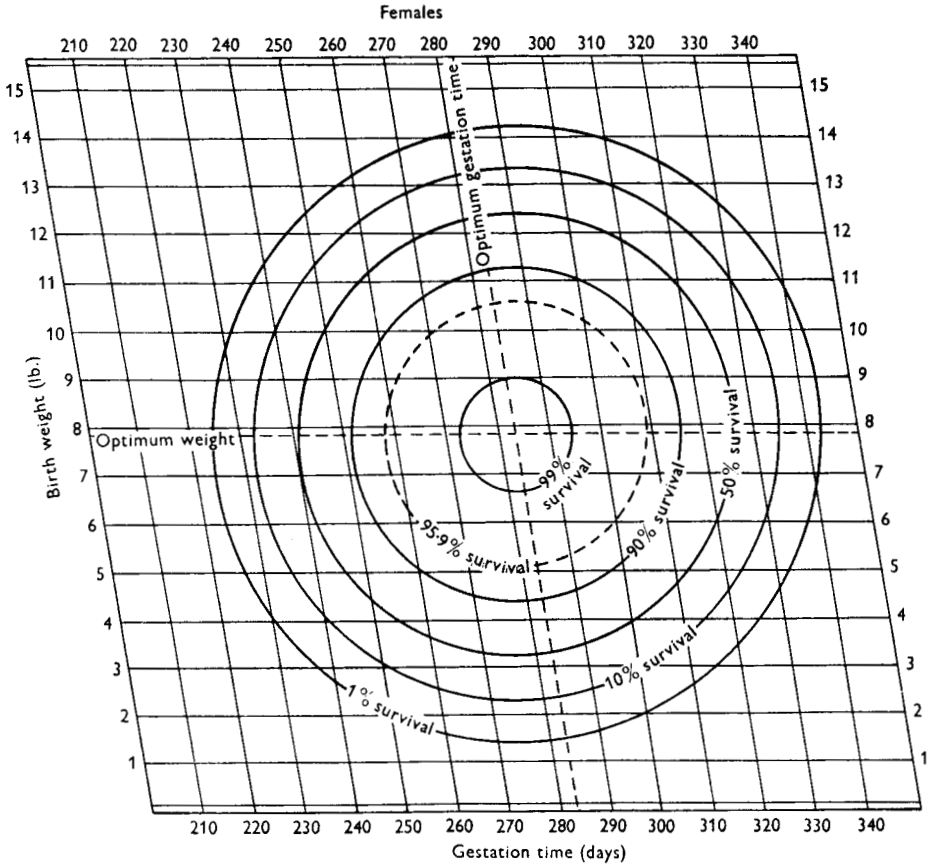

Fig. 5. Percentage survival for given birth weight and gestation time, showing critical circle (95·9%, average).

Contours for different mortality or survival rates can be drawn over a grid (Figs. 4, 5). In order to simplify the appearance of these contours, the ellipses have, by choice of suitable oblique co-ordinate axes and relative scale of x and y, been transformed into circles. The axis of x is kept the same, and a new y-axis is taken making an angle θ with the vertical, anti-clockwise, so that the conjugate diameters (6) become vertical, and θ has the values

$$\tan^{-1}\left(\frac{0{\cdot}1574}{1{\cdot}1275}\right), \quad \text{i.e. } \tan^{-1}(0{\cdot}1396) \quad \text{(males)}$$

and

$$\tan^{-1}\left(\frac{0{\cdot}1226}{1{\cdot}2245}\right), \quad \text{i.e. } \tan^{-1}(0{\cdot}1001) \quad \text{(females)}.$$

Then, using the ratio of the corresponding values of x and y given in (5) and (7), 1·7131 x-units are to be equal to 2·7135 y-units (males) and 1·7099 x-units are to be equal to 2·7293 y-units (females), that is, taking the new y-unit as 1·7131/2·7135 or 0·6313 times the original (males), and 1·7099/2·7293 or 0·6265 times the original (females), the ellipses will appear to be circular.

The angle θ in the new scale will be

$$\tan^{-1}\left(\frac{0{\cdot}1396}{0{\cdot}6313}\right), \quad \text{i.e. } \tan^{-1}(0{\cdot}2211) \text{ or } 12^\circ\ 28' \quad \text{(males)}$$

and

$$\tan^{-1}\left(\frac{0{\cdot}1001}{0{\cdot}6265}\right), \quad \text{i.e. } \tan^{-1}(0{\cdot}1598) \text{ or } 9^\circ\ 5' \quad \text{(females)}.$$

The *critical* circle, then, is that which has centre at the centre of the ellipse, and radius 25·70 days or 2·71 lb. (males), and radius 25·65 days or 2·73 lb. (females). It marks the boundary on which the rate of mortality is average, 4·83 % (males) and 4·09 % (females).

Within the circle the values of weight and gestation time can be regarded as normal or mature, and those outside can be regarded as immature or 'dysmature'. This, again, may be a more logical classification of the data than 'premature' and 'postmature' groups.

In addition to the critical circle some other contours of interest can be drawn in the diagram, for different values of r.

Tabulation of results is shown in Table 10, giving the radius x (as days of gestation and as pounds) obtained by putting $y = 0$ in equation (3) transformed to parallel co-ordinate axes through the centre, that is,

$$-1{\cdot}1275x^2 + 0{\cdot}3147xy - 0{\cdot}4714y^2 + 3{\cdot}3091 = 2\log\left(\frac{100-r}{r} \times \frac{340}{6697}\right) \quad \text{(males)}$$

and

$$-1{\cdot}2245x^2 + 0{\cdot}2452xy - 0{\cdot}4929y^2 + 3{\cdot}5799 = 2\log\left(\frac{100-r}{r} \times \frac{274}{6419}\right) \quad \text{(females)}.$$

For help in the interpretation of the diagrams it may be noted that the 1 % mortality rate applies, for the males, to the small range of gestation time and weight of 4 days less or more than the centre value 283·28, and 0·42 lb. less or more than the value 7·846, that is, for 279–287 days and 7·43–8·27 lb.

The females, however, have a larger range for this low mortality rate, viz. 272–294 days and 6·64–9·04 lb.

In other respects the odds on survival are about the same for the sexes.

Table 10. *Radius of contour (as days of gestation time or lb. of birth weight) of different survival rates per cent*

(*a*) Males, $1{\cdot}1275x^2 = 2\log\frac{r}{100-r} + 9{\cdot}2701$.

	Mortality (%) r	Survival (%) $100-r$	Radius with centre (283·28 days, 7·846 lb.)		
			x (15 day units) or y (lb.)	Days	lb.
Max. survival	0·96	99·04	0	0	0
	1	99	0·266	3·99	0·42
Av. survival	4·83	95·17	1·713	25·70	2·71
	10	90	2·080	31·19	3·29
	50	50	2·867	43·01	4·54
	90	10	3·481	52·22	5·51
	99	1	4·046	60·69	6·41

(*b*) Females, $1{\cdot}2245x^2 = 2\log\frac{r}{100-r} + 9{\cdot}8877$.

	Mortality (%) r	Survival (%) $100-r$	Radius with centre (283·39 days, 7·842 lb.)		
			x (15 day units) or y (lb.)	Days	lb.
Max. survival	0·71	99·29	0	0	0
	1	99	0·755	11·32	1·20
Av. survival	4·09	95·91	1·710	25·65	2·73
	10	90	2·118	31·77	3·38
	50	50	2·842	42·63	4·54
	90	10	3·415	51·23	5·45
	99	1	3·947	59·21	6·30

Summary

An analysis of data from the records of nearly 14,000 male and female infants of mothers attending University College Obstetric Hospital has confirmed that birth weight and days of gestation are correlated to the extent of 0·4, that birth weight increases with parity, but decreases slightly with mother's age, that the correlation of mother's age and parity is 0·5.

A calculation of survival rates showed the most favourable point to be above mean weight, at nearly 8 lb.

For gestation time the highest survival rate was close to the mean value.

Parabolas are found to give a good fit to the logarithm of odds on survival for given birth weight, for males and females.

Tables and diagrams are provided for estimating the survival rate for any given weight and gestation time.

The writers wish to thank all those who have helped to obtain and to prepare the material used in this investigation, in particular, Prof. W. Nixon, Dr H. O. Hartley, Miss Helen J. MacKenzie, and Mrs M. Johnson.

APPENDIX

N.B. All births (heavy type): non-survivors (italics) throughout.

Table 1 (i). *Birth weight and gestation time (males)*

Birth weight (lb.)*	Gestation time (days)																																					Total
	155–	160–	165–	170–	175–	180–	185–	190–	195–	200–	205–	210–	215–	220–	225–	230–	235–	240–	245–	250–	255–	260–	265–	270–	275–	280–	285–	290–	295–	300–	305–	310–	315–	320–	325–	330–	335–	340–	345–	
13–13½	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	*1*	.	.	.	.	.	.	.	.	.	.	.	.	*1*
12½–	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	**1**	.	.	.	.	.	.	.	.	.	.	.	.	**1**
12–	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
11½–	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
11–	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	**2**	.	.	.	.	.	.	.	.	.	.	.	**2**
	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	*1*	.	.	.	.	.	.	.	.	.	.	.	.	*2*
10½–	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	**1**	**1**	**2**	**3**	.	**3**	**4**	**1**	.	.	.	.	.	.	.	.	**15**
	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	*1*	.	*1*	.	.	.	.	.	.	.	.	.	*2*
10–	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	**1**	**1**	**1**	**3**	**1**	**1**	**5**	**2**	**3**	**3**	**2**	.	**1**	**1**	.	.	.	.	.	**25**
	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	*1*	.	.	.	.	*2*	.	*1*	.	.	.	*1*	.	.	.	.	.	.	.	*6*
9½–	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	**1**	**1**	**2**	.	**5**	**10**	**7**	**8**	**10**	**5**	**3**	**2**	**5**	.	**1**	**2**	.	.	.	**1**	**63**
	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	*1*	*1*	*1*	.	.	*1*	*1*	.	.	.	.	.	*5*
9–	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	**1**	.	.	.	.	.	**2**	**1**	**6**	**10**	**23**	**34**	**23**	**12**	**8**	**4**	**2**	**2**	**3**	**1**	.	.	.	.	**132**
	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	*1*	*1*	.	*1*	.	.	*1*	.	.	.	.	.	.	.	*4*
8½–	.	.	.	.	.	.	.	.	.	.	.	.	**1**	.	.	**1**	.	**1**	**1**	**3**	**4**	**2**	**11**	**15**	**29**	**54**	**48**	**51**	**36**	**21**	**9**	**2**	**5**	**2**	**2**	**2**	.	.	**1**	**301**
	.	.	.	.	.	.	.	.	.	.	.	.	.	*1*	.	.	.	.	.	*1*	*1*	.	.	.	*2*	*6*	.	.	*1*	*1*	.	*3*	.	.	.	.	.	.	.	*16*
8–	.	.	.	.	.	.	.	.	.	.	**1**	.	.	**1**	.	**1**	**1**	**3**	**2**	**4**	**9**	**9**	**6**	**32**	**55**	**99**	**90**	**76**	**30**	**12**	**12**	**6**	**6**	**2**	**1**	.	**1**	.	.	**459**
	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	*2*	*1*	*1*	*2*	*3*	*3*	*4*	*2*	.	.	.	.	.	.	.	.	.	.	*18*
7½–	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	**1**	**3**	**5**	**4**	**9**	**14**	**16**	**30**	**60**	**123**	**179**	**179**	**128**	**92**	**36**	**25**	**19**	**9**	**6**	**4**	.	.	.	.	**942**
	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	*1*	*1*	.	*2*	.	*3*	*3*	*1*	*5*	*3*	.	*2*	*2*	*1*	.	*2*	.	.	.	.	.	.	*26*
7–	.	.	.	.	.	.	.	.	.	.	.	.	**2**	.	.	**1**	.	**5**	**3**	**11**	**11**	**16**	**29**	**64**	**94**	**161**	**231**	**210**	**121**	**76**	**42**	**23**	**15**	**8**	**9**	**3**	**2**	**2**	**2**	.	**1141**
	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	*1*	*1*	.	.	*2*	*2*	*4*	*3*	*9*	*6*	*6*	*3*	*1*	*1*	*1*	.	.	.	.	.	.	.	*41*
6½–	.	.	.	.	.	.	.	.	.	.	.	.	**1**	.	.	**1**	**1**	**3**	**6**	**10**	**10**	**14**	**26**	**37**	**91**	**152**	**224**	**275**	**220**	**134**	**81**	**43**	**32**	**13**	**12**	**8**	**4**	**2**	**1**	**1**	**1403**
	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	*1*	.	.	.	.	*1*	*1*	*3*	*3*	*2*	*4*	*3*	*3*	*2*	*1*	.	.	.	.	*1*	.	.	.	.	.	*25*
6–	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	**1**	**1**	**2**	**4**	**2**	**6**	**21**	**34**	**45**	**68**	**145**	**166**	**184**	**141**	**74**	**43**	**30**	**16**	**11**	**3**	**1**	**3**	**1**	.	.	**1002**
	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	*1*	.	.	.	.	.	.	*1*	.	.	*3*	*3*	*2*	*4*	*2*	.	.	.	.	.	.	.	.	.	.	*16*
5½–	.	.	.	.	.	.	.	.	.	**1**	.	.	.	.	.	**1**	**1**	**4**	**6**	**10**	**17**	**16**	**34**	**44**	**61**	**105**	**116**	**114**	**80**	**41**	**25**	**19**	**8**	**8**	**2**	**3**	**3**	.	**2**	.	**721**
	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	**2**	.	**1**	**3**	**2**	**3**	**4**	**2**	**3**	**2**	**1**	**2**	**2**	.	.	.	.	.	.	.	.	*28*
5–	.	.	.	*1*	.	.	.	.	.	.	.	.	.	.	**2**	**4**	**1**	**5**	**11**	**8**	**19**	**21**	**40**	**37**	**42**	**45**	**57**	**32**	**9**	**16**	**7**	**1**	**1**	**1**	.	.	.	.	.	**360**
	.	.	.	**1**	.	.	.	.	.	.	.	.	.	.	.	*1*	.	*1*	*1*	.	*2*	*2*	.	*5*	*1*	*1*	.	.	.	*1*	.	.	*1*	.	.	.	.	.	.	*16*
4½–	.	.	.	.	.	.	.	.	.	.	.	.	**1**	.	.	**2**	**5**	**5**	**9**	**5**	**13**	**10**	**19**	**17**	**22**	**23**	**11**	**13**	**4**	**8**	.	**3**	.	.	.	.	.	.	.	**170**
	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	*1*	.	*5*	*1*	.	*1*	*2*	*1*	*1*	*2*	.	.	.	.	*1*	*1*	.	.	.	.	.	.	.	*18*
4–	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	**1**	**3**	**5**	**11**	**5**	**6**	**8**	**7**	**13**	**4**	**9**	**6**	**5**	**3**	**2**	**3**	**1**	**2**	.	.	.	.	.	.	**99**
	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	*2*	.	.	*4*	.	.	.	.	.	*1*	*1*	.	.	.	.	.	.	.	.	.	.	.	.	.	*14*
3½	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	**6**	**4**	**1**	**3**	**8**	**2**	**3**	**4**	**7**	**2**	**4**	**4**	**1**	.	**1**	.	.	.	.	.	.	.	.	.	**60**
	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	*3*	*2*	*2*	.	*1*	*3*	.	*1*	.	.	*1*	.	.	.	.	.	.	.	.	.	.	.	.	.	*20*
3–	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	**5**	**3**	**4**	**4**	**2**	**7**	**3**	**1**	.	.	**1**	.	**1**	.	.	.	.	.	.	.	.	.	.	.	**46**
	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	*4*	*1*	*2*	*2*	*1*	*4*	*3*	.	*1*	.	*1*	.	.	.	.	.	.	.	.	.	.	.	.	.	*29*
2½–	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	**6**	**2**	**3**	**3**	**2**	.	**4**	**4**	.	**1**	**1**	.	.	.	.	.	.	.	.	.	.	.	.	.	**39**
	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	*2*	*1*	.	.	.	*1*	*1*	.	.	.	.	*1*	.	.	.	.	.	.	.	.	.	.	.	.	.	*13*
2–	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	**3**	**1**	**1**	.	**1**	**1**	**1**	.	.	.	.	**1**	.	.	.	.	.	.	.	.	.	.	.	.	.	**15**
	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	*2*	.	*1*	*1*	.	*1*	.	.	.	.	.	*1*	.	.	.	.	.	.	.	.	.	.	.	.	.	*19*
1½–	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	**2**	.	**1**	.	.	**1**	.	.	.	.	.	**1**	.	.	.	.	.	.	.	.	.	.	.	.	.	**20**
	.	.	.	.	.	*2*	*1*	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	*1*	.	.	.	.	.	.	.	*8*
1–	.	.	.	.	.	**2**	**1**	.	.	.	.	.	.	.	.	**1**	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	**1**	.	.	.	.	.	.	.	**8**
	1	.	*2*	.	.	*1*	.	*1*	.	.	*1*	*3*	.	.	.	*1*	*1*	.	.	.	.	.	.	.	.	.	.	.	*1*	.	.	.	.	.	.	.	.	.	.	*13*
	1	.	**2**	.	.	**1**	.	**1**	.	**1**	**3**	.	**1**	.	.	**1**	.	.	.	.	.	.	.	.	.	.	.	**1**	.	.	.	.	.	.	.	.	.	.	.	**13**
Total	*1*	.	*2*	*1*	.	*3*	*6*	*4*	*2*	*7*	*9*	*12*	*7*	*17*	*10*	*9*	*6*	*12*	*9*	*13*	*15*	*11*	*20*	*19*	*24*	*34*	*24*	*18*	*16*	*12*	*4*	*7*	*1*	*3*	*2*	.	.	.	.	*340*
	1	.	**2**	**1**	.	**3**	**6**	**5**	**2**	**8**	**12**	**15**	**15**	**31**	**29**	**34**	**49**	**75**	**80**	**132**	**188**	**258**	**408**	**687**	**982**	**1249**	**1071**	**679**	**433**	**231**	**137**	**87**	**49**	**36**	**23**	**7**	**6**	**3**	**3**	**7037**

TABLE 1 (i)

* E.g. Group 7– indicates $6\frac{15\frac{3}{4}}{16}$ to $7\frac{7\frac{3}{4}}{16}$ lb.

Using origin $x=282$ days, with grouping 15 days (275–, 280–, and 285–) etc.; for 6697 survivors, $m_x=-0{\cdot}086158$, $v_{xx}=0{\cdot}753006$; for 340 non-survivors, $M_x=-1{\cdot}529412$, $V_{xx}=5{\cdot}020703$
and $y=6{\cdot}9844$ lb. with grouping 1 lb. ($6\frac{1}{2}$– with 7–) etc. $m_y=\ 0{\cdot}365686$, $v_{yy}=1{\cdot}377846$ $M_y=-1{\cdot}341176$, $V_{yy}=5{\cdot}918894$
$v_{xy}=0{\cdot}424668$ $V_{xy}=4{\cdot}169378$

Table 1 (ii). *Birth weight and gestation time (females)*

Birth weight (lb.)*	Gestation time (days)																																					Total
	160–	165–	170–	175–	180–	185–	190–	195–	200–	205–	210–	215–	220–	225–	230–	235–	240–	245–	250–	255–	260–	265–	270–	275–	280–	285–	290–	295–	300–	305–	310–	315–	320–	325–	330–	335–	340–	345–	350–	355–	
13–	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	1	.	.	.	.	.	.	.	.	.	.	.	.	.	1
12½	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
12	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
11½–	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
11–	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	2	.	.	2	.	.	.	.	.	.	.	.	.	4
10½–	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	1	.	.	.	.	.	.	.	.	.	.	.	.	.	.	1
10–	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	2	1	2	3	3	.	4	1	.	.	.	.	.	.	.	.	.	.	16
9½–	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	2	.	3	5	2	7	5	4	1	1	.	.	.	.	.	.	.	.	1	33
9–	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	1	3	2	10	7	5	8	5	3	3	1	.	.	.	1	.	.	.	49
8½–	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	1	1	.	2	2	2	5	9	18	36	29	31	13	10	6	3	2	1	.	.	1	.	.	.	172
8–	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	3	3	.	.	6	9	12	38	73	56	65	40	24	10	6	6	2	1	.	.	.	1	.	355
7½–	.	.	.	.	.	.	.	.	.	.	1	.	.	.	2	3	7	4	8	9	12	21	38	97	139	147	99	62	34	16	7	6	6	4	1	1	2	.	1	.
7–	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	5	5	8	12	14	17	40	86	142	172	179	116	71	38	28	10	7	6	.	3	1	.	.	.	962
6½–	.	.	.	.	.	.	.	.	.	.	1	.	1	.	4	6	5	7	14	22	27	68	127	223	265	261	169	79	42	18	19	9	8	4	3	1	.	1	.	1383
6–	.	.	.	.	.	.	.	.	.	.	1	1	.	.	1	.	.	1	1	2	2	2	4	1	4	3	1	1	.	2	.	.	.	.	.	.	.	.	.	22
5½–	.	.	.	.	.	.	.	.	.	.	1	.	1	.	1	.	.	1	1	1	3	3	1	3	1	2	2	3	2	.	.	.	.	.	.	.	.	.	.	.	23
5–	.	.	.	.	.	.	.	.	.	.	1	.	1	.	1	.	.	1	1	1	1	2	2	1	2	1	2	2	1	.	.	.	.	.	.	.	.	.	.	.	18
4½–	.	.	.	.	.	.	.	.	.	.	1	.	2	4	.	4	4	9	14	19	44	58	115	129	157	125	72	33	15	11	5	3	2	2	1	.	.	.	.	831
4–	.	.	.	.	.	.	.	.	.	.	.	1	2	1	4	2	3	13	15	27	25	54	68	76	72	54	28	26	14	3	.	1	.	1	.	1	.	.	.	492
3½–	.	.	.	.	.	.	.	.	.	.	.	2	3	2	3	1	4	7	11	16	15	34	23	21	25	16	7	4	3	2	.	2	.	.	.	1	.	.	.	202
3–	.	.	.	.	.	.	.	.	.	1	.	2	3	2	3	4	4	5	10	10	11	6	10	10	9	6	1	1	1	.	.	.	.	.	.	.	.	.	.	97
2½–	.	.	.	.	.	.	.	.	.	1	1	1	2	1	2	1	.	2	3	6	4	6	6	3	3	4	3	.	.	.	1	.	.	.	.	.	.	.	.	55
2–	.	.	.	.	.	.	.	.	.	1	1	1	3	3	2	2	3	3	6	4	6	6	3	3	4	3	.	.	.	.	.	.	.	1	.	.	.	.	.	41
1½–	.	.	.	.	.	.	.	.	.	.	2	1	3	1	6	3	4	1	2	3	2	4	.	2	1	3	.	.	.	.	.	.	.	.	.	.	.	.	.	330
1–	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	5
Total	2	.	1	2	2	4	3	4	2	7	3	5	8	8	9	7	12	18	14	11	13	15	16	18	19	22	10	19	10	6	.	.	2	2	.	.	.	.	.	1	274
	2	.	1	2	2	4	3	4	4	8	10	12	23	18	31	45	50	78	113	146	208	367	635	966	1221	1070	735	408	216	125	66	43	30	18	13	9	2	2	2	1	6693

* E.g. Group 7– indicates $6\frac{15\frac{1}{2}}{16}$ to $7\frac{7\frac{1}{2}}{16}$ lb.

Using origin $x=282$ days, with grouping 15 days (275–, 280–, and 285–) etc.; for 6419 survivors, $m_x=-0{\cdot}033027$, $v_{xx}=0{\cdot}674936$; for 274 non-survivors, $M_x=-1{\cdot}503650$, $V_{xx}=4{\cdot}519450$
and $y=6{\cdot}9844$ lb. with grouping 1 lb. ($6\frac{1}{2}$– with 7–) etc. $m_y=\ 0{\cdot}147842$, $v_{yy}=1{\cdot}209954$ $M_y=-1{\cdot}700730$, $V_{yy}=4{\cdot}830145$
$v_{xy}=0{\cdot}341072$ $V_{xy}=3{\cdot}497442$

Table 2 (i). *Birth weight and mother's age (males)*

Birth weight (lb.)*	Mother's age (years)																Total
	16–	18–	20–	22–	24–	26–	28–	30–	32–	34–	36–	38–	40–	42–	44–	46–	
13–13½	.	.	.	.	.	.	.	.	.	.	.	.	*1*	.	.	.	*1*
	.	.	.	.	.	.	.	.	.	.	.	.	1	.	.	.	1
12½–	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
12–	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
11½–	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
	.	.	.	.	.	.	.	.	2	.	.	.	.	.	.	.	2
11–	.	*1*	.	.	.	.	.	*1*	.	.	.	.	.	.	.	.	*2*
	.	1	1	.	3	1	3	2	.	.	2	1	1	.	.	.	15
10½	.	.	.	*1*	.	*1*	.	.	.	.	.	.	.	.	.	.	*2*
	.	.	.	3	3	4	3	4	2	2	.	1	2	.	1	.	25
10–	.	.	.	*1*	.	.	*3*	*1*	.	.	.	.	.	.	*1*	.	*6*
	.	.	3	6	11	4	8	11	5	3	3	3	4	1	1	.	63
9½–	.	.	.	*1*	.	.	.	.	*3*	.	.	.	.	*1*	.	.	*5*
	1	4	11	15	17	14	16	12	16	6	7	7	2	2	2	.	132
9–	.	.	.	*1*	*1*	*1*	.	*1*	.	.	.	.	.	.	.	.	*4*
	2	10	17	31	28	37	31	33	29	26	24	17	9	4	3	.	301
8½–	.	.	*1*	*1*	*3*	*2*	.	*2*	*4*	*1*	.	.	*1*	*1*	.	.	*16*
	1	10	42	53	72	64	60	38	43	30	17	14	8	4	3	.	459
8–	.	*1*	*1*	*1*	*3*	*3*	*1*	.	*4*	*1*	.	*1*	*1*	*1*	.	.	*18*
	3	38	77	142	130	133	126	88	68	46	30	35	17	8	1	.	942
7½–	.	*1*	*3*	*2*	*4*	*1*	*4*	*3*	*3*	*2*	*1*	*2*	.	.	.	.	*26*
	7	54	92	146	167	149	148	112	88	61	54	32	23	8	.	.	1141
7–	.	.	*2*	*6*	*6*	*4*	*8*	*2*	*2*	*2*	*6*	*1*	*2*	.	.	.	*41*
	2	62	129	192	217	211	173	121	107	74	56	31	20	6	2	.	1403
6½–	.	*3*	*2*	*5*	*3*	*1*	*1*	*1*	*2*	*1*	.	*4*	.	*2*	.	.	*25*
	4	37	100	136	150	132	114	97	90	47	38	30	13	13	.	1	1002
6–	.	*1*	*2*	*2*	*2*	*2*	*3*	*1*	*1*	.	*2*	.	.	.	.	.	*16*
	2	31	63	98	108	83	97	73	53	44	34	19	10	3	3	.	721
5½–	.	*2*	*1*	*1*	*4*	*3*	*4*	*4*	*3*	*2*	*1*	.	*1*	*1*	.	*1*	*28*
	2	15	26	43	65	46	43	28	27	20	19	7	11	5	1	2	360
5–	.	.	*2*	.	*1*	*5*	*1*	*2*	*1*	*2*	*1*	.	*1*	.	.	.	*16*
	1	4	16	22	26	26	15	12	21	12	5	4	4	2	.	.	170
4½–	.	*1*	.	.	*1*	*2*	*2*	*2*	*4*	*2*	*2*	*2*	.	.	.	.	*18*
	.	5	12	10	6	13	7	14	13	8	4	5	1	.	1	.	99
4–	.	.	.	*2*	.	*3*	*3*	*2*	*1*	*1*	.	*2*	.	.	.	.	*14*
	.	4	1	8	4	11	10	8	3	3	2	6	.	.	.	.	60
3½–	.	*1*	*3*	*1*	*3*	*3*	.	*3*	*1*	*2*	*1*	*2*	.	.	.	.	*20*
	.	1	4	2	6	5	5	7	3	8	2	2	.	1	.	.	46
3–	*1*	.	*6*	*1*	*2*	*2*	*5*	*4*	*3*	*1*	*1*	*2*	*1*	.	.	.	*29*
	1	1	7	2	5	2	7	5	3	1	2	2	1	.	.	.	39
2½–	.	*2*	.	*1*	*1*	*3*	.	.	*3*	*2*	.	.	*1*	.	.	.	*13*
	.	2	.	1	3	3	.	.	3	2	.	.	1	.	.	.	15
2–	.	*3*	.	*2*	*4*	*3*	*1*	*1*	*2*	*1*	*2*	.	.	.	.	.	*19*
	.	3	.	2	4	3	1	2	2	1	2	.	.	.	.	.	20
1½–	.	*1*	.	.	.	*2*	.	*2*	.	*1*	.	*2*	.	.	.	.	*8*
	.	1	.	.	.	2	.	2	.	1	.	2	.	.	.	.	8
1–	.	*1*	*2*	*2*	*2*	.	*1*	.	.	*1*	*3*	.	*1*	.	.	.	*13*
	.	1	2	2	2	.	1	.	.	1	3	.	1	.	.	.	13
Total	*1*	*18*	*25*	*31*	*40*	*41*	*37*	*32*	*37*	*22*	*20*	*18*	*10*	*6*	*1*	*1*	*340*
	26	284	603	914	1027	943	868	669	578	396	304	218	129	57	18	3	7037

* E.g. Group 7– indicates $6\frac{15\frac{3}{4}}{16}$ to $7\frac{7\frac{3}{4}}{16}$ lb.

Table 2 (ii). *Birth weight and mother's age (females)*

Birth weight (lb.)*	Mother's age (years)																		Total
	14–	16–	18–	20–	22–	24–	26–	28–	30–	32–	34–	36–	38–	40–	42–	44–	46–	48–	
13–	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
	.	.	.	.	.	.	.	.	.	.	.	.	.	.	1	.	.	.	1
12½	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
12–	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
11½	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
11–	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
	.	.	.	.	.	.	.	1	.	.	.	3	.	.	.	.	.	.	4
10½	.	.	.	.	.	.	.	*1*	.	.	.	.	.	.	.	.	.	.	*1*
	.	.	1	.	1	1	3	2	2	1	2	2	1	.	.	.	.	.	16
10–	.	.	.	.	.	.	.	*1*	.	.	.	.	.	.	.	.	.	.	*1*
	.	.	.	1	3	1	6	4	4	4	1	2	4	2	1	.	.	.	33
9½	.	.	.	.	.	*1*	.	.	.	.	.	.	.	.	.	.	.	.	*1*
	.	.	.	.	5	2	7	7	6	7	3	4	3	3	.	2	.	.	49
9–	.	.	.	.	*1*	*1*	*1*	*1*	*2*	*2*	*1*	.	.	.	.	.	.	.	*9*
	.	1	4	12	15	23	14	24	25	10	12	9	10	8	3	.	2	.	172
8½–	.	.	*1*	*3*	.	.	.	*1*	*2*	.	*1*	.	.	.	.	.	.	.	*8*
	.	1	11	28	43	35	55	47	37	38	18	20	8	7	4	2	.	1	355
8–	.	.	.	.	*1*	*1*	.	*4*	.	*2*	*1*	.	.	.	.	.	.	.	*9*
	.	4	22	63	97	99	81	98	72	70	46	25	27	10	9	3	1	.	727
7½–	.	.	*1*	.	*2*	*3*	*3*	*2*	.	*2*	*1*	*1*	*1*	.	.	.	.	.	*16*
	.	5	29	67	141	137	145	112	86	73	75	25	32	19	10	5	1	.	962
7–	.	.	.	*3*	*3*	*7*	*1*	.	.	*5*	*3*	*2*	*1*	*2*	.	.	.	.	*27*
	.	7	47	134	207	203	192	155	128	107	61	51	45	28	12	2	4	.	1383
6½–	.	.	.	*2*	*5*	*3*	*3*	*3*	*3*	*2*	.	.	*1*	.	.	.	.	.	*22*
	1	5	33	129	178	175	151	149	104	92	64	40	34	19	10	2	1	.	1187
6–	.	.	.	*1*	.	*5*	*4*	*3*	*2*	*2*	*2*	*2*	*1*	.	*1*	.	.	.	*23*
	.	4	20	95	128	93	110	92	90	75	44	34	18	11	11	6	.	.	831
5½–	.	.	*1*	.	*1*	*1*	*3*	.	*3*	*2*	*2*	*3*	*1*	*1*	.	.	.	.	*18*
	.	.	18	41	72	73	65	62	42	36	22	27	19	9	5	2	.	.	493
5–	.	.	*1*	*1*	*3*	*2*	*1*	*2*	.	*1*	.	.	.	.	.	.	.	.	*11*
	.	2	8	23	29	21	25	24	20	23	7	7	7	4	1	.	.	1	202
4½–	.	.	.	*3*	*1*	*1*	*4*	*1*	*4*	*1*	*3*	.	*2*	*1*	*1*	.	.	.	*22*
	.	1	5	10	15	10	12	12	11	4	5	3	3	4	2	.	.	.	97
4–	.	*1*	.	*4*	*3*	*1*	*2*	*2*	*3*	.	*1*	*1*	.	*1*	.	.	.	.	*19*
	.	1	1	5	8	4	9	4	9	4	4	2	2	2	.	.	.	.	55
3½–	.	.	.	.	*2*	*2*	*1*	*3*	.	*4*	*1*	*3*	*1*	*1*	.	.	.	.	*18*
	.	.	.	3	3	6	3	4	2	6	4	4	1	3	1	1	.	.	41
3–	.	.	*1*	*1*	*1*	*1*	.	*1*	*4*	*2*	*4*	*1*	*2*	.	.	.	.	.	*18*
	.	.	3	2	2	1	1	4	8	2	4	1	2	.	.	.	.	.	30
2½–	.	.	.	*1*	.	*3*	*1*	*2*	*1*	*1*	*1*	*4*	*1*	.	.	.	.	.	*15*
	.	.	.	1	.	3	1	4	1	1	1	4	1	1	.	.	.	.	18
2–	.	.	.	*1*	*4*	*1*	*4*	*3*	.	*3*	*3*	*2*	.	.	.	.	.	.	*21*
	.	.	.	1	4	1	4	3	.	3	3	3	.	.	.	.	.	.	22
1½–	.	.	.	.	*1*	.	*1*	*2*	*2*	*1*	*1*	*2*	.	.	.	.	.	.	*10*
	.	.	.	.	1	.	1	2	2	1	1	2	.	.	.	.	.	.	10
1–	.	.	.	.	*1*	*2*	.	*1*	.	*1*	.	.	.	.	.	.	.	.	*5*
	.	.	.	.	1	2	.	1	.	1	.	.	.	.	.	.	.	.	5
Total	.	*1*	*5*	*20*	*29*	*35*	*29*	*33*	*26*	*31*	*25*	*21*	*11*	*6*	*2*	.	.	.	*274*
	1	31	202	615	953	890	885	811	649	558	377	268	217	130	70	25	9	2	6693

* E.g. Group 7– indicates $6\frac{15\frac{3}{4}}{16}$ to $7\frac{7\frac{3}{4}}{16}$ lb.

Table 3 (i). *Birth weight and parity (males)*

Parity	Birth weight (lb.)*																									Total	
	1–	1½–	2–	2½–	3–	3½–	4–	4½–	5–	5½–	6–	6½–	7–	7½–	8–	8½–	9–	9½–	10–	10½–	11–	11½–	12–	12½–	13–		
19	.	.	.	.	.	*1*	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	*1*	
	.	.	.	.	.	1	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	1
18	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	
	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
17	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	
16	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	
15	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	
	.	.	.	.	.	.	.	.	.	.	.	.	1	.	.	.	.	.	.	.	.	.	.	.	.	.	1
14	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	
	.	.	.	.	.	.	.	1	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	1
13	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	
	.	.	.	.	.	1	.	.	.	.	.	.	.	.	3	.	.	.	.	.	.	.	.	.	.	.	4
12	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	1	.	.	.	.	.	.	*1*	
	.	.	.	.	.	.	.	.	.	.	.	.	1	1	.	.	1	.	1	.	.	.	.	.	.	.	4
11	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	
	.	.	.	.	.	.	.	1	.	1	1	.	1	2	3	1	2	1	2	.	.	.	.	.	.	.	15
10	.	.	.	.	.	.	.	.	.	.	.	.	*1*	.	*1*	.	.	.	.	.	.	.	.	.	.	*2*	
	.	.	.	.	.	.	.	.	.	.	.	.	2	1	5	1	6	.	1	.	1	.	.	.	.	.	17
9	.	.	.	.	.	.	.	.	.	1	.	.	.	1	.	.	.	.	.	.	.	.	.	.	1	*3*	
	.	.	.	.	.	.	.	.	.	2	2	1	2	4	3	1	1	.	.	1	.	.	.	.	1	.	18
8	.	.	.	1	.	.	.	.	.	.	.	1	1	.	.	.	.	.	.	.	.	.	.	.	.	*3*	
	.	.	.	1	.	.	.	.	.	2	2	4	5	7	6	2	3	3	4	1	.	.	.	.	.	.	40
7	.	.	.	.	1	.	.	.	.	.	.	1	.	.	.	.	.	1	.	.	.	.	.	.	.	*3*	
	.	.	.	.	1	.	.	.	.	3	4	3	6	4	10	5	9	3	3	.	.	.	.	.	.	.	51
6	.	.	1	.	1	.	.	.	.	.	.	.	.	.	.	.	.	1	.	.	.	.	.	.	.	*3*	
	.	.	1	.	1	.	.	.	1	5	2	6	11	13	6	10	7	4	1	1	.	1	.	.	.	.	70
5	1	.	.	.	.	.	.	.	1	1	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	*3*	
	1	.	.	.	.	1	.	1	2	2	8	6	22	17	19	8	11	2	1	3	2	.	.	.	.	.	106
4	1	1	1	.	.	1	.	.	.	1	.	.	.	.	1	.	.	.	.	.	.	.	.	.	.	6	
	1	1	1	.	1	2	2	4	2	3	12	13	28	26	27	10	17	9	6	2	1	.	.	.	.	.	168
3	.	.	.	3	.	1	1	3	1	.	.	1	1	1	.	2	.	.	.	.	.	.	.	.	.	14	
	.	.	.	3	1	4	4	6	8	8	25	24	40	48	30	21	31	11	5	2	.	.	.	.	.	.	271
2	4	.	3	4	3	2	1	3	1	2	.	1	4	1	1	1	.	.	.	.	.	.	.	.	.	31	
	4	.	4	4	4	4	5	7	10	21	37	60	109	98	92	48	32	19	12	4	4	1	.	.	.	.	579
1	2	3	3	1	6	4	4	5	2	4	3	6	2	3	2	6	2	1	1	.	.	.	.	.	.	60	
	2	3	3	2	8	7	11	14	29	68	121	184	275	209	216	104	59	34	11	5	2	.	.	.	.	.	1367
0	5	4	11	4	18	11	8	7	11	19	13	15	32	20	13	7	2	2	4	2	2	.	.	.	.	210	
	5	4	11	5	23	26	38	65	118	245	507	701	900	711	522	248	122	46	16	6	5	.	.	.	.	.	4324
Total	13	8	19	13	29	20	14	18	16	28	16	25	41	26	18	16	4	5	6	2	2	.	.	.	1	340	
	13	8	20	15	39	46	60	99	170	360	721	1002	1403	1141	942	459	301	132	63	25	15	2	.	.	1		7037

* E.g. Group 7– indicates $6\frac{15\frac{3}{4}}{16}$ to $7\frac{7\frac{3}{4}}{16}$ lb.

Table 3 (ii). *Birth weight and parity (females)*

Parity	Birth weight (lb.)*																								Total
	1–	1½–	2–	2½–	3–	3½–	4–	4½–	5–	5½–	6–	6½–	7–	7½–	8–	8½–	9–	9½–	10–	10½–	11–	11½–	12–	12½–	13–	
15	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
	.	.	.	.	.	.	.	.	.	.	.	.	.	.	1	.	.	.	.	.	.	.	.	.	.	1
14	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
	.	.	.	.	.	.	.	.	.	.	.	.	.	.	1	1	.	.	.	.	.	.	.	.	.	2
13	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
	.	.	.	.	.	.	.	.	.	.	.	.	1	.	.	.	.	.	.	.	.	.	.	.	.	1
12	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
	.	.	.	.	.	.	.	.	.	.	.	.	1	1	.	1	1	.	.	.	.	.	.	.	.	4
11	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
	.	.	.	.	.	.	.	.	.	.	1	2	3	1	4	2	1	1	.	.	.	.	.	.	.	15
10	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
	.	.	.	.	.	.	.	.	.	.	4	1	.	1	.	1	.	1	.	.	.	.	.	.	1	9
9	.	.	.	.	.	.	.	1	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	1
	.	.	.	.	.	.	.	1	.	.	.	1	2	4	4	1	.	2	1	.	.	.	.	.	.	16
8	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
	.	.	.	.	.	.	1	1	.	2	2	2	12	2	6	3	4	3	.	.	.	.	.	.	.	38
7	.	.	1	.	.	.	1	.	.	.	1	.	.	.	.	.	.	.	.	.	.	.	.	.	.	3
	.	.	1	.	.	.	1	1	2	3	4	7	8	8	9	4	6	2	2	.	.	.	.	.	.	58
6	.	.	.	.	.	.	.	.	.	.	1	1	.	.	.	.	.	.	.	.	.	.	.	.	.	2
	.	.	.	.	.	1	.	.	1	4	7	8	9	15	9	9	3	2	3	1	1	.	.	.	.	73
5	.	.	1	1	.	1	.	2	.	1	.	.	1	.	.	.	.	.	.	.	.	.	.	.	.	7
	.	.	1	1	.	1	.	3	2	6	6	19	35	25	18	6	5	3	2	.	.	.	.	.	.	133
4	.	1	1	.	.	2	.	1	.	2	.	.	.	.	.	.	1	.	.	.	.	.	.	.	.	8
	.	1	1	.	.	3	1	2	5	7	17	13	25	25	26	20	9	4	2	2	1	.	.	.	.	164
3	.	.	1	1	1	.	1	3	.	1	1	2	1	.	.	.	1	.	.	.	.	.	.	.	.	13
	.	.	1	1	1	1	1	6	7	14	34	49	60	44	46	23	15	4	5	2	.	.	.	.	.	314
2	.	.	1	2	3	1	1	2	1	.	2	4	3	1	1	.	2	.	.	.	.	.	.	.	.	24
	.	.	1	2	4	4	5	5	16	26	47	61	92	84	67	30	28	9	6	3	.	.	.	.	.	490
1	1	4	4	4	6	3	7	6	2	4	4	1	4	5	1	2	3	.	.	1	.	.	.	.	.	62
	1	4	4	4	11	7	12	16	28	97	128	219	258	204	150	83	39	8	8	6	1	.	.	.	.	1288
0	4	5	12	7	8	11	9	7	8	10	14	14	18	10	7	6	2	1	1	.	.	.	.	.	.	154
	4	5	13	10	14	24	34	62	141	334	581	805	877	548	386	171	61	10	4	2	1	.	.	.	.	4087
Total	5	10	21	15	18	18	19	22	11	18	23	22	27	16	9	8	9	1	1	1	.	.	.	.	.	274
	5	10	22	18	30	41	55	97	202	493	831	1187	1383	962	727	355	172	49	33	16	4	.	.	.	1	6693

* E.g. Group 7– indicates $6\frac{15\frac{3}{4}}{16}$ to $7\frac{7\frac{3}{4}}{16}$ lb.

Table 4 (i). *Gestation time and mother's age (males)*

Mother's age (years)	Gestation time (days)																																							Total
	155–	160–	165–	170–	175–	180–	185–	190–	195–	200–	205–	210–	215–	220–	225–	230–	235–	240–	245–	250–	255–	260–	265–	270–	275–	280–	285–	290–	295–	300–	305–	310–	315–	320–	325–	330–	335–	340–	345–	
46–	.	.	.	*1*	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	*1*
	.	.	.	1	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	1	.	.	1	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	3
44–	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	*1*
	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	2	.	.	.	1	.	1	3	3	4	2	.	1	.	.	1	.	.	.	.	.	.	.	.	18
42–	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	1	2	.	.	.	.	.	.	.	.	.	.	.	.	.	*6*
	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	1	.	.	4	6	2	.	7	8	7	8	2	4	2	.	2	1	2	.	.	.	.	.	.	57
40–	.	.	*1*	.	.	.	.	.	.	.	.	.	*1*	.	.	.	.	.	.	.	.	.	*1*	*1*	2	*1*	*1*	*1*	.	*1*	.	*1*	.	.	.	.	.	.	.	.	*10*
	.	.	1	.	.	.	.	.	.	.	.	.	1	.	.	.	3	.	1	4	4	3	5	19	18	20	16	11	14	4	3	1	1	.	.	.	.	.	.	.	129
38–	.	.	.	.	.	.	*1*	.	.	.	*1*	*2*	*1*	.	*1*	.	.	.	*2*	*1*	*3*	.	*1*	*1*	*2*	*1*	.	*1*	.	.	.	.	.	.	.	.	.	.	.	.	*18*
	.	.	.	.	.	.	1	.	.	.	1	2	2	.	4	1	1	2	4	7	10	7	12	19	34	37	23	25	11	7	4	1	2	.	.	.	1	.	.	.	218
36–	*1*	.	.	.	.	.	.	.	.	*1*	.	.	.	*1*	*2*	*1*	.	*2*	*1*	*1*	.	*2*	.	*2*	*3*	.	*3*	.	*3*	*1*	.	.	.	.	.	.	.	.	.	.	*20*
	1	.	.	.	.	.	.	.	.	1	.	.	1	1	2	3	2	7	6	4	12	14	22	29	40	51	40	37	13	6	5	3	2	.	1	.	1	.	.	.	304
34–	.	.	.	.	.	.	*2*	.	.	*1*	*1*	.	.	*3*	*1*	*2*	*1*	*1*	*1*	.	.	*1*	*1*	*1*	.	.	*2*	.	*1*	*1*	.	*1*	.	.	.	*1*	.	.	.	*22*
	.	.	.	.	.	.	2	.	.	1	1	.	.	2	5	2	3	3	8	5	9	10	15	31	42	62	54	52	40	22	8	9	7	1	.	2	.	.	.	.	396
32–	.	.	.	.	.	.	.	*1*	*1*	*1*	.	*1*	.	.	.	*1*	*1*	*2*	*3*	.	*3*	.	*1*	*4*	.	*3*	*8*	*1*	*1*	*2*	*2*	.	.	*1*	.	.	.	.	.	.	*37*
	.	.	.	.	.	.	.	1	1	1	.	1	.	.	.	1	1	2	3	.	3	.	1	4	.	3	8	1	1	2	2	.	.	1	.	.	.	.	.	.	396
30–	.	.	.	.	.	.	.	.	.	.	.	1	1	1	3	2	.	1	2	.	2	3	.	.	.	.	3	2	3	.	1	2	3	.	1	.	.	.	.	2	*32*
	.	.	.	.	.	.	.	.	.	.	.	1	1	1	4	3	2	3	7	9	8	21	25	37	59	108	118	103	62	41	18	12	12	6	7	.	1	.	.	.	669
28–	.	.	.	.	.	.	.	1	.	1	1	1	1	1	3	.	1	.	.	1	3	1	1	4	2	5	2	3	2	.	1	1	.	1	1	.	.	.	.	*37*
	.	.	.	.	.	.	.	1	.	2	1	1	1	1	3	.	1	.	.	.	1	.	.	7	2	4	1	2	3	.	.	.	.	.	.	.	.	.	.	.	868
26–	.	.	.	.	.	1	3	.	.	.	.	3	1	4	.	.	1	.	.	.	2	.	.	.	4	4	1	2	2	3	.	.	.	.	.	.	.	.	.	.	*41*
	.	.	.	.	.	1	3	.	.	.	.	.	2	.	2	1	1	2	5	6	3	19	18	31	55	91	130	191	153	95	54	25	22	9	5	6	2	1	.	1	943
24–	.	.	1	.	.	.	.	.	.	1	1	1	1	.	2	1	1	2	.	.	3	3	1	3	4	1	8	1	2	2	.	.	.	.	.	.	.	.	.	*40*
	.	.	1	.	.	.	.	.	.	1	.	1	1	.	2	1	1	2	.	.	3	3	1	3	4	1	8	1	2	2	.	.	.	.	.	.	.	.	.	.	1027
22–	.	.	1	.	.	.	.	.	.	1	.	1	1	.	1	2	.	.	.	.	4	3	.	1	1	2	3	5	2	.	.	.	.	.	.	.	.	.	.	.	*31*
	.	.	1	.	.	.	.	.	.	1	.	1	1	.	1	3	3	4	10	13	19	25	36	70	63	128	159	145	101	55	28	17	10	8	6	6	.	.	.	1	914
20–	.	.	.	.	.	1	.	.	.	.	1	2	2	.	.	.	1	1	.	1	.	.	.	2	2	3	3	1	1	2	1	.	.	.	.	.	.	.	.	.	*25*
	.	.	.	.	.	1	.	1	.	1	2	2	4	.	2	3	4	5	4	11	11	12	12	37	60	77	120	79	56	43	27	8	10	6	.	2	1	2	2	.	603
18–	.	.	.	.	.	1	.	.	.	2	1	.	2	.	.	.	.	.	1	1	1	.	2	1	2	.	2	.	1	1	.	.	.	.	.	.	.	.	.	.	*18*
	.	.	.	.	.	1	.	.	.	2	1	1	.	.	.	.	.	.	.	1	1	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	284
16–	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	1	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	*1*
	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	26
Total	*1*	.	*2*	*1*	.	*3*	*6*	*4*	*2*	*7*	*9*	*12*	*7*	*17*	*10*	*9*	*6*	*12*	*9*	*13*	*15*	*11*	*20*	*19*	*24*	*34*	*24*	*18*	*16*	*12*	*4*	*7*	*1*	*3*	*2*	.	.	.	.	*340*
	1	.	2	1	.	3	6	5	2	8	12	15	15	31	29	34	49	75	80	132	188	258	408	687	982	1249	1071	679	433	231	137	87	49	36	23	7	6	3	3	7037

Table 4 (ii). *Gestation time and mother's age (females)*

Mother's age (years)	Gestation time (days)																																							Total
	160–	165–	170–	175–	180–	185–	190–	195–	200–	205–	210–	215–	220–	225–	230–	235–	240–	245–	250–	255–	260–	265–	270–	275–	280–	285–	290–	295–	300–	305–	310–	315–	320–	325–	330–	335–	340–	345–	350–	355–	
48–	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	1	.	.	.	.	.	.	1	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	*2*
46–	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
	.	.	.	.	.	.	.	.	.	1	.	.	.	.	.	.	.	.	.	1	1	1	.	.	1	.	1	.	1	.	1	1	.	.	.	.	.	.	.	.	.	*9*
44–	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	2	1	1	4	2	6	2	3	2	1	.	1	.	.	.	.	.	.	.	.	.	.	*25*
42–	.	.	.	.	.	.	.	.	.	.	.	1	.	.	.	.	.	1	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	*2*
	.	.	.	.	.	.	.	.	.	.	.	1	.	.	1	.	.	5	3	.	3	10	7	11	10	8	3	3	1	4	.	.	.	.	.	.	.	.	.	.	.	*70*
40–	.	.	.	.	.	.	.	.	.	.	.	.	.	1	1	.	.	.	.	.	1	1	1	1	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	*6*
	.	.	.	.	.	.	.	.	.	.	.	.	.	1	2	3	4	1	1	4	5	10	19	21	20	13	11	8	2	2	.	2	1	.	.	.	.	.	.	.	.	*130*
38–	.	.	.	.	.	.	.	.	.	1	.	.	2	.	1	.	.	1	1	1	.	.	1	1	.	.	.	1	1	.	.	.	.	.	.	.	.	.	.	.	.	*11*
	.	.	.	.	.	.	.	.	.	1	.	.	2	.	2	1	.	4	5	2	8	10	24	39	37	29	24	10	7	4	3	1	1	.	.	.	1	1	.	.	.	*217*
36–	.	.	.	.	.	.	.	.	.	1	1	.	1	1	1	.	1	3	4	1	.	1	.	2	.	2	.	2	1	.	.	.	.	.	.	.	.	.	.	.	.	*21*
	.	.	.	.	1	1	.	.	.	1	1	.	2	1	1	1	2	6	8	7	14	18	44	29	52	34	14	16	6	5	4	.	1	.	1	.	.	.	.	.	*268*
34–	.	.	.	.	1	1	.	.	.	1	.	.	1	.	.	2	2	.	1	1	2	1	2	2	1	1	1	3	1	1	.	.	.	.	.	.	.	.	.	.	*25*
	.	.	.	.	1	1	.	.	.	1	1	.	.	.	1	2	2	4	6	10	11	21	35	55	67	50	36	32	15	10	2	3	2	.	.	.	.	.	.	.	*377*
32–	*1*	.	.	*1*	.	.	*1*	*1*	*1*	.	*1*	*1*	.	*1*	*2*	.	*3*	*1*	*2*	.	*2*	.	*3*	.	*2*	*3*	*1*	*4*	.	.	.	.	*1*	.	.	.	.	.	.	*31*
	1	.	.	1	.	.	1	1	1	.	1	1	1	2	3	2	6	6	14	9	21	37	57	87	98	90	48	37	13	5	6	3	2	2	1	.	.	1	.	*558*
30–	.	.	*1*	.	*1*	*1*	.	.	.	*1*	.	*1*	*1*	.	.	1	*3*	.	*3*	*2*	*2*	.	*3*	*1*	*3*	*2*	.	*1*	*1*	.	.	.	.	.	*1*	.	.	.	.	*26*
	.	.	1	.	1	1	.	.	.	1	.	1	1	.	.	1	1	11	9	18	26	34	54	84	126	110	68	37	20	10	9	4	3	3	.	.	.	.	.	*649*
28–	.	.	.	.	.	1	.	2	.	1	.	1	1	.	2	2	1	1	.	2	1	3	2	3	2	2	.	2	1	2	.	.	1	.	.	.	.	.	.	.	*33*
	.	.	.	.	.	1	.	2	1	1	.	2	2	2	4	11	5	11	7	14	19	50	66	125	151	138	92	48	23	11	11	5	2	4	1	1	1	.	.	.	*811*
26–	.	.	.	.	.	1	.	.	.	1	1	1	2	1	.	.	2	2	1	2	1	1	1	3	2	2	4	1	.	.	.	.	.	1	.	.	.	.	.	.	*29*
	.	.	.	.	.	1	.	.	.	.	1	1	1	3	2	1	4	7	10	20	23	55	82	137	177	141	106	59	20	11	7	3	3	3	.	1	.	.	1	.	*885*
24–	.	.	.	1	.	.	1	.	.	.	.	.	2	2	.	1	1	3	3	.	1	4	1	4	2	3	1	3	3	2	.	.	.	.	.	.	.	.	.	.	*35*
	.	.	.	1	.	.	1	.	.	.	.	.	2	.	3	7	9	7	10	23	21	39	86	133	156	157	97	52	37	24	7	8	3	1	1	3	.	.	.	.	*890*
22–	*1*	.	.	.	.	.	*1*	*1*	*1*	*1*	.	.	.	*3*	.	*1*	.	*1*	*3*	.	.	*1*	*2*	*3*	*2*	*5*	*1*	*1*	.	*1*	.	.	.	.	.	.	.	.	.	.	*29*
	1	.	.	.	.	.	1	1	1	2	1	1	.	5	5	2	7	5	23	1	30	38	88	156	159	157	119	55	35	13	10	7	3	3	5	2	.	1	.	.	*953*
20–	.	.	.	.	.	.	.	.	.	1	1	.	.	1	1	.	.	1	1	1	2	.	2	.	4	1	2	1	1	.	.	.	.	.	.	.	.	.	.	.	*20*
	.	.	.	.	.	.	.	.	.	1	3	1	.	.	2	2	5	6	11	11	18	33	54	62	122	102	84	37	24	17	3	4	6	1	3	1	.	.	1	.	*615*
18–	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	1	.	.	1	1	.	.	.	1	.	.	1	.	.	.	.	.	.	.	.	.	.	.	*5*
	.	.	.	.	.	.	.	.	1	.	.	.	3	1	3	2	.	4	6	6	7	6	10	23	36	34	26	11	9	8	1	1	2	1	1	.	.	.	.	.	*202*
16[1]	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	1	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	*1*
	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	1	.	1	.	2	.	4	4	2	3	5	3	1	2	.	1	1	1	.	.	.	.	.	.	.	*31*
14–	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	1	.	.	.	.	.	.	.	.	.	.	*1*
	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	1
Total	*2*	.	*1*	*2*	*2*	*4*	*3*	*4*	*2*	*7*	*3*	*5*	*8*	*8*	*9*	*7*	*12*	*18*	*14*	*11*	*13*	*15*	*16*	*18*	*19*	*22*	*10*	*19*	*10*	*6*	.	.	*2*	*2*	.	.	.	.	.	.	*274*
	2	.	1	2	2	4	3	4	4	8	10	12	23	18	31	45	50	78	113	146	208	367	635	966	1221	1070	735	408	216	125	66	43	30	18	13	9	2	2	2	1	6693

Table 5 (i). *Gestation time and parity (males)*

Parity	Gestation time (days)																																					Total
	155–	160–	165–	170–	175–	180–	185–	190–	195–	200–	205–	210–	215–	220–	225–	230–	235–	240–	245–	250–	255–	260–	265–	270–	275–	280–	285–	290–	295–	300–	305–	310–	315–	320–	325–	330–	335–	340–	345–	
19	.	.	.	.	.	.	.	.	.	.	.	.	1	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	1
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8	.	.	.	1	.	.	.	.	.	.	.	.	1	.	.	.	1	2	.	1	2	.	.	.	3	1	2	1	2	1	1	.	.	.	.	.	.	.	.	18
	.	.	.	.	.	.	.	.	.	.	.	.	1	.	.	.	.	.	.	.	.	.	.	.	.	.	1	1	.	.	.	.	.	.	.	.	.	.	.	3
7	.	.	.	.	.	.	.	.	.	.	.	.	1	.	1	1	.	.	1	.	3	1	.	.	4	7	7	7	1	2	2	.	2	1	.	.	.	.	.	40
	.	.	.	.	.	.	.	.	.	.	.	.	.	1	.	.	.	.	.	.	.	.	.	.	1	.	.	.	.	.	1	.	.	.	.	.	.	.	.	3
6	.	.	.	.	.	.	.	1	.	.	.	.	.	1	1	.	.	.	.	.	1	2	2	4	5	7	7	9	6	1	1	3	1	.	.	.	.	.	.	51
	.	.	.	.	.	.	.	1	.	.	.	.	.	.	1	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	1	.	.	.	.	.	3
5	.	.	.	.	.	.	.	.	.	.	1	.	.	.	.	.	1	1	3	2	6	1	3	12	7	5	9	6	3	1	2	1	2	3	.	.	.	.	.	70
	.	.	.	.	.	.	.	.	.	.	1	.	.	.	.	.	.	.	.	1	.	.	.	.	.	.	.	.	1	.	.	.	.	.	.	.	.	.	.	3
4	.	.	.	.	.	.	1	.	.	1	.	.	.	1	.	2	2	1	2	2	4	2	11	13	11	21	12	6	7	3	1	1	1	1	1	1	.	.	.	106
	.	.	.	.	.	.	.	.	.	.	.	.	.	.	1	.	.	.	.	.	.	.	1	.	1	.	.	.	.	.	1	.	.	.	.	.	.	.	.	.	6
3	.	.	.	.	.	.	1	.	.	1	1	.	1	.	.	3	1	2	4	2	7	3	7	14	30	23	19	16	9	6	8	1	1	4	.	.	.	.	1	168
	.	.	.	.	.	.	1	.	.	.	.	1	1	1	.	1	1	.	1	1	1	1	.	1	.	.	1	.	1	.	1	.	1	.	.	.	.	.	.	.	14
2	.	.	1	.	.	1	1	1	1	.	1	1	1	1	2	2	1	2	4	1	1	1	1	2	2	2	3	1	1	.	.	.	.	.	.	.	.	.	.	31
	.	.	1	.	.	1	1	1	1	.	1	1	3	5	4	2	3	6	6	10	19	20	36	49	76	103	102	52	31	13	10	9	4	4	2	.	2	.	1	579
1	1	.	.	.	.	.	1	1	1	2	2	1	1	4	3	1	2	2	2	3	3	1	3	7	14	30	23	19	16	9	6	8	1	1	4	.	.	.	.	168
	1	.	.	.	.	.	1	1	1	2	1	1	1	3	1	2	3	8	5	7	9	9	13	13	14	21	19	15	13	8	2	3	1	2	2	.	.	.	.	210
0	.	.	1	.	.	2	2	1	.	4	4	9	2	10	3	5	3	8	5	7	9	9	13	13	14	21	19	15	13	8	2	3	1	2	2	.	.	.	.	210
	.	.	1	.	.	2	2	2	.	5	4	12	4	17	14	18	24	41	49	76	101	153	248	407	604	795	673	445	284	151	79	47	23	17	14	5	4	3	.	4324
Total	1	.	2	1	.	3	6	4	2	7	9	12	7	17	10	9	6	12	9	13	15	11	20	19	24	34	24	18	16	12	4	7	1	3	2	.	.	.	.	340
	1	.	2	1	.	3	6	5	2	8	12	15	15	31	29	34	49	75	80	132	188	258	408	687	982	1249	1071	679	433	231	137	87	49	36	23	7	6	3	3	7037

Table 5 (ii). *Gestation time and parity (females)*

Parity	Gestation time (days)																																						Total
	160–	165–	170–	175–	180–	185–	190–	195–	200–	205–	210–	215–	220–	225–	230–	235–	240–	245–	250–	255–	260–	265–	270–	275–	280–	285–	290–	295–	300–	305–	310–	315–	320–	325–	330–	335–	340–	345–	350–	355–	
15	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	1	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
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6	.	.	.	.	.	.	1	.	.	.	.	.	1	.	1	1	2	3	3	.	2	2	5	6	12	6	7	3	1	1	.	1	.	.	.	.	.	.	.	.	58
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4	.	.	.	.	.	.	.	.	.	1	1	.	1	.	4	2	2	3	9	3	7	17	21	20	21	4	3	6	3	.	1	3	1	.	.	.	.	.	.	.	133
	.	.	.	.	.	.	.	.	.	.	.	.	1	.	.	1	.	3	.	.	.	.	.	.	.	.	.	.	1	.	.	.	.	1	.	.	.	.	.	.	.	8
3	.	.	.	.	.	.	.	.	.	1	.	.	1	.	1	1	1	5	5	3	3	12	15	16	31	16	16	12	10	2	3	3	1	3	.	1	.	1	.	.	164
	.	.	.	.	.	.	.	.	.	.	1	.	.	.	.	1	.	3	2	1	2	.	.	.	.	1	.	1	.	1	.	.	.	.	.	.	.	.	.	.	.	13
2	.	.	.	.	.	2	.	.	.	1	.	.	.	2	1	2	3	6	9	9	13	22	30	39	54	44	31	20	5	7	1	3	5	3	.	1	1	.	1	.	314
	.	.	.	.	.	.	.	.	.	.	.	.	.	.	2	1	.	.	2	1	2	1	4	1	3	4	.	.	.	.	.	.	.	.	.	.	.	.	.	.	24
1	.	.	1	.	.	2	.	.	1	.	.	1	3	4	2	4	3	9	7	8	25	25	62	67	97	64	47	21	18	7	6	4	.	.	.	1	.	.	.	1	490
	.	.	1	.	.	2	.	.	3	1	.	4	4	3	1	3	4	3	2	1	3	4	4	6	4	1	3	4	2	1	.	.	.	.	.	.	.	.	.	.	62
0	2	.	.	2	2	.	2	2	.	3	1	4	2	3	6	1	8	5	8	6	6	11	7	10	11	17	6	15	7	4	.	.	2	1	.	.	.	.	.	.	154
	2	.	.	2	2	.	2	2	2	4	4	7	9	7	17	20	27	41	60	85	113	210	380	608	724	679	510	261	134	75	39	17	18	7	11	6	.	1	1	.	4087
Total	2	.	1	2	2	4	3	4	2	7	3	5	8	8	9	7	12	18	14	11	13	15	16	18	19	22	10	19	10	6	.	.	2	2	.	.	.	.	.	.	274
	2	.	1	2	2	4	3	4	4	8	10	12	23	18	31	45	50	78	113	146	208	367	635	966	1221	1070	735	408	216	125	66	43	30	18	13	9	2	2	2	1	6693

Table 6 (i). *Parity and mother's age (males)*

Parity	Mother's age (years)																Total
	16–	18–	20–	22–	24–	26–	28–	30–	32–	34–	36–	38–	40–	42–	44–	46–	
19	.	.	.	.	.	.	.	.	.	.	.	*1*	.	.	.	.	*1*
	.	.	.	.	.	.	.	.	.	.	.	1	.	.	.	.	1
18	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
17	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
16	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
15	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
	.	.	.	.	.	.	.	.	.	.	.	.	.	1	.	.	1
14	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
	.	.	.	.	.	.	.	.	.	.	.	.	.	.	1	.	1
13	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
	.	.	.	.	.	.	.	.	.	.	.	.	.	3	1	.	4
12	.	.	.	.	.	.	.	.	.	.	.	.	.	.	*1*	.	*1*
	.	.	.	.	.	.	.	.	.	.	.	.	1	1	2	.	4
11	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
	.	.	.	.	.	.	.	.	3	1	1	3	3	2	1	1	15
10	.	.	.	.	.	.	.	.	*1*	.	.	.	.	*1*	.	.	*2*
	.	.	.	.	.	.	.	.	3	2	2	2	4	3	1	.	17
9	.	.	.	.	.	.	.	.	.	.	.	*1*	*1*	.	.	*1*	*3*
	.	.	.	.	.	.	.	1	2	1	2	6	3	1	1	1	18
8	.	.	.	.	.	.	.	.	.	.	.	*1*	*1*	*1*	.	.	*3*
	.	.	.	.	.	.	1	4	1	5	8	9	8	3	1	.	40
7	.	.	.	.	.	.	.	.	*1*	.	*1*	*1*	.	.	.	.	*3*
	.	.	.	.	.	.	1	4	4	6	8	13	6	6	3	.	51
6	.	.	.	.	.	.	*1*	.	.	.	.	*1*	.	*1*	.	.	*3*
	.	.	.	.	.	1	5	8	9	11	14	11	6	3	2	.	70
5	.	.	.	.	*1*	.	.	.	.	.	*2*	.	.	.	.	.	*3*
	.	.	.	1	3	7	7	7	21	14	18	12	13	3	.	.	106
4	.	.	.	.	.	.	.	*1*	*1*	*1*	.	*2*	.	*1*	.	.	*6*
	.	.	.	1	6	9	14	24	28	26	26	15	12	6	1	.	168
3	.	.	.	*1*	.	*1*	*1*	*2*	*2*	*5*	.	*1*	.	*1*	.	.	*14*
	.	.	.	7	18	30	37	46	37	46	17	25	5	3	.	.	271
2	.	.	*2*	*1*	*1*	*2*	*3*	*6*	*4*	*1*	*5*	*2*	*4*	.	.	.	*31*
	.	1	12	41	65	72	92	78	67	58	42	27	18	6	.	.	579
1	.	*1*	*2*	*1*	*7*	*3*	*12*	*11*	*11*	*3*	*3*	*4*	*1*	*1*	.	.	*60*
	.	12	63	141	181	189	222	180	148	90	64	46	20	7	3	1	1367
0	*1*	*17*	*21*	*28*	*31*	*35*	*20*	*12*	*17*	*12*	*9*	*4*	*3*	.	.	.	*210*
	26	271	528	723	754	635	489	317	255	136	102	48	30	9	1	.	4324
Total	*1*	*18*	*25*	*31*	*40*	*41*	*37*	*32*	*37*	*22*	*20*	*18*	*10*	*6*	*1*	*1*	*340*
	26	284	603	914	1027	943	868	669	578	396	304	218	129	57	18	3	7037

Table 6 (ii). *Parity and mother's age (females)*

Parity	Mother's age (years)																	Total
	14–	16–	18–	20–	22–	24–	26–	28–	30–	32–	34–	36–	38–	40–	42–	44–	46–	48–	
15	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	1	.	.	1
14	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	2	.	.	2
13	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
	.	.	.	.	.	.	.	.	.	.	.	.	.	1	.	.	.	.	1
12	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
	.	.	.	.	.	.	.	.	.	.	.	1	.	3	.	.	.	.	4
11	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
	.	.	.	.	.	.	.	1	.	.	2	.	3	2	3	2	2	.	15
10	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
	.	.	.	.	.	.	.	.	.	2	1	1	1	.	3	1	.	.	9
9	.	.	.	.	.	.	.	.	.	.	.	.	.	.	1	.	.	.	1
	.	.	.	.	.	.	.	.	2	1	.	3	2	3	4	1	.	.	16
8	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
	.	.	.	.	.	.	1	1	.	1	4	5	8	10	6	.	2	.	38
7	.	.	.	.	.	.	1	.	.	1	.	.	.	.	1	.	.	.	3
	.	.	.	.	.	.	1	2	5	6	9	7	12	8	6	2	.	.	58
6	.	.	.	.	.	.	.	1	.	.	.	.	1	.	.	.	.	.	2
	.	.	.	.	1	1	2	6	6	12	9	11	9	7	6	1	2	.	73
5	.	.	.	.	.	.	.	.	.	.	2	2	2	1	.	.	.	.	7
	.	.	.	.	.	2	4	11	21	17	20	18	16	12	8	4	.	.	133
4	.	.	.	.	1	1	.	1	4	.	.	.	1	.	.	.	.	.	8
	.	.	.	.	3	5	15	16	25	30	19	13	23	3	10	2	.	.	164
3	.	.	.	.	2	.	.	.	2	2	4	1	2	.	.	.	.	.	13
	.	.	.	1	7	20	20	41	50	33	43	40	30	18	5	3	2	1	314
2	.	.	.	.	4	3	3	1	3	4	1	2	1	2	.	.	.	.	24
	.	.	.	16	33	40	69	51	60	83	49	39	24	20	4	1	.	1	490
1	.	.	.	3	5	4	11	10	5	6	7	8	1	2	.	.	.	.	62
	.	.	16	72	149	178	204	182	163	122	73	54	44	19	8	3	1	.	1288
0	.	1	5	17	17	27	14	20	12	18	11	8	3	1	.	.	.	.	154
	1	31	186	526	760	644	569	500	317	251	148	76	45	24	7	2	.	.	4087
Total	.	1	5	20	29	35	29	33	26	31	25	21	11	6	2	.	.	.	274
	1	31	202	615	953	890	885	811	649	558	377	268	217	130	70	25	9	2	6693

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