Infantile Mortality

Edward Clapham, M.R.C.S. F.R.S.
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The statement that half the number of deaths occurring in a population, is among children under the age of five years, is a startling one; to the thinking mind it is a fertile source of reflection. To the sanitarian it reveals a wide field for improvement and progress; to the physician it suggests the question: How? and by what means? does such a mortality happen among those who have just entered life, to whom disease should be unknown, and the future full of promise. It will be attempted in this paper...
To consider the subject of Infantile Mortality, to trace its various sources, to compare it under different circumstances and where it shall be deemed expedient, to make suggestions as to the possibility of removing its causes and lessening its ravages. I propose to examine especially Infantile Mortality in Scotland, first of all to ascertain the mortality among children under five years of age throughout the land, and to find out the different classes of disease to which it is due. Then a comparison will be made between the mortality in the Town and Mainland of Rural Districts of Scotland. The relative mortality among Male and Female children will also be taken into consideration. In conclusion, some remarks will be made upon the mortality among Illegitimate children, and also upon parental ignorance as influencing Infantile Mortality. The Second Detailed Annual Report of the Registrar General for 1856 is the source from which nearly all the figures and tables in this paper have been derived. In tracing the causes of Infantile Mortality the Registrar General's classification of disease will be adopted as the most convenient, it being understood that several assigned causes of death, as 'feeling' are vague and unsatisfactory.
Infantile Mortality in Scotland

referred to its chief causes

In 1836 12,058 children died under the age of one year, and 23,372 children perished under 5 years of age. In the same year there were 101,821 births and out of that number 12,058 or about 1 in 8½ died before the first year.

<table>
<thead>
<tr>
<th>Diseases</th>
<th>all ages</th>
<th>Both Sexes, ages under 2 years</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>months</td>
<td>Total</td>
<td></td>
</tr>
<tr>
<td>All Causes</td>
<td>68324</td>
<td>6024 1945 4485 5133 2971 1771 1389</td>
<td>23372</td>
</tr>
<tr>
<td>Scarlet Fever</td>
<td>32,755</td>
<td>4780 1411 3770 4226 2732 1422 1326</td>
<td>8630</td>
</tr>
<tr>
<td>Zymotic Class</td>
<td>13,779</td>
<td>610 486 1440 2504 1603 1058 830</td>
<td>8630</td>
</tr>
<tr>
<td>Tubercular Class</td>
<td>9,077</td>
<td>103 245 637 801 442 234 203</td>
<td>2663</td>
</tr>
<tr>
<td>Brain &amp; Nervous System</td>
<td>4501</td>
<td>372 112 187 180 43 68 55</td>
<td>1067</td>
</tr>
<tr>
<td>Respiratory Organs</td>
<td>6,124</td>
<td>416 310 688 606 369 180 113</td>
<td>2621</td>
</tr>
<tr>
<td>Organs of Digestion</td>
<td>4314</td>
<td>354 152 605 621 124 40 30</td>
<td>1566</td>
</tr>
<tr>
<td>Premature Deformity</td>
<td>2744</td>
<td>2635 70 15</td>
<td>2744</td>
</tr>
</tbody>
</table>

Each of the above classes of disease will now be examined separately, with a view to ascertain which member of each class is most destructive to the infant community.

Of the various classes of disease the Contagious, or Zymotic, proves the most fatal in Scotland; nearly an exact fourth of all the deaths being ascribed to this one class. The Zymotic diseases
are especially fatal to the infant population. Thus of the 13,779 persons cut off by that class of diseases, 6,300, or nearly 60 per cent, were under 5 years of age, the remaining 40 per cent being scattered over the ages above that period.

Upon an analysis of the deaths caused by the typhoid class of diseases, it is found that six diseases occupy prominent places, and chiefly originate this large mortality under 5 years: under 3 years.

<table>
<thead>
<tr>
<th>Disease</th>
<th>Deaths</th>
<th>Year</th>
</tr>
</thead>
<tbody>
<tr>
<td>Small Pox</td>
<td>395</td>
<td>1872</td>
</tr>
<tr>
<td>Measles</td>
<td>270</td>
<td>1874</td>
</tr>
<tr>
<td>Scarletina</td>
<td>288</td>
<td>1879</td>
</tr>
<tr>
<td>Diphtheria</td>
<td>375</td>
<td>1879</td>
</tr>
<tr>
<td>Croup</td>
<td>173</td>
<td>1877</td>
</tr>
<tr>
<td>Diarrhea</td>
<td>370</td>
<td>1876</td>
</tr>
</tbody>
</table>

The indifference, and in many instances culpable neglect, which the lower orders manifest with regard to vaccination doubtless increases the mortality from, and encourages the propagation of, smallpox, which holds so high a place among the contagious diseases. A compulsory vaccination act for Scotland could hardly fail to be beneficial.

Measles causes fewer deaths than smallpox but, as is well known, the sequelae of meas-
Sles are very troublesome, and it is reasonable to suppose that part of the large mortality, due to Bronchitis and Pneumonia, as will shortly be seen, may arise from exposure to cold and other exciting causes during an attack of, or recovery from Measles. Scarletina was very prevalent during 1856 as the high mortality-207, testified. Hooping Cough however was the most fatal disease to children under 5 years of age, the deaths from this cause amounting to 2185 and, strange to say, Hooping Cough was more fatal to females than to males which is contrary to the generally established opinion that females possess a lower rate of mortality than males. Thus in every hundred thousand of each sex the fatality cut off by Hooping Cough was 63 males and 72 females in 1855; and in 1856 the proportion was 77 males and 87 females. The Registrar General adds "So far as our limited experience goes, it would appear that introduced by the greater tendency which the female sex exhibits to last fits, a convulsion when attacked by paroxysms or fits of coughing in that disease."

Croup was fatal in 857 cases; it is chiefly in
fluenced by locality. Damp, low-lying situations, especially at the banks of streams, are always attended to last an increased mortality for crops. The mortality from the Dysentery Class of diseases rises suddenly from the 9th to the 12th month, is generally greatest during the 2nd year, continues high during the third, and then gradually falls.

The Tubercular Class of diseases is the next most fatal. The total number of deaths under 5 years of age being 2,665, which are distributed thus—

<table>
<thead>
<tr>
<th>Disease</th>
<th>Deaths</th>
</tr>
</thead>
<tbody>
<tr>
<td>Scrofula</td>
<td>98</td>
</tr>
<tr>
<td>Tuberculosis</td>
<td>394</td>
</tr>
<tr>
<td>Phthisis</td>
<td>631</td>
</tr>
<tr>
<td>Hydrocephalus</td>
<td>1542</td>
</tr>
</tbody>
</table>

**Diseases of Brain and Nervous System**

Total number of deaths under 5 years of age is 1067, of which 671 happened during the 1st year. The deaths were distributed as below,

<table>
<thead>
<tr>
<th>Disease</th>
<th>Deaths</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cephalitis</td>
<td>153</td>
</tr>
<tr>
<td>Apoplexy, under 12 yrs</td>
<td>51</td>
</tr>
<tr>
<td>Convulsions</td>
<td>510</td>
</tr>
<tr>
<td>Brain Disease</td>
<td>127</td>
</tr>
</tbody>
</table>

Convulsions thus affect 1 child carried off by the large number, 326 children dying during the first 3 months.
Diseases of Respiratory Organs are especially fatal to infants. The total number of deaths in Scotland during 1886 from this one class of inflammatory complaints was 6142, of these 2621 or nearly one half happened to children under 5 years of age, and of these 1423 were under one year. The following are the chief causes:

<table>
<thead>
<tr>
<th>Disease</th>
<th>under 5 yrs</th>
<th>under 6 years</th>
</tr>
</thead>
<tbody>
<tr>
<td>Laryngitis</td>
<td>69</td>
<td>12</td>
</tr>
<tr>
<td>Bronchitis</td>
<td>75</td>
<td>1323</td>
</tr>
<tr>
<td>Pneumonia</td>
<td>90</td>
<td>1101</td>
</tr>
</tbody>
</table>

Diseases of the Respiratory organs are among the most common that come under the physician's notice, they attack people of all ages and the aggregate mortality from them is very high. Subject to disease at all ages, the lungs are doubly liable to it in infancy, and especially during the period from birth to the end of the first dentition. In Infancy the Respiratory Process Membrane is extremely delicate, and at the same time that it sympathizes acutely with morbid processes going on within, it can but feebly the resist the influence of external impressions from without. It is stated that during the first month or two of life, this extreme susceptibility does not
exist to the same extent as afterwards, but that after this period, in proportion to the age of the child, there is an increased tendency to catarrh, and that this tendency is at its maximum during the period of dentition. The causes of these inflammatory affections are doubtless similar in kind in all ages, but widely different in degree. Thus an exposure to a draught of air or cold wind, which an adult might bear with impunity, would be highly injurious and productive of most serious results. It is commonly stated that these diseases attack males much more frequently than females, and this is attributed to the fact of males being more exposed to change in the weather whilst following their business, seeing however that half of the number of deaths to those happen under five years of age and that children under such age are equally exposed to the supposed exciting causes of these diseases, another conclusion must be sought. "Almost irresistibly depends," says the Registrar General, "on the peculiar physical constitution of the male, whereby he is more liable than the female to succumb under acute disease."
Organs of Digestion. Diseases of these organs were fatal to 1157 children under one year and to 19.66 under five years of age.

Teething 486
Enteritis 378

Out of the whole number of deaths from these causes, 608 occurred between the ninth and twelfth months of life; and 627 happened in the interval between the first and second year. From the ninth to the forty-first month of birth, the first month being the normal period of dentition, most of these deaths are ascribed to teething, but this is a very vague term. I should be borne in mind that the system generally at this period is undergoing great and important modifications, that the child no longer depends upon its mother for food, already elaborately prepared and fitted for easy assimilation, but that it must now receive into its stomach nourishment of a widely different nature, requiring for its conversion into the useful elements of the body a more active and complicated digestive apparatus than has hitherto been found in the infant. Can it be wondered that the mortality at this important period...
Should be high? or that "Feeding", with the
changes of food that it implies, the alterations in
the digestive system necessary for its reception
and assimilation, and the unusual suscept-
ibility of the system to external im-
pressions, should be looked forward to with ap-
probation, and be regarded with satisfaction
when safely accomplished?

The last assigned cause of Infant Mortality
here to be examined is "Premature Maturity".
The number of deaths from this cause was
2744, of which 2689 occurred among children
under 3 months old. This class includes those in-
fants which die from being prematurely
born, or which, from want of vitality, die short-
ly after birth. The proportion of males greatly
exceeds that of females. During 1856 the rate
was 1 in the hundred of 129 males to every 107 females.
The deaths under this head are in the propor-
tion of 9.8 deaths in every hundred thousand
of the population.

It is proposed in the next place to make a compar-
ison between the mortality among Infants in
the Town and Mainland or Rural Districts, and to
remark upon the special differences that exist.
<table>
<thead>
<tr>
<th>Diseases</th>
<th>Mainland D</th>
<th></th>
<th>Town D</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Months</td>
<td>Years</td>
<td>Months</td>
<td>Years</td>
</tr>
<tr>
<td></td>
<td>3 6 12 2 3 4 5</td>
<td></td>
<td>3 6 12 2 3 4 5</td>
<td></td>
</tr>
<tr>
<td><strong>All Causes</strong></td>
<td>2827 799 1626 2031 1156 733 605</td>
<td></td>
<td>2950 1638 2446 3141 1630 1016 761</td>
<td></td>
</tr>
<tr>
<td><strong>Specified Causes</strong></td>
<td>2173 589 1417 1840 1056 680 572</td>
<td></td>
<td>2147 880 2249 3010 1547 997 733</td>
<td></td>
</tr>
<tr>
<td><strong>Lymotic Class</strong></td>
<td>269 103 356 920 637 607 369</td>
<td></td>
<td>223 253 947 1533 934 638 450</td>
<td></td>
</tr>
<tr>
<td><strong>Tubercular Class</strong></td>
<td>57 94 239 244 161 57 54</td>
<td></td>
<td>44 148 383 489 219 136 116</td>
<td></td>
</tr>
<tr>
<td><strong>Brain &amp; Nervous System</strong></td>
<td>156 48 72 66 37 32 14</td>
<td></td>
<td>218 64 114 164 54 36 74</td>
<td></td>
</tr>
<tr>
<td><strong>Respiratory System</strong></td>
<td>186 122 241 208 102 65 42</td>
<td></td>
<td>214 151 437 373 153 114 71</td>
<td></td>
</tr>
<tr>
<td><strong>Organs of Digestion</strong></td>
<td>167 77 242 240 52 19 15</td>
<td></td>
<td>183 111 381 378 70 21 15</td>
<td></td>
</tr>
<tr>
<td><strong>Premature Debility</strong></td>
<td>141 27 7</td>
<td></td>
<td>138 40 9</td>
<td></td>
</tr>
</tbody>
</table>
It is well known that all diseases, attacking persons of all ages, and of both sexes, are attended by a much higher rate of mortality in large towns than in small towns or in country districts; and accordingly we must anticipate higher infantile mortality in the Town than in the Mainland District. Hence it is found that although the births in the Mainland District amounted to 5,679, against 4,079,6 in the Town District, yet in the former only 2748 children under one year died, whilst in the latter the deaths of infants of the same age amounted to 6,744; in the same year 1856, 5773 children under 5 years died in the Mainland whilst 13,032 resided in the Town District. Causes must exist for this wide difference in the death rates, and doubtless the dark, ill ventilated, badly drained houses of the lower orders in the large towns do contribute largely to the causes of this excess of mortality. The Registrar General writes however "...even the houses in the most perfect state as to ventilation, lighting, drainage, supply of fuel with the proof of this extra mortality among infants would continue to go on seeing that the necessity for so many of the mothers labouring for their daily
Registrar general's First Report for England and Wales.
Read, Jones them to neglect their infants, or leave them in charge of incompetent nurses, so that they are too often improperly fed, and altogether drugged with some preparation of Opium. Every one who has been in the houses of the Cowgate, and similar localities in Edinburgh, must be convinced that theretchedness, filth, and squalor of the house, a room (in a single room often constitutes the whole home of its occupants) must tend to disease. How can we justify this? and the question may well be asked, and why is the mortality so high? and how do children manage to live at all and to grow up men and women.

Taylor writes: "The cause of the higher mortality in cities is the insalubrity of the atmosphere, and it will be found, after Julius, that the mortality increases as the density of the population increases, and when the density and the affluence are the same, that the rate of mortality depends upon the efficiency of ventilation and of the means which are employed for the removal of impurities." Therefore the greatest amount of dissipation which prevails in the towns, and the consequent lowering of the "physique."
of the parents exercises an influence upon the health of their offspring.
In consequence of the dense population, want of pure air, and other results of overcrowded districts, it is natural to suppose that the mortality from the typhoid class of diseases should be in excess in the Towns, accordingly we find that in 1856 6,120 children under 3 years of age died in the Towns from diseases of this class, whereas in the Mainland the mortality under the same age amounted to 2,545. The following is an analysis of the deaths caused by the chief diseases grouped under the typhoid class.

<table>
<thead>
<tr>
<th>Disease</th>
<th>Mainland</th>
<th>Towns</th>
</tr>
</thead>
<tbody>
<tr>
<td>Small Pox</td>
<td>202</td>
<td>687</td>
</tr>
<tr>
<td>Measles</td>
<td>405</td>
<td>490</td>
</tr>
<tr>
<td>Scarletina</td>
<td>854</td>
<td>1104</td>
</tr>
<tr>
<td>Whooping Cough</td>
<td>636</td>
<td>1488</td>
</tr>
<tr>
<td>Croup</td>
<td>423</td>
<td>442</td>
</tr>
</tbody>
</table>

From the above figures Small Pox, Scarletina and Whooping Cough appear to be the greatest sources of mortality and these three diseases show a remarkable excess in the Towns over the Mainland District, the conditions for their propagation being more favourable in the former.
In comparing the mortality in the Mainland and Town Districts it must be borne in mind that the population of the former considerably exceeds that of the latter, the respective populations in 1856 being estimated at 30,000.

Mainland 1739,196; Town D. 1072,807

In the Mainland District there were 1033 deaths from Tubercular Disease among children under 3.

In the Town District there were 1484, distributed thus:

<table>
<thead>
<tr>
<th>Disease</th>
<th>Mainland</th>
<th>Town D.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Epilepsy</td>
<td>170</td>
<td>211</td>
</tr>
<tr>
<td>Pneumonia</td>
<td>204</td>
<td>406</td>
</tr>
<tr>
<td>Hydrocephalus</td>
<td>608</td>
<td>1138</td>
</tr>
</tbody>
</table>

The excess of deaths required to make up the number were first due to Scrofula. The chief difference in the rates consists in the greater number of deaths from Pneumonia, which may be accounted for by the unfavorable condition to which the infants in large towns are exposed. The difference in the Infantile Mortality in both districts from Tubercular Disease is not so striking as it is in the returns for the whole population.

Thus in the Insular District these figures from Tuberculosis and Infant Mortality in the proportion of 180 infants per 10,000 births are very unhealthy thousand persons living in the
Mainland and Rural Districts, which include all the smaller towns and villages, the
Infection was 260 deaths in the same num-
ber of inhabitants, while in the Town District
the Infection rose to 453 deaths from the Tu-
bercular Class of diseases in every Hundred Thou-
sand of the Population. The cause for this

difference may be traced to the Infantile Mor-
bidity, with perhaps 12 – 14 it the period allowed
for the Development of the infectious influences is not long
enough, that during the first year of life, the

germs of disease are seen, as it were, into the system.
Not in many instances actual disease may

exist itself, but it is in the Majority of cases, infec-
tion under these circumstances struggles through a

miserable childhood only to reach during

Infancy or Early Adolescence.

Deaths arising from Disease of Nervous System

in the Mainland were 430, in the Town 610.

Cerebro- 64

Spinal- 19

Conus- 276

Brain- 53

It is interesting to note the early age at which

children are carried off by Conus, in the
Mainland 136 and in the Town 188 deaths occurred from this cause during the first three months of life, and within the first year there were respectively 209 and 258 fatal cases.

There is a most striking difference in the mortality of the two districts from diseases of the Respiration System

<table>
<thead>
<tr>
<th></th>
<th>Mainland</th>
<th>Town D. 1616</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>under 2 yrs</td>
<td>under 3 yrs</td>
</tr>
<tr>
<td>Bronchitis</td>
<td>253</td>
<td>493</td>
</tr>
<tr>
<td>Pneumonia</td>
<td>218</td>
<td>392</td>
</tr>
</tbody>
</table>

This difference is too remarkable to be passed over unnoted. The exciting causes of such diseases are perhaps more abundant in Town D. [Later text cut off by image capture, but likely continues with discussion of disease causes and conditions in both locations.]

The custom of huddling together in the common apartment, President in lower parts of large rooms, may have originated many attacks of such disease, although of course it cannot account for the great increase in mortality. Again it may be urged that the sick by infant of the Town, reduced to an impure condition, and surrounded by unfavourable circumstances, cannot withstand an attack of so severe a disease.
as Pneumonia so well as the more fortunate infant in the country. The 2nd, 3rd, or 6th day is the time to treat it, although he may be finally exposed to the many dangers arising from the mismanagement of an ignorant midwife.

**Disease of the Stomach and Digestion**

<table>
<thead>
<tr>
<th>Mainland 814</th>
<th>Town D. 1125</th>
</tr>
</thead>
<tbody>
<tr>
<td>Inflaming</td>
<td>350</td>
</tr>
<tr>
<td>Intermittent</td>
<td>243</td>
</tr>
<tr>
<td>Extirpate</td>
<td>272</td>
</tr>
</tbody>
</table>

The great difference observable between the deaths from Inflamming in the two districts may, certainly, be explained by the fact that the children in India are more apt to be neglected in this important period, for mothers are often engaged in some family work, and the children are left careless of. Consequently, the children are left to carelessness and peculiarity.

**Pneumonia**

<table>
<thead>
<tr>
<th>Mainland D. 1225</th>
<th>Town D. 1416</th>
</tr>
</thead>
</table>
| The world naturally looks for a considerable increase in mortality in the Towns from this source. Some of the causes perhaps are - Debility & deprivations among the lower orders of women in large houses.
L'étude sur l'homme et le développement de ses facultés, p. 163.
Relative Mortality of the Sexes.

The influence of sex upon mortality is well marked even from the earliest infancy to extreme old age. Pay its influence is before birth in the number of stillborn males is to that of females as 3 to 2. So included, however. "In West Flanders during the 4 years from 1827-30 there were 2539 stillborn children of which 1647 were males, and 1080 females, giving a proportion of about 3 to 2." Further on the same author writes: "I am inclined without doubt that there exists a particular cause of mortality which attacks in preference the male infants, before, and immediately after their birth. Its effects are such that the proportion of deaths is before birth, as 3 to 2, during the first two months which follow it about 4 to 3, during the 3rd, 4th, and 5th month as 5 to 4, and after the fifth or 1st half month the difference is little or nothing."
Total number and relative proportion of male and female deaths during 1841 in England and Wales within the first five years of life.

<table>
<thead>
<tr>
<th>Ages</th>
<th>Males</th>
<th>Females</th>
<th>Proportion of Males to Females</th>
<th>Ratio of Excess of Male Mortality</th>
</tr>
</thead>
<tbody>
<tr>
<td>0 to 1 month</td>
<td>1335 1</td>
<td>5741</td>
<td>134 2 100</td>
<td>39</td>
</tr>
<tr>
<td>1 to 2</td>
<td>4348 1</td>
<td>3703</td>
<td>131 2 100</td>
<td>31</td>
</tr>
<tr>
<td>2 to 3</td>
<td>3313 1</td>
<td>2676</td>
<td>124 2 100</td>
<td>24</td>
</tr>
<tr>
<td>3 to 6</td>
<td>8000 1</td>
<td>6451</td>
<td>122 2 100</td>
<td>22</td>
</tr>
<tr>
<td>6 to 9</td>
<td>6341 1</td>
<td>5782</td>
<td>110 2 100</td>
<td>10</td>
</tr>
<tr>
<td>9 to 12</td>
<td>5573 1</td>
<td>5013</td>
<td>105 2 100</td>
<td>5</td>
</tr>
<tr>
<td>1 to 2.4 years</td>
<td>13,987</td>
<td>13,281</td>
<td>100 2 100</td>
<td>0</td>
</tr>
<tr>
<td>2.5 to 4.4 years</td>
<td>16,164</td>
<td>13,541</td>
<td>107 2 100</td>
<td>1</td>
</tr>
</tbody>
</table>
The influence of this upon the mortality attending parturition, as well as during the first months of infancy, has been ably illustrated by Prof. Simper, and from his interesting paper on the subject the following remarks are chiefly derived.

"Of the children that die during the actual process of parturition the number of males is much greater than the number of females."

<table>
<thead>
<tr>
<th>Stillborn Children not Born</th>
<th>No. of Males</th>
<th>No. of Females</th>
<th>Proportion of Males to Females as</th>
</tr>
</thead>
<tbody>
<tr>
<td>3.54</td>
<td>36.7</td>
<td>23.7</td>
<td>161:100</td>
</tr>
</tbody>
</table>

"More male than female children die in the earlier periods of infancy, and the distinction between the mortality of the two sexes gradually diminishes from birth onwards till sometime subsequently to it." This illustration is in accordance with the remarks of Ducotelet above quoted.

12,505 children died in this first year in Scotland during 1856. The proportion of males to females will be seen from the following small Table.

<table>
<thead>
<tr>
<th>Ages under</th>
<th>Males</th>
<th>Females</th>
</tr>
</thead>
<tbody>
<tr>
<td>3 months</td>
<td>3,415</td>
<td>2,606</td>
</tr>
<tr>
<td>6 months</td>
<td>1,058</td>
<td>811</td>
</tr>
<tr>
<td>12 months</td>
<td>2,203</td>
<td>1,962</td>
</tr>
</tbody>
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Prof. Simpson has very clearly proved that the excess of mortality among male children is occasioned by a slightly increased size of the male head. He writes: "For the very marked differences existing between the difficulties and perils of male as compared with female births, there is another traceable cause in the mechanism of parturition than the large size of the head of the male child." This increase in size amounts to about one eighth of an inch in the transverse diameter of the male head, owing to the larger size of male infants. Male births are larger and consequently more fatal to mother and child than female births. Also the increased duration of female births exerts an injurious influence upon the health of male children during the first months of their lives, and from the amount of pressure to which the head is subjected, diseases of the respiratory system are more common among male than among female infants. "In fact, doctors," he says, "the diseases of the respiratory system are twenty-three per cent more fatal to males than to females. The chief difference arising from the diseases which affect children." The number of male
Infants who died from diseases of the nervous system during their first year in 1846 were 380, of which
291 females perished from the same causes, of
this number 289 males and 221 females died from
constrictions. In the same year 321 male children
died of hydrocephalus and 721 females from the
same cause, of these respectively 353 and 298 were
under one year of age. The great distinction
noticed with respect to the number of children of different
tribes who died from Pneumonia and Bronchitis under
5 years of age has already been noticed. 1844 males
The disproportion in the children of different sexes is
signally marked. 1344 males died of these two
diseases and only 880 females. There is no evident
reason for this wide difference, for both sexes at that
early age are brought up under like conditions, and in
the males exposure to exciting causes of death likely
more than the females, which in after life might be
supposed to account for the difference. This was be-
fore remarked that nothing could be more fatal
to females than to male children, for contrary to
the general rule, the deaths of 1848 male children
are ascertained to be from disease of the nervous sys-
tems and those that survive is 1156, i.e. in
the proportion of 129 males to every 100 females.
First figure 44 upon some of the remarks about
made relative to the excessive mortality of male births
and many of these deaths may well be traced to the injurious effects of parturition upon
male children.

Mortality among Illegitimate Children

In Scotland during 1856 8,693 illegitimate children were born, but from the Registrar General's
Report it cannot be ascertained what was the rate
of mortality among them. Nevertheless a few general
remarks upon the subject may add to our information,
and the accurate facts are wanting it may be
permitted to make some few conjectures.

"I write in a Paper on Infantile Mortality in Fife
Wrote" I have no means of correctly estimating
the number of illegitimate children who die
early in cities, but, judging from some facts, the
Medical Officer of Health, being as one of the Medical Officers
in Corrivoe with the largest public Dispensary in
this city (Glasgow) to complain that few of
them survive their first year. This being the case
and the high percentage of illegitimacy in the
principal towns in this part of the County being
admitted, it becomes apparent that no small
The item in the form of Infant Mortality is contributed from this source and is attributable, according to Dr. O'Collins, "to neglect and deficient nutrition." There can be no doubt that the general health and well-being of the mother during pregnancy bestirs the most important influence upon the present development and future condition of the infant. It would be difficult to enumerate all the perilous and distressing circumstances which surround a woman pregnant illegitimately. She is frequently a mere child herself, born and brought up nearly fully developed, and rendered partly from being so by previous ill-nourishment and degenerate clothing and bad lodging. Her condition is often concealed until it is no longer possible to hide it, and for this reason she frequently becomes visibly as soon as the uterine tumour begins to appear in the abdomen. It is needless to say that this most direct and injurious effect upon the health of mother and in addition most draining on the general health of the woman herself. During this time she has to work for her livelihood, with no relief of a character ill suited to her state. Add to this the state of mental anxiety and distress consequent upon the deplorable life she leads.
Sur l'homme etc. Jusq 1837.
an extra-Rich is the rule rather than the exception. Many mothers of illegitimate children are often sunk low in misfortune, addicied to intemperance, often by syphilis. Under these conditions can it be

Moreover, can that the children should be happy, ill

derived, often actually diseased? And is it

be wondered at that they waste and die in early

infancy when one considers the hardships and privations of life and childhood? I quote:

"Institute states that 5,200 girls gave birth in 1820 among 100 births, 3 cases of stillbirth among

the legitimate and 15 among the illegitimate.

At Berlin, the number of stillborn children amon

g a hundred illegitimate births was during

last 50 years, three times more numerous than

the number of still-born children among the hundred

legitimate births. The same author writes: "At Hamburg during 1820 there a hospital, where there were severe
babies of illegitimate births were 6 still-born, and in another hospital of the same town also shortly in

30 cases of illegitimate births there were found 11

still-born." In Scotland during 1834 there were

27,64 deaths from prematurity and of these nearly

indeed, that a large proportion of them were among illegitimate..."
Parental Ignorance.

A very great deal of Infantile Mortality must be set down to this cause. It is a horrid thing, but nevertheless true, that a large proportion of the deaths of infants is due to ignorance or neglect of those who gave them birth, and who care they were entrusted. This ignorance is not confined to the lower orders but is widely spread throughout society and children of the middle and upper classes although removed from the grossest forms of evil which their poorer fellow sufferers endure, are in great number from the mismanagement to which they are subjected. It is strange that men should take such pains in and assist at such success in the rearing of domestic animals, and yet that the art of bringing up his own offspring should be so indifferently neglected and attended by such a sacrifice of life. It certainly was not intended that as many of the children born should die within five years, and educated shortly after. Instead of the entirety, both rich and poor, become interested in teaching the amount of ignorance and its differing from principles of science among the middle; with their vast room for improvement, and their common
men's remarks, judiciously and kindly made by medical men would go far in effecting public good.

It is not the province of this paper to fall into the mist of forces which elucidative applied to

fancy, but it will at once be acknowledged that by

combined error in all of this department cannot fail to exercise most important influence

upon the distant and upon the diseases, then accu-

servedly upon the mortality of infancy also. But this

often neglected medical advice, the child sits and

goes a dose of physic the mother is looking for a

signifying after the cause of its ailment persists near

by some error in diet, which being removed, the infant

nearly recovers. The doctrine of "hardening" infants

is now exploded, at least in theory, but this and the

steady arms and spite of little children afford

sympathy, and are they at all after the channel

by which fatal attacks of Bronchitis or Pneumonia

are admitted? Many mothers are over busy with

their sick children, a poor child will seize Pneu-

monia is expected to go through the same amount

of working and dressing as a strong healthy one

but it is obvious at what risk and disadvantage this

can be. These things are so easily into parents heads

they never think of them. The ignorance and ne-
judice of many mothers with regard to Vaccination. 

vaccination cannot be many instances be evaded, and it would be that Small-pox will prevail and

form a large item in the gross mortality.

Parents get into the habit of regarding several of the greatest sources of infancy as health or 

Scrofula, Whooping Cough as necessary and

inevitable evils, and they take no pains to guard

their children from infection, in this way to

avoid the epidemics of such diseases are formed

and from the ignorance and carelessness of such

many infants perish. We might mention here

Eustace. Much might be said about mothers

in large towns taking their children out in unse-

table weather, and at improper hours, such

wild discriminates and reckless exposure must

tend to injure and destroy its victims.

There can be no doubt, that in large towns,

while the mothers, in order that they may not

abstain themselves from employment, are in

the habit of entrusting their children to the care

of indifferent people, number of children be

the through neglect, through ill-nourishment,

or from good being given at too long and im-

proper intervals; or from the very common and
Bureau habit of dragging them with some ease. Chi supposition given in order to quiet their hunger and to silence their cries. Having thus imperfectly endeavored to ful- fill the objects stated in my introduction, I subscribe my name

Edward Clapham

March 1862.