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## URBANIZATION AND POPULATION IN AN ENGLISH TOWN Leeds during the Industrial Revolution

MINORU YASUMOTO

The proportion of 'urban' population in England and Wales is said to have grown from roughly 25%<sup>1</sup> in 1680 to about 35%<sup>2</sup> in 1801, reaching to more than 64%<sup>3</sup> at the beginning of the nineteenth century. Generally speaking, the proportion of both 'urbanized' areas and 'urban' population was high in the industrialized areas at the beginning of the nineteenth century.<sup>4</sup> In general terms, therefore, it may be admitted that there was some reciprocal stimulation between 'urbanization' and industrialization, though the ways in which these reciprocal influences were exercised are still open to discussion.

Since the publication of Professor J. D. Chambers' 'Vale of Trent'<sup>5</sup> in 1957 and 'Population Change in a Provincial Town'<sup>6</sup> in 1960, little light has been thrown on the question of population change in urban areas during the Industrial Revolution. With the exception of the town of Nottingham, not enough is known about the urban population change in England generally to make a fruitful comparison possible. A great deal more research into the population in an individual town is needed if the relation between 'urbanization'—concentration of population into the urban areas and/or the growth of urban population—and industrialization is to be proved.

Recent advances in historical demography, particularly the development of nominative analysis of parish registers, namely, "Family Reconstitution", have clarified a lot of remarkable and stimulating facts about the history of rural population in pre-industrial England.<sup>7</sup> This method is, for the present, the best of all for deducing sophisticated indices of population in the past. It might, however, be nearly impossible to apply this laborious and time-consuming method

<sup>1</sup> D. V. GLASS, "Gregory King's Estimate of the Population of England and Wales, 1695", *Population Studies*, Vol. 3, Pt. 3, 1949, p. 358.

<sup>2</sup> T. A. WELTON, "On the Distribution of Population in England and Wales, and its Progress in the Period of Ninety Years from 1801 to 1891", *Journal of the Royal Statistical Society*, Vol. LXIII, Pt. IV, 1900, p. 529.

<sup>3</sup> *Ibid.*, p. 533.

<sup>4</sup> *Ibid.*, p. 531.

<sup>5</sup> J. D. CHAMBERS, "Vale of Trent, 1670-1800, A Regional Study of Economic Change", Supplement, No. 3, to *Econ. Hist. Rev.*, 1957, pp. 21, 53 *et passim*.

<sup>6</sup> J. D. CHAMBERS, 'Population Change in a Provincial Town; Nottingham, 1700-1800', in *Studies in the Industrial Revolution presented to T. S. Ashton*, ed. by L. S. Pressnell, London, 1960, pp. 101, 114 *et passim*.

<sup>7</sup> See especially E. A. WRIGLEY, "Family Limitation in Pre-Industrial England", *Econ. Hist. Rev.*, 2nd ser., Vol. XIX, No. 1, 1966, pp. 85-100 and E. A. WRIGLEY, *Population and History*, London, 1969, pp. 80-89.

to such a large population as found in an urban area. In dealing with a fairly large population, an aggregative analysis by making use of the same kind of source materials is still worth doing, provided that the documents do not contain so many flaws as to make quantitative analysis of them meaningless.

The chief purpose of this paper is to obtain some general ideas of the relation between 'urbanization', reviewed through the demography of the English town of Leeds in the West Riding of Yorkshire, and industrialization, within the limits of the available sources. Thus the analysis to follow is quantitative rather than qualitative. The town of Leeds was chosen as the basis of this study, mainly because it is relatively well-documented from the view-point of historical demography, when compared with other large towns in the industrialized areas, and, partly because Leeds, having the sixth largest population in England and Wales at the beginning of the nineteenth century, was most likely to provide a fairly good indicator of the general relation between 'urbanization', industrialization and population, and to provide a representative index for the whole country.

#### I. GENERAL TREND

In the first place, a brief examination will be made of the general trend of population change in Leeds from the seventeenth century to the beginning of the nineteenth century. Until 1835, when, by the Municipal Corporation Act of that year, the boundary and the sub-divisions in the Borough of Leeds were re-arranged,<sup>8</sup> the parish of Leeds, co-extensive with the borough, had contained Leeds township, or "in-town", and ten extra-urban villages. Of these ten 'out-townships', Armley, Beeston, Bramley, Holbeck, Hunslet and Wortley may be classified as 'industrial' villages, whilst the other four, Chapel Allerton, Farnley, Headingley, and Potter Newton were 'agricultural' villages,<sup>9</sup> even in the middle of the nineteenth century. Thus, the urban area in the borough of Leeds, which covered a considerable area, stretching about seven miles, north to south and east to west, was surrounded by the extra-urban industrial villages chiefly to the south, and by the agricultural villages to the north of it.<sup>10</sup>

The Parish Registers of Leeds in the printed form of the Thoresby Society<sup>11</sup> cover the period from 1572 to 1800. The entries of marriages were registered only to 1769, but the Census Returns of 1801 recorded the marriage each year from 1754 to 1800.<sup>12</sup> Apart from the discrepancies which exist between baptisms and births,

<sup>8</sup> J. WARDELL, *The Municipal History of the Borough of Leeds, in the County of York, from the Earliest Period to the Election of the First Mayor under the Provisions of the Municipal Corporation Act, on the 1st January, 1836*, Leeds, 1846, pp. 93-6.

<sup>9</sup> See the Census Returns of Great Britain (Abstract of the Answers and Returns: Parish Registers, 21 Dec. 1801), pp. 449-50, 1811, pp. 425-6, 1821, pp. 424-5 and 1831, pp. 824-5.

<sup>10</sup> F. BECKWITH, "The Population of Leeds during the Industrial Revolution", *The Publications of the Thoresby Society*, Vol. XLI, Pt. 2, No. 93, Miscellany, Vol. 12, Pt. 2, 1948, pp. 122-3.

<sup>11</sup> Leeds Parish Church Registers, Vols. I-XXV, *The Pub. of the Thoresby Soc.*, 1889-1922. Hereafter in the figures and tables, all years shown are new style calendar years.

<sup>12</sup> Abstract of the Answers and Returns: Parish Registers, 21 Dec. 1801, p. 371.

burials and deaths, and the entries for the Dissenters in Leeds, which will be dealt with later, the Registers have their inherent imperfections. Baptisms, as is often the case, immediately before and during the Civil War (1638–1650) and later (1659–1662, 1695), burials during approximately the same period (1644–1648, 1657) and marriages at the beginning of the 1590's, 1659–1661, 1694–1695, seem to be under-registered. Despite these periodical deficiencies in the entries, an examination of the Registers reveals there is no sign that the registration became less reliable during the period under review. For the registers of such a large town as Leeds, they may be regarded as satisfactory, and be able to be analysed quantitatively with a considerable degree of reliability.

Until the beginning of the eighteenth century, the entries of baptisms and burials of the out-townships are registered, mixed with those of the in-town. However, some of the baptisms, burials and marriages of Armley and Hunslet are separately registered, though they are not so large in number. In the subsequent period, the Chapelry Registers of Leeds<sup>13</sup> give the entries of each out-township<sup>14</sup> independently, and they also contain the entries of the Church of St. John's and Holy Trinity<sup>15</sup> in the in-town. Thus it follows that we can obtain the entries of the whole Parish by adding the entries in the Parish Registers to those in the Chapelry Registers. Similarly, if we examine and compare the trend of the population change in the in-town proper with that of the out-townships, the entries of the Churches of St. John's and Holy Trinity in the Chapelry Registers must be added to the entries in the Parish Registers.

As far as the evidence of the registers goes, certain features of a long-term trend, and the changing relations between baptisms, marriages and burials of the Parish of Leeds stand out. As is shown in Fig. 1, there was a rapid growth of baptisms from the middle of the sixteenth century to the 1640's, then a sudden decline to 1650, followed by a period of slow and constant decrease for about a century till around 1700. For a subsequent decade, a certain recovery was seen, and then a burst of baptisms took place which continued to the middle of the 1730's, whilst there was a period of stagnation for about ten years following. The second upswing of baptisms appeared from the middle of the 1740's to 1760, followed by a third and remarkable upsurge beginning in the 1770's, which was self-sustained and unbroken until the nineteenth century.

Burials almost always outnumbered baptisms for about fifty years after the middle of the seventeenth century. The main agency in the two periods, 1640–1650 and 1675–1700, which were characterised by an exceptionally high death rate, seems

<sup>13</sup> The Registers of the Chapels of the Parish Church of Leeds, *The Pub. of the Thoresby Soc.*, Vol. XXIII, 1916, The Registers of the Chapels of St. John, Holy Trinity, Headingley, Bramley, Beeston, Chapel Allerton and Farnley, *ditto.*, Vol. XXIX, 1928 and The Registers of the Chapels of the Parish Church of Leeds, *ditto.*, Vol. XXXI, 1934.

<sup>14</sup> The degree of reliability of the Registers of the Chapel of Headingley seems to be low, for throughout the period covered by the Registers, baptisms are seemingly under-registered.

<sup>15</sup> The number of the entries in the Registers of Holy Trinity Church is quite small. See the Registers of the Chapels, Vol. XXIX.

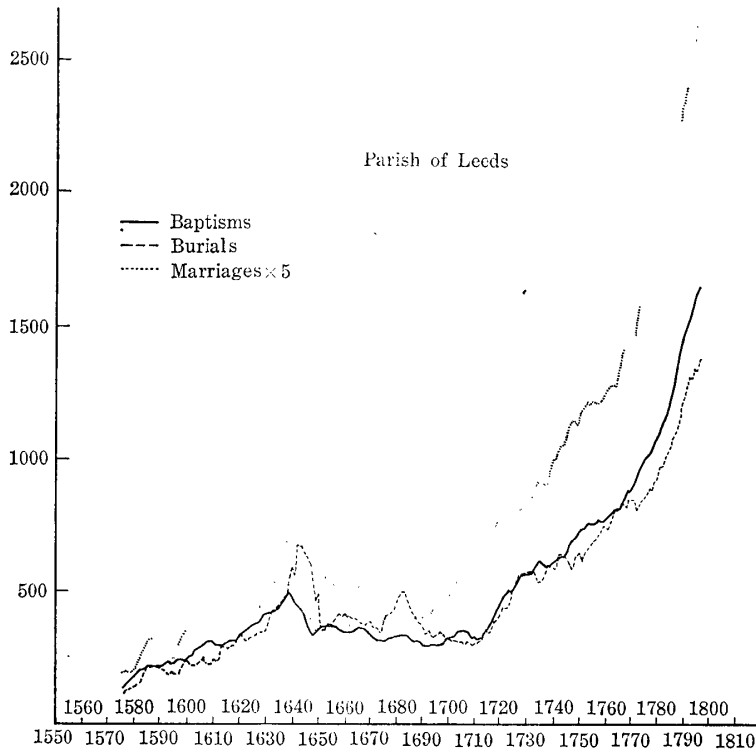


Fig. 1. Trend of Baptisms, Burials and Marriages  
 (Nine-year moving average)

to have been severe epidemics.<sup>16</sup> In the eighteenth century, the same trend as found in baptisms is seen, except for the two periods of 1700–1715 and 1745–1765, when the supremacy of baptisms was pronounced. A favourable balance of baptisms over burials was established in the 1770's, as indicated above, and the relation between them was never again inverted. But it is interesting to note that even after the 1770's, burials did not decline so markedly as in other rural parishes in the West Riding.<sup>17</sup> As regards the trend of marriages, we can only say that throughout the period covered by the Registers and the Census Returns, they paralleled the baptisms with a certain time-lag, and after about 1700, they gradually increased.

From the beginning of the eighteenth century, as is mentioned above, the available sources make it possible to compare the trends of baptisms and burials in the out-townships of Leeds with those in the in-town. The nine-year moving averages of baptisms and burials in the ten out-townships (Fig. 2) indicate that

<sup>16</sup> S. J. CHADWICK, "Some Papers Relating to the Plague in Yorkshire", *The Yorkshire Archaeological Journal* (hereafter *Y. A. J.*), Vol. XV, 1900, p. 454, E. BARBER, "West Riding Sessions Rolls", *Y. A. J.*, Vol. V, 1890, p. 376, R. KELSAL, "Statute Wages during Yorkshire Epidemics, 1679–81", *Y. A. J.*, Vol. XXXIV, 1939, p. 314.

<sup>17</sup> YASUMOTO Minoru, "Kinsei Eikoku no Jinkō—Kazoku-Fukugen (Family-Reconstitution) no Kokoromi—(Some Aspects of the Population Trend in Pre-Industrial England—"Family Reconstitution" from the Parish Registers of Braithwell, West Riding of Yorkshire)", *Shakai-Keizai-Shigaku*, Vol. 39, No. 1, 1973, pp. 4–8.

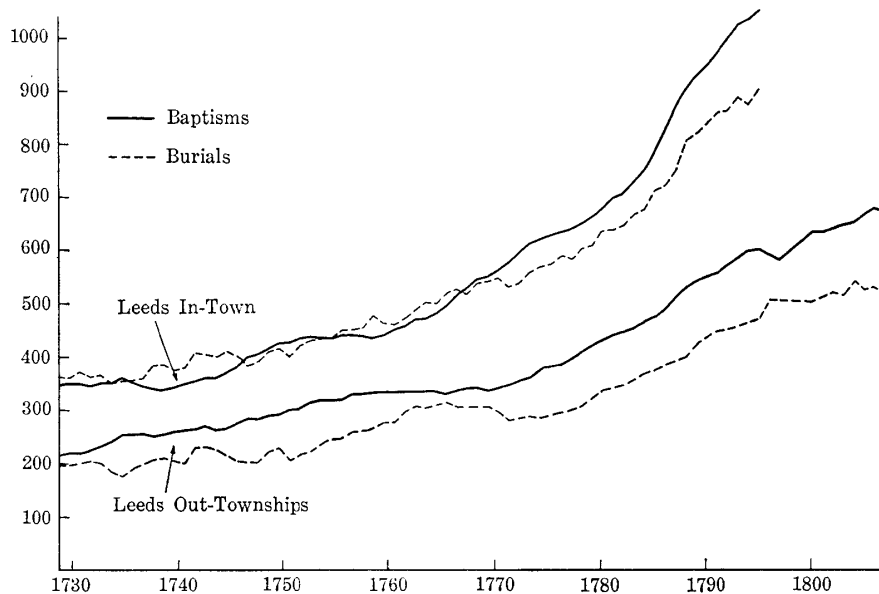


Fig. 2. Trend of Baptisms and Burials (Nine-year moving average)  
Leeds In-Town and ten Out-Townships

the balance continued to be favourable to baptisms from the end of the 1770's on, and that there were no phases with burials outnumbering baptisms. Favourable as the balance was to baptisms during the eighteenth and the beginning of the nineteenth centuries, baptisms in the ten out-townships grew less rapidly than in the in-town. On the other hand, in the in-town, the struggle for a balance of baptisms over burials was repeated continuously at least until the latter half of the 1760's, and thereafter baptisms caught up with burials. The rate of the growth of baptisms in the in-town was decidedly higher than that in the out-townships from the mid-1780's.

Thus all the evidence suggests, firstly, that most of the characteristic features in the long-term trend of population change in the Parish of Leeds are largely those of the in-town and, above all, the remarkable upsurge of baptisms in the Parish, starting in the 1770's, reflected the favourable balance for baptisms over burials, established at the same time in the in-town. It should be noted, secondly, that these features of the long-term trend of the population in the Parish of Leeds closely resemble the 'general trend' of the whole country as known at present.<sup>18</sup> However, the rate of the growth of baptisms in Leeds starting in the eighteenth century, particularly in the 1770's, was higher and the level of burials was also higher during the latter half of the eighteenth century. This latter is assumed to be the result of the high death rate in the in-town.

One further interesting comment may be made on the time of the upswing of baptisms. There seem to be no doubt about the fact that as far as the Parish and

<sup>18</sup> J. D. CHAMBERS, *Population, Economy, and Society in Pre-Industrial England*, Oxford, 1972, pp. 22-3, 31-2 *et passim*, E. A. WRIGLEY, "Family Limitation", p. 84, H. J. HABAKKUK, *Population Growth and Economic Development since 1750*, Leicester, 1971, pp. 27-8.

the in-town of Leeds were concerned, population growth, so far as reflected in the trend of baptisms, was under way before the impact of industrialization was felt. The economic expansion, which took place in the form of the proliferation of the new mechanized industries, may be regarded not as having initiated, but only as having reinforced the upward trend of population growth.<sup>19</sup> The driving force behind the sudden and rapid growth of births will be reviewed later.

It only remains to be seen whether or not the difference in the trends of baptisms and burials between the agricultural and industrial villages and the urban area, existed in the Parish of Leeds during the eighteenth and the beginning of the nineteenth centuries. From the five-year moving averages of baptisms and burials in Hunslet and Holbeck (Figs. 4 and 5) taken as representative groups of the industrial out-townships, and Chapel Allerton and Farnley (Figs. 6 and 7) as representative groups of the agricultural out-townships, a certain differential trend appears to be present. Both of the industrial villages have the peculiarity of a sharp rise in baptisms sometime around 1780, and this is also true for the in-town (Fig. 3). In addition, they have another factor in common, in that both at the beginning of the eighteenth century and immediately prior to a sudden rise in baptisms around 1780, burials outnumbered baptisms.

The agricultural villages, unlike the industrial villages, show no sign of a sharp rise in baptisms but rather a slow, smooth rise. The burials had little chance of exceeding the baptisms in the period under review in these two agricultural villages. Whatever the explanation may prove to be, the very existence of the difference in the trends of baptisms and burials between the three distinct areas

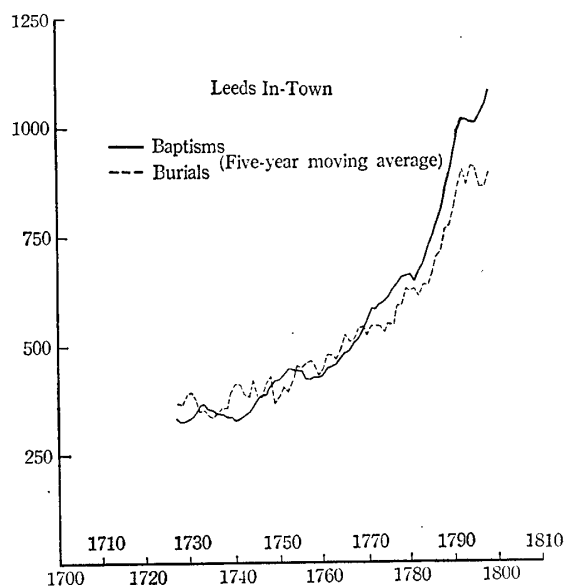


Fig. 3. Leeds In-Town

<sup>19</sup> The same is also true of the town of Nottingham. Cf. J. D. CHAMBERS, 'Population Change in a Provincial Town, Nottingham', pp. 112-3.

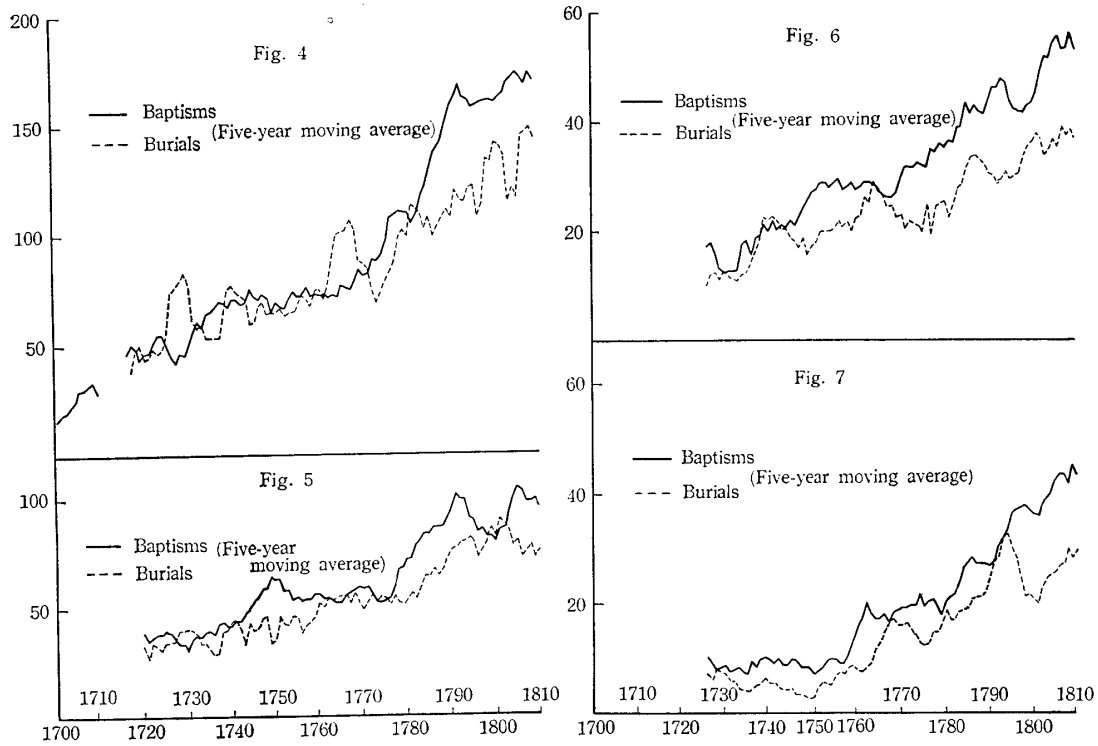


Fig. 4. Leeds Out-Township, Hunslet (Industrial Village)

Fig. 5. Leeds Out-Township, Holbeck (Industrial Village)

Fig. 6. Leeds Out-Township, Chapel Allerton (Agricultural Village)

Fig. 7. Leeds Out-Township, Farnley (Agricultural Village)

in the Parish seems to be very significant when we consider the relation between urbanization, industrialization and population.

## II. FERTILITY, AGE AT MARRIAGE AND OTHER INDICES

We have seen in some detail the long-term trend of population change in the in-town and Parish of Leeds through the trends of the entries of baptisms and burials in the registers. In this section, some approximate estimates of birth and death rates will be made of the percentages to be added for omission in the registers.

Although it would seem difficult to obtain exact figures for births and deaths with a certain percentage of addition for a town like Leeds, which had a large and rapidly growing population, we fortunately have Wood's figures of percentages, which, though they were devised for the in-town of Leeds only, may be worth adopting for the whole Parish. In Wood's figures, not only the leakage of Anglicans in the registers, but also omission for the Dissenters are included.<sup>20</sup> Moreover,

<sup>20</sup> F. BECKWITH, *op. cit.*, p. 141. See also F. M. EDEN, *The State of the Poor*, London, 1797, Vol. III, p. 862 and J. AIKEN, *A Description of the County from Thirty to Forty Miles Round Manchester*, London, 1795, repr. 1968, p. 575.



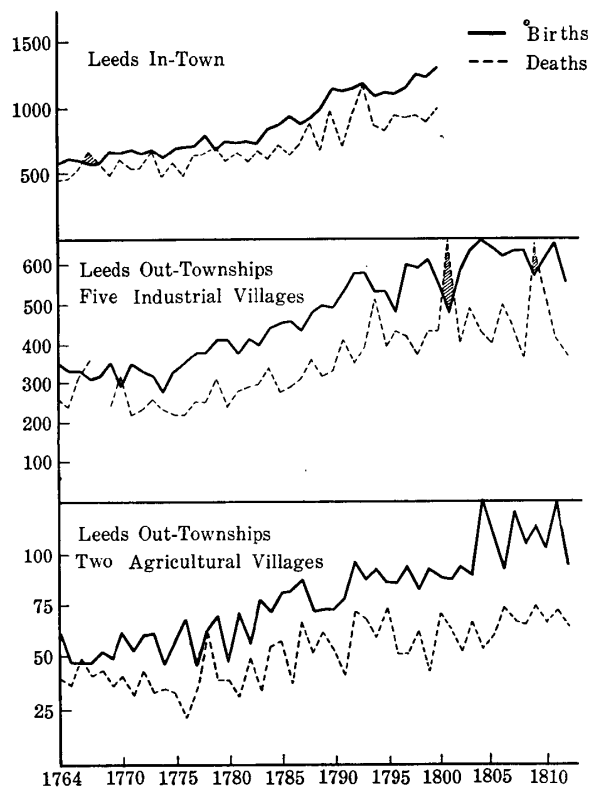


Fig. 8. Births and Deaths

they were so deliberately devised and detailed as to give decennial averages of percentages of additions as follows; 11.5% (baptisms) and 5.1% (burials) for 1764–1770, 11.4 and 3.2% for 1771–1780, 13.7 and 1.3% for 1781–1790 and 11.6 and 4.5% for 1791–1800.<sup>21</sup>

What seems clear from Fig. 8, which gives births and deaths in the in-town, five industrial villages and two agricultural villages<sup>22</sup> in the Parish, is that the addition makes the balance much better for births over deaths than the balance between baptisms and burials, and that the whole position in the Parish, above all, the position of the in-town during the latter half of the eighteenth century, is much improved. Another interesting point revealed in the figure is that whilst in 1766 or 1767 deaths exceed births in the three areas, deaths thereafter show a clear sign of downward trend for a decade or so, and never exceed births, at least until 1800 in every area.

In pre-census times, Leeds had some surveys of population, of which James Lucas', based on the calculations by R. Price and W. Wales, made in 1775, gives the approximate populations both in the in-town and some of the out-townships,

<sup>21</sup> F. BECKWITH, *op. cit.*, pp. 141, 146.

<sup>22</sup> The five industrial villages are Armley, Beeston, Bramley, Holbeck and Hunslet and the two agricultural villages are Chapel Allerton and Farnley.

with three other rural parishes, 'at a greater distance'<sup>23</sup>, from Leeds. We have to infer the birth and death rates in the last quarter of the eighteenth and the beginning of the nineteenth centuries, on the basis of this and other surveys of population, together with the Census Returns for 1801 and 1811, and of the revised baptisms and burials calculated above, although the degree of reliability in the surveys of the population must remain an open question.

As shown in Table I,<sup>24</sup> for the in-town of Leeds, birth rates at three moments in time, when the favourable balance for births over deaths was being established, namely, 1771, 1775 and 1801, were kept fairly high, over 39 per thousand. On the other hand, there appeared a tendency for the death rates to decline in the period. Birth and death rates in the five industrial out-townships in 1775 were higher than those in the two agricultural out-townships, though the difference in the rates between the two areas is not so large as in other regions, for example, in Nottinghamshire.<sup>25</sup> A curious point, worthy of notice, is that at the beginning of the nineteenth century, the birth rates in the industrial villages were lower than the agricultural villages. This phenomenon might in all probability be due to the

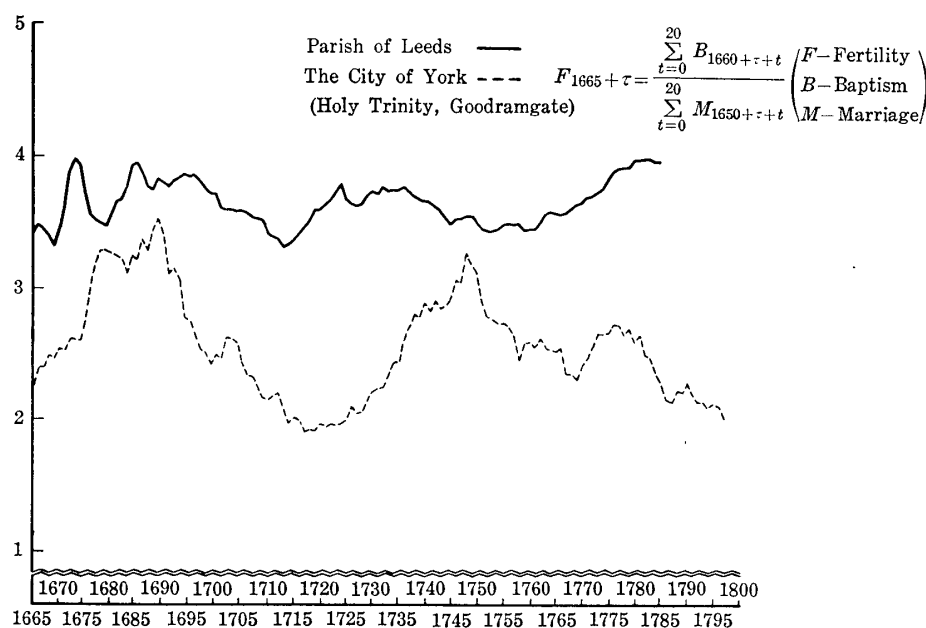


Fig. 9. Fertility

<sup>23</sup> James LUCAS, *An Impartial Inquiry into the Present State of Parochial Registers; Charitable Funds; Taxation and Parish Rates*, Leeds, 1791, Table Second facing p. 67.

<sup>24</sup> For the approximate population in the in-town of Leeds, see F. BECKWITH, *op. cit.*, p. 177, App. A, Table I. The birth and death rates in 1775, 1801 and 1811 are calculated from the following data; James LUCAS, *op. cit.*, p. 67 and the Census Returns of Great Britain for 1801 (pp. 449-50) and 1811 (pp. 425-6). The figures for Armley include those of Wortley and the figures for Chapel Allerton also include those for Potter Newton. Exactly speaking, births and deaths for three other rural parishes in the West Riding are not births and deaths but baptisms and burials.

<sup>25</sup> J. D. CHAMBERS, "Vale of Trent", p. 55.

TABLE I. BIRTH AND DEATH RATES (Five-yearly averages, per thousand)  
PARISH OF LEEDS

	(1771)					(1775)				
	Approx. Popn.	Births	Rate ‰	Deaths	Rate ‰	Approx. Popn.	Births	Rate ‰	Deaths	Rate ‰
Leeds In-Town	16,380	668.6	40.8	566.1	34.6	17,117	679.5	39.7	568.0	33.2
Leeds Out-Townships (Industrial Villages)										
Armley						2,609	91.6	35.1	37.0	14.2
Beeston						862	40.3	46.8	34.1	39.5
Bramley						1,378	41.2	29.9	34.7	25.2
Holbeck						2,055	58.6	28.5	55.1	26.8
Hunslet						3,825	100.7	26.3	75.9	19.9
Total						(10,729)	(332.4)	(31.0)	(236.8)	(22.1)
Leeds Out-Townships (Agricultural Villages)										
Chapel Allerton						1,352	35.4	26.2	20.0	14.8
Farnley						540	21.8	40.4	12.8	23.7
Total						(1,892)	(57.2)	(30.2)	(32.8)	(17.3)
Other Rural Parishes in the West Ridng										
A.						640	23	35.9	6	9.4
B.						582	13	22.3	11	18.9
C.						405	19	46.9	12	29.6
Total						(1,627)	(55)	(33.8)	(29)	(17.8)

TABLE I. (Continued)

	(1801)					(1811)				
	Total Popn.	Births	Rate %	Deaths	Rate %	Total Popn.	Births	Rate %	Deaths	Rate %
Leeds In-Town	30,669	1,204.8	39.3	932.8	30.4	35,951	—	—	—	—
Leeds Out-Townships (Industrial Villages)										
Armley	4,690	167.6	35.7	132.7	28.3	5,277	191.7	36.3	123.9	23.5
Beeston	1,427	65.2	45.7	63.3	44.4	1,538	60.0	39.0	65.0	42.3
Bramley	2,562	62.1	24.2	45.4	17.7	3,484	55.6	16.0	47.7	13.7
Holbeck	4,196	94.6	22.6	93.6	22.3	5,124	105.3	20.6	77.7	15.2
Hunslet	5,799	177.9	30.7	147.3	25.4	6,393	187.7	29.4	148.8	23.3
Total	(18,674)	(567.4)	(30.4)	(482.3)	(25.8)	(21,816)	(600.3)	(27.5)	(463.1)	(21.2)
Leeds Out-Townships (Agricultural Villages)										
Chapel Allerton	1,563	50.4	32.3	39.1	25.0	1,933	58.9	30.5	38.5	19.9
Farnley	943	40.0	42.4	20.9	22.2	1,164	48.7	41.8	30.9	26.6
Total	(2,506)	(90.4)	(36.1)	(60.0)	(23.9)	(3,097)	(107.8)	(34.8)	(69.4)	(22.4)

under-estimate in the number of births for the industrial villages, on account of the percentages of addition adopted which are to be concerned with the in-town only.

Clearly enough, the above rates of birth and death are not more than rough estimates, but it is likely that Leeds, or to be exact, the in-town of Leeds, had not lower but slightly higher birth rates than other provincial towns in the last quarter of the eighteenth century. To cite one instance; the town of Nottingham—of almost the same size in population, namely, 17,711 in 1779<sup>26</sup>—witnessed birth rates of 38.1 per thousand in 1739, 38.8 in 1779 and 38.2 in 1801.<sup>27</sup> Thus it may be said that the rapid growth of births in Leeds, beginning in the last quarter of the eighteenth century, is partly indebted to the higher birth rates, irrespective of the increase in the total population by immigration.

Further supporting evidence for this is supplied by the level of the marital fertility in the Parish of Leeds (Fig. 9), calculated by dividing the twenty-year moving averages of baptisms by the marriages in the twenty-year period half overlapping them. During the period under review, the marital fertility in Leeds remained substantially higher than that in a parish in the long-established city of York.<sup>28</sup> The city of York became an industrial backwater where the growth of population is supposed to have been stationary. Besides, Fig. 9 shows us clearly that the fertility in Leeds began to rise steadily sometime around 1760, reaching to the highest level since the middle of the seventeenth century in the 1780's; whereas that of the city of York declined significantly in the latter half of the eighteenth century.

One could easily hypothesize that the comparatively higher fertility in the Parish of Leeds must presumably be attributed to the lower age at marriage; and the evidence calculated from Paver's Marriage Licences,<sup>29</sup> if they could be relied upon, supports this. Mean age at first marriage of women contracted at Leeds Parish in the period between 1690 and 1714 was lower at 22.85 than in the city of York (23.58) and in other rural and urban areas in Yorkshire (23.45), albeit only slightly so. The same is also true of the age at marriage of men at Leeds. Mean age at marriage of men at Leeds (26.66) was the lowest of all; in the city of York (27.11) and in other rural and urban areas in Yorkshire (27.60).<sup>30</sup> (See Figs. 10-A and 10-B.)

<sup>26</sup> *Ibid.*, p. 21.

<sup>27</sup> *Ibid.*, pp. 54-5.

<sup>28</sup> Calculated from the Parish Registers of Holy Trinity Church, Goodramgate, York, 1573-1812, *The Pub. of the Yorkshire Parish Register Society* (hereafter *Y.P.R.S.*), Vol. XLI, 1911.

<sup>29</sup> *Paver's Marriage Licences* ed. by J. W. CLAY, Vols. I-III, *The Pub. of the Yorkshire Archaeological Society, Record Series*, Vols. XL (1909), XLIII (1911) and XLVI (1912).

<sup>30</sup> In the figures for age at marriage of men, only the figures of men married with 'Spinster' are included. Cf. Michael DRAKE, "An Elementary Exercise in Parish Registers Demography", *Econ. Hist. Rev.*, 2nd ser., Vol. XIV, No. 3, 1962, pp. 443-4. The degree of reliability in the registration of age at marriage in Paver's Marriage Licences seems not to be high, for the proportions of round numbers, for example, 20, 30 and 40 years of age are higher, which might not be realistic. It must be admitted, however, that the errors in the registration may be the same in every area.

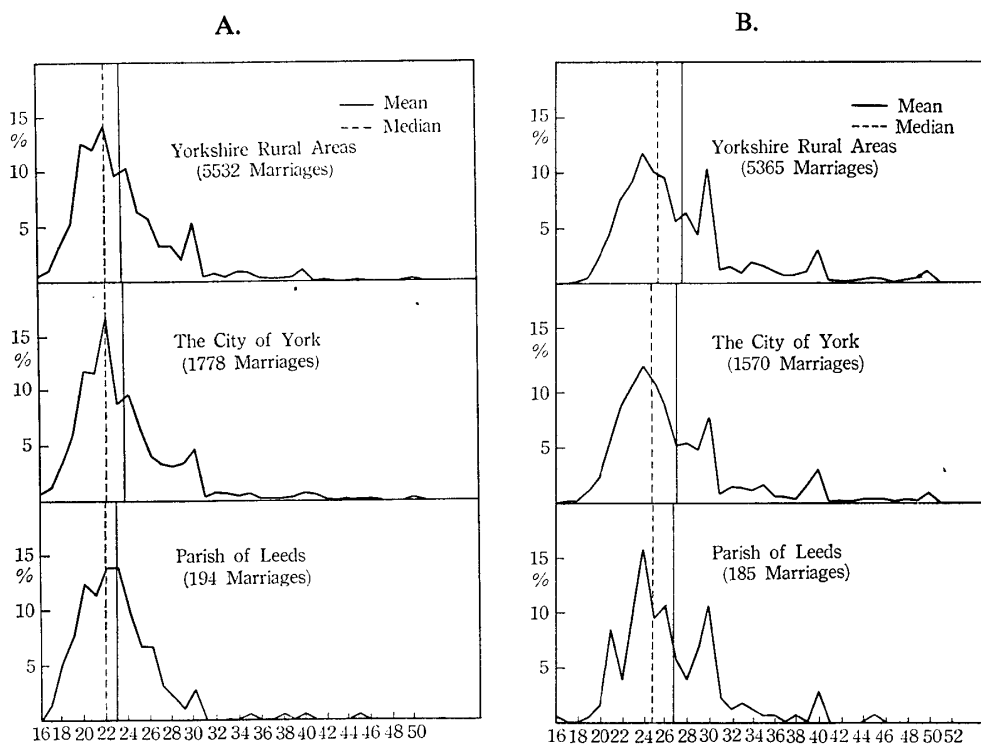


Fig. 10-A. Age at First Marriage of Women (1660-1714)

Fig. 10-B. Age at 'First' Marriage of Men (1660-1714)

We now have reason to believe that as early as the end of the seventeenth and the beginning of the eighteenth centuries, in the Parish of Leeds, there seems to be an increase in the birth rate or fertility, partly brought about by the lower age at marriage of both men and women. The causes of this are accounted for as follows; the economic and social barriers which restricted the opportunities for marriages, or kept age at marriage high, such as (a) the scarcity of employment opportunities as found in rural areas or in the long-established cities in an industrial backwater; (b) the custom of inheritance of land in the rural areas; or (c) the existence of the rigid system of apprenticeship,<sup>31</sup> were not so many in Leeds as in other areas. Thus there was a tendency to marry earlier and there was less celibacy, for marriage was associated with the setting-up of separate households, in the period under review. Moreover, the absence of these barriers made immigration, especially of younger age groups, from the surrounding villages into Leeds easy, thereby lowering the age structure of the population in

<sup>31</sup> In the in-town of Leeds, the compulsory enrollment and registration of apprentices disappeared by the beginning of the eighteenth century. See G. C. F. FORSTER, 'From the Foundation of Borough to the Eve of the Industrial Revolution' in *Leeds and its regions*, ed. by M. W. BERESFORD and G. R. JONES, The British Association for the Advancement of Science, Leeds, 1967, p. 140. See also J. WARDELL, *op. cit.*, pp. 70-71. With respect to the influence of the system of apprenticeship on the age at marriage, cf. J. D. CHAMBERS, *Population, Economy, and Society in Pre-industrial England*, p. 49.

Leeds.<sup>32</sup> This, coupled with the already existing tendency to marry early among the resident population, would account for the rising fertility from the middle of the eighteenth century.

As well as the increase (brought about by immigration) in the proportion of the younger age groups in the population, which is to raise the birth rate, another factor responsible for the same effect must be taken into account. Mention has already been made of the fall in the number of deaths between 1766 and 1777, and the decreasing death rates in the last quarter of the eighteenth century. The fall in the death rate, which might have resulted from the decrease in infantile and child mortality, must have exercised a not unimportant influence on the age structure. The infants and children in the period probably survived to increase

TABLE II. MARRIAGE RATE AND NUPTIALITY  
A. Marriage Rate (Five-yearly averages, Rate: per thousand)

	1775			1801		
	Number of M.	Approx. Popn.	M. Rate	Number of M.	Total Popn.	M. Rate
Parish of Leeds	317.6	29,941	10.61	541.8	53,162	10.19

B. Nuptiality (1775, per cent)

Leeds In-Town	36.9
Leeds Out-Townships (Industrial Villages)	
Armley	—
Beeston	—
Bramley	35.9
Holbeck	39.5
Hunslet	39.4
Total	(38.7)
Leeds Out-Townships (Agricultural Villages)	
Chapel Allerton	34.7
Farnley	33.9
Total	(34.5)
Other Rural Villages in the West Riding	
A.	34.2
B.	32.7
C.	32.1
Total	(33.1)

<sup>32</sup> If James LUCAS' survey of population in 1775 could be relied upon, his table supports to some extent this hypothesis. The proportions of the younger age groups (under 20 years of age) were 43.7% in the in-town, 47.3% in the three industrial out-townships, 47.8% in the two agricultural out-townships and 36.0% in the three other rural parishes, 'at a greater distance', from Leeds. See J. LUCAS, *op. cit.*, Table Second facing p. 67.

the marriage groups, thereby bringing about high marriage rates, and subsequently high birth rates.

Marriage rates in the Parish of Leeds, in fact, as shown in Table II,<sup>33</sup> were higher than those in other rural parishes in Yorkshire or the industrial villages (9.5 in 1764, 8.4 in 1801), and the agricultural villages (9.2 in 1764, 7.4 in 1801) in Nottinghamshire.<sup>34</sup> It may be inferred that comparatively higher marriage rates, combined with higher nuptiality (the proportion of the married couples in the population), took an important role in pushing the level of the birth rate up in the last quarter of the eighteenth century. In any case, the truth seems to be that both the rising birth rate and the rapid growth of population in Leeds, in the last quarter of the century, were due to many factors such as the lower age at marriage, present as early as the beginning of the century, marital fertility increasing from the middle of the century, higher marriage rate, and higher nuptiality.

### III. MIGRATION

Migration of population, which has a close correlation to the factors of economic change and urbanization, could have exercised profound and diverse effects on the population change through its influences on the age structure, sex-ratio, fertility, and mortality in large towns like Leeds. The aim of this section is to investigate the extent of migration, that is to say, the proportion of immigrants in the gross increase of population, and is also to make an attempt to calculate from the marriage registers the extent and geographical distribution of migration, though the migration in search of marriage partners may have no claim to represent all kinds of movement of population.

In the first place, just what was the contribution of immigration to the growth of population in Leeds? The figures in Table III of the proportion of immigration and natural increase, deduced from Lucas' survey, and the Census Returns, and births and deaths each year, clearly indicate the difference in the degree of migration which existed between the urban area, and the industrial and agricultural villages in the Parish. Between 1775 and 1801, the in-town had grown from 17,117 to 30,669,<sup>35</sup> of which increase 64.4% came by immigration. Unfortunately we have no data on the natural increase in the in-town in the first decade of the nineteenth century; and there is some reason to believe that the degree of immigration became less in the nineteenth century. We must notice, nevertheless, that so far

<sup>33</sup> The marriage rate of Leeds in 1801 is calculated by dividing five-yearly average (1796-1800) of marriages by the total population in the Parish of Leeds in 1801. The nuptiality is deduced from J. LUCAS' Table Second.

<sup>34</sup> The marriage rates in the three rural parishes in Yorkshire in LUCAS' Table are 7.81, 1.72 and 7.41 per thousand. As for the marriage rates in Nottinghamshire, see J. D. CHAMBERS, "Vale of Trent", p. 55. The marriage rate in a rural parish, Clayworth in Nottinghamshire, was very low at 6.9 per thousand at the end of the seventeenth century. See Peter LASLETT and John HARRISON, 'Clayworth and Cogenhoe' in *Historical Essays, 1600-1750, presented to David Ogg*, ed. by H. E. BELL and R. L. OLLARD, London, 1963, p. 182.

<sup>35</sup> J. LUCAS' Table and the Census Returns for 1801, p. 450.



TABLE III. NATURAL INCREASE AND IMMIGRATION  
PARISH OF LEEDS

	Appox. Popn. (1775)	Increase (1775-1801)					Total Popn. (1801)	Increase (1801-1811)					Total Popn. (1811)
		Gross	Natural	%	Immigration	%		Gross	Natural	%	Immigration	%	
Leeds In-Town	17,117	13,552	4,825.8	35.6	8,726.2	64.4	30,669	5,282	—				35,951
Leeds Out-Townships (Industrial Villages)													
Armley	2,609	2,081	1,279.4	61.5	810.6	38.5	4,690	587	541.3	92.2	45.7	7.8	5,277
Beeston	862	565	188.6	33.4	376.4	66.6	1,427	111	73.6	66.3	37.4	33.7	1,538
Bramley	1,378	1,184	373.3	31.5	810.7	68.5	2,526	922	149.8	16.2	772.2	83.8	3,484
Holbeck	2,055	2,141	584.9	27.3	1,556.1	72.7	4,196	928	214.7	23.1	713.3	76.9	5,124
Hunslet	3,825	1,974	1,135.5	57.5	838.5	42.5	5,799	594	369.3	62.2	224.7	37.8	6,393
Total	(10,729)	(7,945)	(3,561.7)	(44.8)	(4,383.3)	(55.2)	(18,674)	(3,142)	(1,348.7)	(42.9)	(1,793.3)	(57.1)	(21,816)
Leeds Out-Townships (Agricultural Villages)													
Chapel													
Allerton	1,352	211	404.3	191.6	-193.3	-91.6	1,563	370	214.7	58.0	155.3	42.0	1,933
Farnley	540	403	245.8	61.0	157.2	39.0	943	221	171.2	77.5	49.8	22.5	1,164
Total	(1,892)	(614)	(650.1)	(105.9)	(-36.1)	(-5.9)	(2,506)	(591)	(385.9)	(65.3)	(208.1)	(34.7)	(3,097)

as the in-town was concerned, the rate of immigration was unquestionably high in the last quarter of the eighteenth century; and immigration played a significant role in the growth of population and the rise of the birth rate in the period.

The proportion of immigration in the five industrial out-townships, 55.2% between 1775 and 1801 and 57.1% during the first decade of the nineteenth century, was also high, though about 10% lower than the in-town. On the other hand, if the data used could be relied upon, of the two agricultural out-townships, Chapel Allerton experienced a very marked rate of natural increase, over 100%, some of which must have subsequently moved out to the in-town, industrial out-townships in the Parish, or to other places outside the Parish. Between 1801 and 1811, the agricultural out-townships could only reproduce three fifths of their population, but, on the whole, it seems likely that the agricultural villages depended less than the urban and industrial areas upon the outside to keep them alive. This might have been caused by the lower death rate enjoyed by the agricultural out-townships rather than by the higher birth rate (see Table I). At any rate, whatever the motives for immigration into Leeds may have been, we may safely say that in the last quarter of the eighteenth century and at the beginning of the nineteenth century, more than half of the increase in population came by immigration,<sup>36</sup> so that migration made a large contribution to the growth of population in Leeds, more especially, in the in-town.

Important as migration of population in search of employment and housing was, we have no data to calculate the extent and geographical distribution of migration apart from the marriage registers. It is convenient, however, to use the marriage registers as a source, for marriage meant the establishment of an independent family unit; thus movement of population in search of marriage partners may be regarded to some extent as a movement in search of opportunities for employment, in the period under review. Figure 11, which gives the five-year moving averages of the proportion of intra-parochial marriages (percentage of marriages in which both partners were in the parishes) in Leeds, one of the parishes in the city of York and the parish of Methley<sup>37</sup> about six miles south-east of Leeds, provides some interesting particulars of mobility of population in the three distinct areas.

The proportion of intra-parochial marriages in Leeds was substantially and constantly higher, over 80% of all the marriages, than in the other parishes. Although there appear rising trends in the percentages of intra-parochial marriages in the city of York and the parish of Methley as the eighteenth century went on, they are subject to sharp fluctuations at a considerably lower level than Leeds throughout the period, especially in the first half of the eighteenth century. Such a comparison may be fallacious, for the three places were not the same in area and size of popu-

<sup>36</sup> In the case of the town of Nottingham, the rate of immigration between 1739 and 1779 was 66% but it declined to under 60% between 1779 and 1801. J. D. CHAMBERS, "Vale of Trent", p. 21.

<sup>37</sup> The Registers of the Parish Church of Methley in the county of York, from 1560 to 1812, *The Pub. of the Thoresby Soc.*, Vol. XII, 1903.

TABLE IV. MARRIAGE HORIZON  
A. Parish of Leeds

		0~4 km		5~9 km		10~14 km		15~19 km		20~24 km		25~29 km		30 km—		Total
1700-1709	M	5	4.1%	24	19.7%	46	37.7%	12	9.8%	10	8.2%	4	3.3%	21	17.2%	122
	F	0	0	10	43.5	7	30.4	0	0	2	8.7	0	0	4	17.4	23
1710-1719	M	3	1.4	54	24.3	74	33.3	28	12.6	23	10.4	5	2.3	35	15.8	222
	F	0	0	19	25.0	33	43.4	15	19.7	3	3.9	0	0	6	7.9	76
1720-1729	M	0	0	41	22.7	73	40.3	28	15.5	11	6.1	7	3.9	21	11.6	181
	F	0	0	22	20.4	49	45.4	22	20.4	3	2.8	3	2.8	9	8.3	108
1730-1739	M	0	0	56	28.7	69	35.4	24	12.3	21	10.8	7	3.6	18	9.2	195
	F	0	0	33	28.4	48	41.4	17	14.7	12	10.3	1	0.9	5	4.3	116
1740-1749	M	1	0.5	52	28.3	64	34.8	23	12.5	19	10.3	5	2.7	20	10.9	184
	F	2	1.9	38	35.8	39	36.8	15	14.2	10	9.4	0	0	2	1.9	106
1750-1759	M	0	0	53	27.9	72	37.9	19	10.0	11	5.8	5	2.6	30	15.8	190
	F	1	1.6	26	40.6	22	34.4	7	10.9	3	4.7	0	0	5	7.8	64
1760-1769	M	0	0	30	18.1	58	34.9	27	16.3	16	9.6	4	2.4	31	18.7	166
	F	0	0	13	35.1	19	51.4	2	5.4	1	2.7	0	0	2	5.4	37
1700-1760	M	9	0.7	310	24.6	456	36.2	161	12.8	111	8.8	37	2.9	176	14.0	1260
	F	3	0.6	161	30.4	217	40.9	78	14.7	34	6.4	4	0.8	33	6.2	530

B. The City of York (Parish of Holy Trinity, Goodramgate)

		0~4 km		5~9 km		10~14 km		15~19 km		20~24 km		25~29 km		30 km—		Total
1700-1709	M	0	0%	1	2.9%	5	14.7%	2	5.9%	3	8.8%	1	2.9%	22	64.7%	34
	F	0	0	1	4.8	7	33.3	0	0	3	14.3	1	4.8	9	42.9	21
1710-1719	M	0	0	0	0	11	18.0	6	9.8	6	9.8	11	18.0	27	44.3	61
	F	0	0	1	2.6	5	13.2	4	10.5	3	7.9	8	21.1	17	44.7	38
1720-1729	M	2	3.6	2	3.6	6	10.7	6	10.7	3	5.4	11	19.6	26	46.4	56
	F	0	0	1	2.2	8	17.8	6	13.3	3	6.7	10	22.2	17	37.8	45

TABLE IV. B. (continued)

1730-1739	M	0	0%	1	2.7%	9	24.3%	4	10.8%	4	10.8%	2	5.4%	17	45.9%	37
	F	0	0	1	3.1	10	31.3	3	9.4	8	25.0	2	6.3	8	25.0	32
1740-1749	M	1	4.5	1	4.5	3	13.6	3	13.6	2	9.1	5	22.7	7	31.8	22
	F	1	7.7	0	0	1	7.7	2	15.4	2	15.4	1	7.7	6	46.2	13
1750-1759	M	1	10.0	1	10.0	1	10.0	0	0	0	0	0	0	7	70.0	10
	F	0	0	0	0	0	0	0	0	2	28.6	0	0	5	71.4	7
1760-1769	M	1	4.0	3	12.0	5	20.0	1	4.0	1	4.0	6	24.0	8	32.0	25
	F	2	50.0	0	0	1	25.0	0	0	0	0	1	25.0	0	0	4
1700-1769	M	5	2.0	9	3.7	40	16.3	22	9.0	19	7.8	36	14.7	114	46.5	245
	F	3	1.9	4	2.5	32	20.0	15	9.4	21	13.1	23	14.4	62	38.8	160

C. Parish of Methley

		0~4 km		5~9 km		10~14 km		15~19 km		20~24 km		25~29 km		30 km —		Total
1700-1709	M	0	0%	7	63.6%	1	9.1%	1	9.1%	1	9.1%	0	0%	1	9.1%	11
	F	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1710-1719	M	0	0	8	40.4	9	45.0	2	10.0	0	0	1	5.0	0	0	20
	F	0	0	1	25.0	3	75.0	0	0	0	0	0	0	0	0	4
1720-1729	M	3	15.0	8	40.0	6	30.0	3	15.0	0	0	0	0	0	0	20
	F	0	0	3	75.0	0	0	0	0	0	0	0	0	1	25.0	4
1730-1739	M	7	26.9	6	23.1	9	34.6	1	3.8	3	11.5	0	0	0	0	26
	F	1	14.3	4	57.1	1	14.3	0	0	1	14.3	0	0	0	0	7
1740-1749	M	3	13.0	12	52.2	6	26.1	1	4.3	0	0	0	0	1	4.3	23
	F	0	0	3	75.0	0	0	0	0	0	0	0	0	1	25.0	4
1750-1759	M	3	18.8	6	37.5	2	12.5	2	12.5	0	0	0	0	3	18.8	16
	F	0	0	3	60.0	1	20.0	0	0	1	20.0	0	0	0	0	5
1760-1769	M	3	15.0	8	40.0	3	15.0	0	0	1	5.0	1	5.0	4	20.0	20
	F	1	50.0	1	50.0	0	0	0	0	0	0	0	0	0	0	2
1700-1769	M	19	14.0	55	40.4	36	26.5	10	7.4	5	3.7	2	1.5	9	6.6	136
	F	2	7.7	15	57.7	5	19.2	0	0	2	7.7	0	0	2	7.7	26

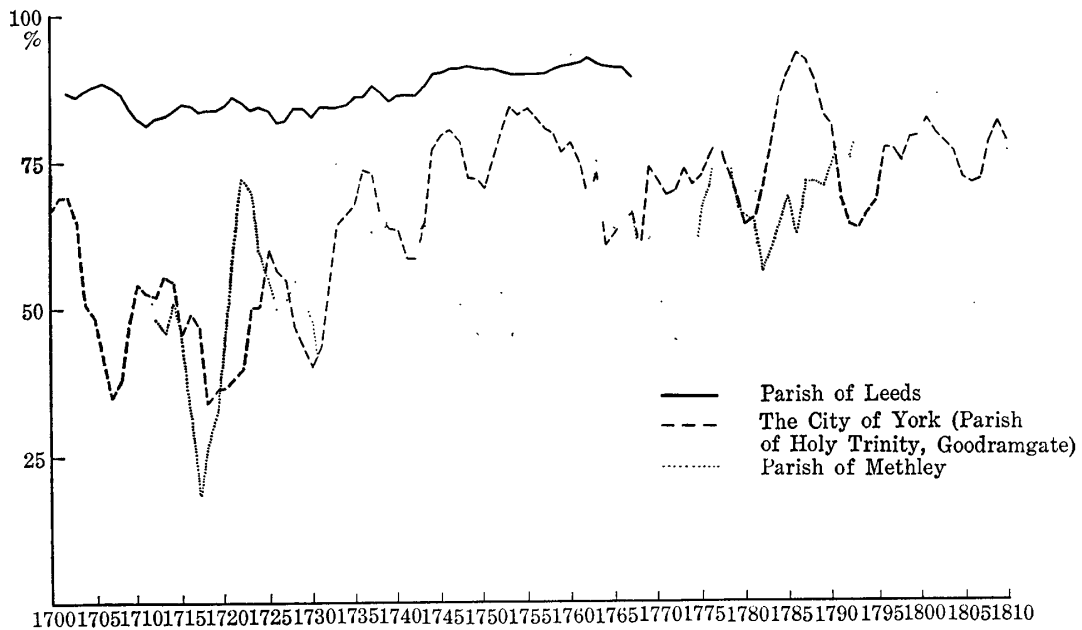


Fig. 11. Proportion of Intra-Parochial Marriages (Five-year moving average)

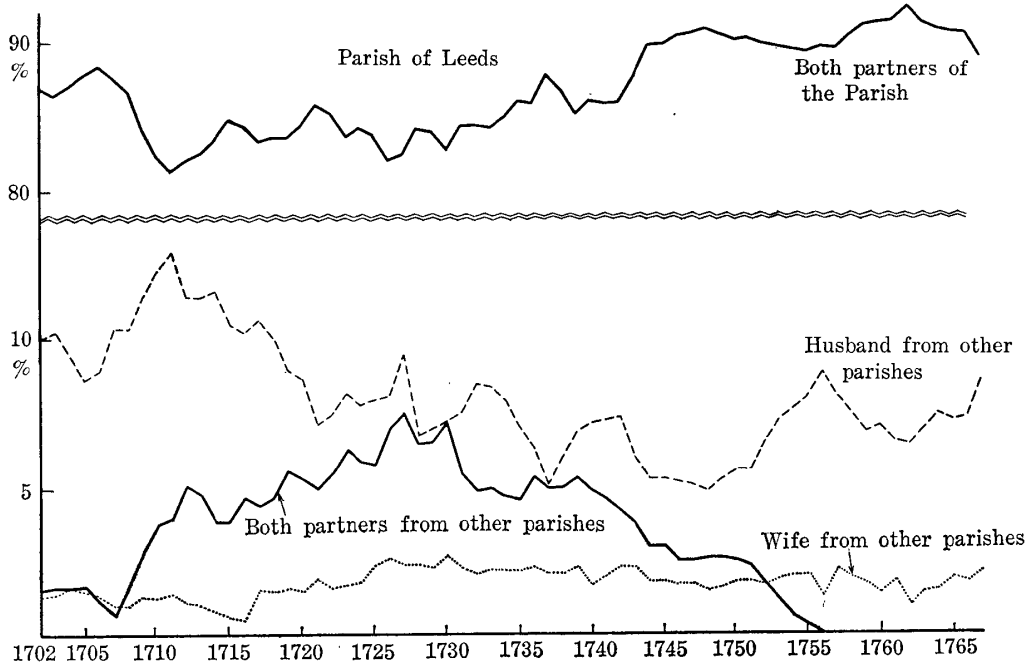


Fig. 12. Proportion of Intra- and Extra-Parochial Marriages (per cent) (Five-year moving average)

lation; but isn't it possible to infer that there had been sufficient reservoirs of population in the Parish of Leeds to allow for intra-parochial choice of partners as early as the beginning of the eighteenth century? One further comment may be made on the trend of mobility of the population of Leeds. From sometime around 1763 onwards, the proportion of extra-parochial marriages in which

one partner came from outside the parish was increasing (Fig. 12). If the immigration into the Parish of Leeds in search of marriage partners could be an indicator of the movement of population in general, migration of population into Leeds seems relatively to have increased in the latter half of the eighteenth century.

The tentative inference that there had been sufficient reservoirs of population in the Parish of Leeds, or that there were, not far away from Leeds, many rural parishes having a surplus of labour to spill over into the in-town, finds some warrant. Table IV gives the geographical extent of migration (marriage horizon) into Leeds,<sup>38</sup> the city of York, and the parish of Methley. It suggests that even if the distance of migration of women was generally shorter in every area, there existed a marked difference in the geographical distribution of the birth-places of partners between them. Leeds had the highest percentage of migration within 10~14 kilometres, whereas for the city of York, as much as 46.5% (bridegrooms) and 38.8% (brides) came from places over 30 kilometres distant. The smaller rural parish of Methley recruited most of its partners from places of the shortest distance—within 5~9 kilometres.<sup>39</sup>

The percentage of immigration into the Parish of Leeds from the greatest distance, of over 30 kilometres, was at its height (18.7 for males) between 1760 and 1769. This, along with the fact that the period, as noted above, also saw an increase in the proportion of extra-parochial marriages, ensures that both the proportion and the geographical extent of migration became enlarged in the latter half of the eighteenth century. As mentioned earlier, the Parish of Leeds was large in area, stretching about seven miles from both north to south and east to west, so that marriage partners in the Parish of Leeds must have come from the part of the Parish within a distance of seven miles, thereby changing the distribution. It should be noted, however, that Leeds could have drawn recruits from a narrower circle than other towns, and was well supplied with neighbouring rural areas providing it with surplus population.

It is interesting to note that the characteristics of migration of the population in Leeds in the latter half of the eighteenth century, which we could discover from the marriage registers, that is to say, the geographical extent of immigration being smaller than other towns and a higher rate of self-recruitment, hold largely

<sup>38</sup> The problem of between which points the measurement of distance should be made is difficult for such a large parish as Leeds. The margin for error would be larger in the case of the Parish of Leeds than in the other parishes. Moreover, the margin for error could be larger if the name of the settlement in the parish from which immigrants came is not given. The best method would be to measure from parish church to parish church, but we had to measure from the 'centre' of the Parish of Leeds to the 'centres' of the parishes given in the Registers. Although we should have used 'miles', we use kilometres for simplicity.

<sup>39</sup> With regard to the marriage horizon about the same period in a group of parishes in Yorkshire, see Bessie MALTBY, "Parish Registers and the Problems of Mobility", *Local Population Studies*, No. 6, Spring, 1971, pp. 41-2. Though the motives for migration are different in nature from this, as to the geographical origins of the apprentices of Sheffield in Yorkshire, see E. J. BUCKATZSCH, "Places of Origin of a Group of Immigrants into Sheffield, 1624-1799", *Econ. Hist. Rev.*, 2nd ser., Vol. II, No. 3, 1950, pp. 304-5.

true for the migration in general in Leeds in the nineteenth century. In 1841, according to the Census Returns, as much as 90% of the population in the Borough of Leeds had been born in the West Riding of Yorkshire, including Leeds.<sup>40</sup> By 1851, of the total inhabitants in the Borough of 172,270, 68.9% had been born in the in-town and Borough of Leeds,<sup>41</sup> whilst the percentages of self-recruitment in other large towns and boroughs in the West Riding were as follows; Bradford (45.0), Halifax (53.6), Huddersfield (52.8), Sheffield (63.7), and the City of York (46.1).<sup>42</sup>

Thus all the available evidence for migration indicates that immigration contributed much to the growth of population in Leeds, above all, in the in-town; but, the Parish of Leeds drew its recruits from within a shorter distance than other towns, and the rate of self-recruitment of the Parish was higher. It could be held, therefore, that within the Parish there was a great deal of movement of population from the agricultural out-townships to the in-town, or to the industrial out-townships. Thus the industrial centres in the Parish could have been indebted for their supply of labour both to the agricultural out-townships and to the neighbouring rural areas outside the Parish. These extra-parochial rural areas supplying labour to Leeds were mainly situated to the west or south-west of Leeds. Of the birth-places of immigrants in search of marriage partners in the Parish of Leeds, the following parishes were the chief sources of supply of immigrants. Calverly: (the highest percentage of 7.5 for males and 8.5 for females were from this parish): Guisley: (3.7 and 4.3%): Otley: (2.8 and 3.9%): Birstall: (3.6 and 3.9%): and Bradford: (3.7 and 4.1%). It seems likely that the populations in these areas were attracted into Leeds by the opportunities for employment that the industrial and commercial centres in the Parish of Leeds provided.

#### IV. ECONOMIC BACKGROUND OF THE POPULATION CHANGE

As is well known, Leeds was favourably located between the industrial areas in the West Riding, which produced woollen and worsted cloths, and one of the main sea-ports in the North of England, Kingston-upon-Hull. By the eighteenth century, specialization in producing particular types of woollen cloths was established in the West Riding, with the result that within a relatively narrow circle, there were industrial centres producing diversified woollen cloths, white and coloured cloth areas in the broad cloth (Northern Dozens) regions, narrow cloth (Kersey) areas and the worsted producing areas around Bradford.<sup>43</sup> Since about 60% of the woollen cloths produced in these areas was carried to the in-town of Leeds for finishing and export in the 1770's,<sup>44</sup> it can be said, without any exag-

<sup>40</sup> The Census Returns of Great Britain for 1841, p. 397.

<sup>41</sup> Session Papers, Vol. LXXXVIII, Pt. II, pp. 732, 737.

<sup>42</sup> *Ibid.*, p. 737.

<sup>43</sup> See 'West Riding clothing districts in 1775', the Dartmouth MSS, Leeds City Archives.

<sup>44</sup> R. G. WILSON, *Gentleman Merchants: The Merchant Community in Leeds, 1700-1830*, Manchester, 1971, p. 44.

generation, that in the latter half of the eighteenth century, the in-town of Leeds was the centre of the West Riding textile industries and dominated all the clothiers, merchants, and others engaged in the woollen trades in the West Riding.

The merchants and clothiers in Leeds could easily switch their orders as the demands shifted from one type of cloth to another, and were less vulnerable to the fluctuations in markets than those in other cloth-producing areas depending on one type only of cloth.<sup>45</sup> The West Riding industrial areas exported about 20% of all exports of woollen cloths from England in 1700, about half of them in the 1770's, and then as much as 60% in 1800.<sup>46</sup> Leeds which finished and exported about 60% of the woollen cloths produced in the West Riding, therefore, exported over one-third of all the woollen cloth exports from England in the last quarter of the eighteenth century. There seems to be no doubt that the opportunities for employment with which the in-town of Leeds provided the inhabitants in the out-townships and neighbouring rural areas were not only enormous in quantity but, also, more stable and constant, due to the diversified products dealt with there, than those in other areas.

With respect to opportunities for employment in Leeds, it is convenient to make reference to the level of literacy in Leeds at this juncture. Table V compares the literacy (shown by the percentage of those who could sign their names in the marriage registers) in the Parish of Leeds with that in the city of York,<sup>47</sup> five rural parishes in the West Riding,<sup>48</sup> two rural parishes in the North Riding,<sup>49</sup> and a parish in the East Riding.<sup>50</sup> Although there was too much fluctuation in the literacy in the city of York in the period, and the data for Leeds, covering only a decade from 1760 to 1769, are too scanty for one to be able to make any meaningful direct comparison between them, it is our distinct impression that the literacy of both males and females in Leeds seems to have been the lowest of all, and, contrary to our expectations, the second lowest was that of the five rural parishes in the West Riding. It is suggested that in the industrial centres or in the areas with more opportunities for employment, the level of literacy of both males and females was lower than in the rural areas where the opportunities for employment were supposed to be poor. Or could it be that the rising population in the industrial centres was out-pacing the existing educational facilities, and that the literacy there tends to have been in decline?

One further interesting datum supporting the above interpretation is supplied by Table VI, which gives the literacy of the marriage partners who immigrated

<sup>45</sup> *Ibid.*, p. 7.

<sup>46</sup> *Ibid.*, p. 44.

<sup>47</sup> The Parish Registers of St. Laurence, York, 1606-1812, *Y.P.R.S.*, Vol. XCVII, 1934.

<sup>48</sup> The Parish Registers of Adel (*The Pub. of the Thoresby Soc.*, Vol. V, 1895), Gargarve (*Y.P.R.S.* Vol. XXVIII, 1907), Swillington (*ditto.*, Vol. CXV, 1944), Thornton-in-Lonsdale (*ditto.*, Vol. XXXIX, 1931) and Waddington (*ditto.*, Vol. LXXXVIII, 1929).

<sup>49</sup> The Parish Registers of Oswaldkirk (*Y.P.R.S.*, Vol. CXXXV, 1970) and Wensley (*ditto.*, Vol. CXXX, 1966).

<sup>50</sup> The Parish Registers of Drypool (*Y.P.R.S.*, Vol. CXXV, 1961).



TABLE V. LITERACY  
Yorkshire

	City of York		W. Riding (5)		E. Riding (1)		N. Riding (2)		Leeds	
	M	F	M	F	M	F	M	F	M	F
1754-1759	100.0%	85.7%	67.3%	43.2%	69.2%	46.2%	69.5%	64.1%		
1760-1769	47.1	26.5	65.6	34.1	88.0	68.0	71.1	52.2	62.9%	29.0%
1770-1779	52.3	31.8	64.4	39.9	81.8	57.6	78.0	50.5		
1780-1789	80.0	62.9	67.8	48.1	74.1	29.6	76.1	52.3		
1790-1799	65.0	48.7	64.1	37.5	61.8	47.3	76.4	53.9		
1800-1809	98.6	92.9	55.9	34.4			70.5	53.7		
1810-1819							70.2	52.9		
1820-1829							76.2	49.0		
1830-1839							73.8	71.4		

TABLE VI. LITERACY  
Parish of Leeds

	(Brought up in Leeds)				(Immigrants)			
	Male		Female		Male		Female	
	Literate	Literacy	Literate	Literacy	Literate	Literacy	Literate	Literacy
1760	87	60.0%	36	23.4%	7	77.8%	—	—
1761	132	57.9	68	28.6	11	84.6	1	33.3%
1762	143	69.1	66	29.3	16	80.0	1	50.0
1763	145	59.7	51	20.0	13	81.3	3	60.0
1764	183	59.8	78	24.3	16	80.0	1	25.0
1765	152	60.8	77	29.1	14	66.7	2	33.3
1766	173	67.8	101	37.5	17	89.5	1	20.0
1767	113	55.9	64	29.8	14	77.8	1	20.0
1768	141	62.1	78	32.4	14	77.8	2	50.0
1769	70	70.7	42	39.3	6	60.0	1	50.0
Total	(1339)	(61.8)	(661)	(28.9)	(128)	(78.0)	(13)	(35.1)

from other places into the Parish of Leeds, and of those whose birth-places were in the Parish. What is striking about it is that the literacy of both males and females, who had been brought up in the Parish, was substantially lower than that of the immigrants, which seems to corroborate the argument that "literacy varied in inverse correlation with the opportunities for employment: the higher the demand for child labour, the greater the family income but the lower the standards of literacy",<sup>51</sup> or that "A swift rise in population (in the urban centres) put a strain on the admittedly improving educational facilities which they were unable to support."<sup>52</sup>

The period 1760–1769, for which we quoted the data for the literacy in Leeds, witnessed an upward trend of the Yorkshire woollen and worsted trades, after a long stagnation, due to the depression in the south European markets, Germany and Holland.<sup>53</sup> Since this recession in the trade in the 1750's, the Yorkshire woollen industry gradually turned to the American market; and the decade, from 1783, was the longest boom period ever experienced in the eighteenth century.<sup>54</sup> In this period, ever growing demands by the American market were one of the important factors responsible for changing the industrial organization, and for introducing the factory system, though only by a gradual process, in the West Riding textile industries. At the same time, this boom exercised another significant effect on the organization and the structure of the industries. The market which they could capture after 1783 was demanding worsted and fancy cloths produced around Bradford and Huddersfield,<sup>55</sup> rather than the woollen cloths (Broad cloths), the production and distribution of which Leeds had controlled and dominated. In addition, Leeds was losing its strong-hold in the organization of the West Riding textile industries as it was not easy for the long-established merchants in the in-town of Leeds, who had clung to the trade with the traditional European markets, to switch their activities to the new markets.<sup>56</sup>

Moreover, due to the strong opposition of the independent small-scale cloth dressers in the in-town,<sup>57</sup> the merchants of Leeds failed to mechanize the finishing process, one of the major functions Leeds had hitherto performed in the West Riding woollen industry. As a result, there arose merchant-manufacturers in areas other than the in-town of Leeds who were not hesitant to adopt mechanical inventions, and had not to rely on Leeds for finishing and distributing of the cloths they produced.

<sup>51</sup> Laurence STONE, "Literacy and Education in England, 1640–1900", *Past and Present*, No. 42, 1969, p. 116.

<sup>52</sup> *Ibid.*, pp. 93, 103. As for the level of the literacy in general in pre-industrial society, see P. LASLETT, *The World we have lost*, London, 1965, pp. 194–199.

<sup>53</sup> R. G. WILSON, *op. cit.*, p. 49.

<sup>54</sup> *Ibid.*, p. 32.

<sup>55</sup> *Ibid.*, pp. 118, 128–30.

<sup>56</sup> *Ibid.*, pp. 115–6.

<sup>57</sup> W. B. CRUMP, 'The Leeds Woollen Industry, 1780–1820', *The Pub. of the Thoresby Soc.*, Vol. XXXII, 1931, pp. 45–7, 327.



Fig. 13. Number of Poor Apprentices taken on by the Masters in the In-Town (Textiles Industries) (Five-year moving average)

Thus at the beginning of the nineteenth century, the factory system diffused in the industrial out-townships south of the in-town, or other industrial centres in the West Riding,<sup>58</sup> and deprived the in-town of the functions hitherto performed exclusively by it in the West Riding textile industries. This is clearly shown by the decrease in the tolls paid for the transport of wool, cloths and dye-stuffs into Leeds, in the Aire and Calder Navigation Account.<sup>59</sup> It is also indicated by Fig. 13, which shows the number of poor apprentices taken on by masters engaged in textile industries in the in-town.<sup>60</sup> The latter suggests that the peak of employment for poor apprentices was sometime between 1780 and 1785, after which there was a drastic fall. By the 1820's, Leeds had almost entirely lost its important position as the centre where cloths produced by the West Riding woollen and worsted industries were finished and collected for export.<sup>61</sup>

Ironically, the 1820's saw the highest rate of population growth, 3.95% per annum, the highest rate the in-town of Leeds had ever experienced. It is worth noticing that the growth of population on the scale which took place between 1820 and 1830, "had a bigger impact numerically on the development of labour-intensive craft trades,"<sup>62</sup> such as food, drink, tobacco, dress, building than

<sup>58</sup> R. G. WILSON, *op. cit.*, pp. 96-7, 131-2.

<sup>59</sup> *Ibid.*, p. 144 and R. G. WILSON, "Transport Dues as Indices of Economic Growth, 1775-1820", *Econ Hist. Rev.*, 2nd ser., Vol. XIX, No. 1, 1966, p. 117.

<sup>60</sup> Leeds City Archives, Leeds Township Overseers of the Poor; Apprentice Register, 1726-1808, LO/AR/I, fos. 2-129. The apprentices whose masters paid £10 penalty for refusing them are not counted in the figures.

<sup>61</sup> R. G. WILSON, *Gentleman Merchants*, p. 130.

<sup>62</sup> W. G. RIMMER, "The Industrial Profile of Leeds, 1740-1840", *The Pub. of the Thoresby Soc.*, Vol. L, Pt. II, No. 113, Miscellany, Vol. 14, Pt. 2, 1976, p. 147.

“on new capital-intensive factory industries”<sup>63</sup>; and the largest proportion of the growth of population was employed in these small-scale handicrafts or shops.<sup>64</sup> The increase in the labour-intensive crafts in the in-town at the beginning of the nineteenth century took the form of further specialization within existing trades, and saw the advent of new crafts and trades which supplied everyday essentials, and the minor comforts of life.<sup>65</sup>

To sum up, it is suggested that between 1783 and 1820, the dominant position Leeds had enjoyed in the Yorkshire woollen industry had gradually been demolished. When the main force of the Industrial Revolution in the woollen and worsted industries was complete, Leeds had been by-passed, and the industrial out-townships in the Parish and other areas in the West Riding had more factories and mechanized industries. But after the 1820's, a great change took place in the economy of the in-town. The town economy broadened to include diversified trades that catered for the increasing effective demands in the industrialized “hinterland” around Leeds. The development in the region around Leeds thrust the town to fore as a regional, distributing centre,<sup>66</sup> and the town, therefore, no longer relied exclusively on the textile industries. Thus the change in the town economy in the 1820's made it possible for the in-town of Leeds to keep and feed its increasing population with the opportunities for employment provided by the proliferation of labour-intensive traditional handicrafts and small shops, rather than by the capital-intensive large-scale factories.<sup>67</sup>

<sup>63</sup> *Ibid.*, p. 147. The change in the industrial structure of the in-town of Leeds is clearly seen in the occupational distribution of the firms in Leeds. See W. G. RIMMER, *op. cit.*, pp. 143–5, Tables 3–5 and W. G. RIMMER, “Occupations of Leeds, 1841–1951”, *The Pub. of the Thoresby Soc.*, Vol. L, Pt. II, No. 113, Miscellany Vol. 14, Pt. 2, Table I facing p. 162. The large-scale factories in the textiles industries in Leeds were not few, but, in 1801, the number of firms classified as factories was less than a score. By the middle of the nineteenth century, the number was about 200. W. G. RIMMER, “The Industrial Profile of Leeds,” p. 147. The flax industry, in particular, had some big firms. In the boom period in the second decade of the nineteenth century, Leeds had seventeen flax-spinners with 50,000 spindles, 800 horse-power, and a labour force of 5,000. W. G. RIMMER, *Marshall's of Leeds, Flax Spinners, 1788–1886*, Cambridge, 1960, p. 125.

<sup>64</sup> “Report upon the Condition of the Town of Leeds and its Inhabitants. By a Statistical Committee of the Town Council, 1839”, *Journal of the Statistical Society of London*, Vol. II, 1839, p. 412. Despite an exceptionally high rate of population growth in this period, some industries in the in-town of Leeds experienced labour shortage after 1830. See W. G. RIMMER, *Marshall's of Leeds*, p. 193.

<sup>65</sup> W. G. RIMMER, “The Industrial Profile”, p. 136. For the growth of shop retailing in Leeds in this period, see D. ALEXANDER, *Retailing in England during the Industrial Revolution*, London, 1970, pp. 92–3, 96–7. Per cent increase in number of retail shops in Leeds from 1822 to 1842–51 is 315.

<sup>66</sup> W. G. RIMMER, “The Industrial Profile”, p. 136 and E. M. SIGSWORTH, ‘The Industrial Revolution’ in *Leeds and its regions*, p. 149.

<sup>67</sup> Among the new trades which had grown in the early nineteenth century, engineering and metal-making were operated on a larger scale than other handicrafts and shop-retailing. The machine-making developed in the in-town as an adjunct of the advancement of the factory system in the West Riding textile industries. At first, small spinners had allied spinning with textile machine-making, but in the nineteenth century, the textile engineering became a specialist activity. See W. G. RIMMER, *Marshall's of Leeds*, pp. 129, 233.

In addition, we have some reason to believe that in the same period, social mobility in the in-town was higher than in other industrial towns where the large proportion of population was employed in the factories. It was possible to set up crafts trades and small retail-shops with a small capital; and there were more possibilities for one to be economically and socially independent as a small 'master'. Thus we may conclude that the relatively high social mobility<sup>68</sup> which seems to have existed in the in-town of Leeds was one of the important factors in attracting population from the outside; and the rapid increase in population at the beginning of the nineteenth century was partly due to the stream of immigrants arriving in Leeds to set up the small crafts and shops.

#### V. URBANIZATION, INDUSTRIALIZATION AND POPULATION

In this final section, we will examine the extent to which urbanization and industrialization were reflected in various demographic indices in the in-town of Leeds.

At the beginning of the nineteenth century, the in-town of Leeds, in common with many other industrial towns in England, was faced with the problems of overcrowding and a fall in standards of public health.<sup>69</sup> From the standpoint of urbanization, Leeds was fortunate in not having any physical barriers and legal obstacles to bar the expansion of the built-up areas in the in-town. Thus a rapid increase in the town population was possible. Considerable areas of land in the in-town had been disposed of by sale to private individuals, and had been held by free-hold since the reign of James I.<sup>70</sup> There were no un-enclosed common fields, nor landowning monopolies.<sup>71</sup> This made the sale of the plots for building the houses easy. By virtue of the existence of these conditions, when urbanization was being accelerated, the expansion of the built-up areas in the in-town kept pace with increase in population. Thus the density of population in the in-town was not as high as in other large industrial towns at the beginning of the nineteenth century.<sup>72</sup>

However, of the 16,000 dwelling houses built between 1770 and 1840, 12,000 houses were cottages, or 'back-to-back-houses' for labourers and artisans.<sup>73</sup> The sanitary condition here was, of course, appalling. In the eastern part of the town, the East Ward, which had traditionally been densely inhabited by the working classes, there were many 'back-to-back-houses' and cellar dwellings. In the 1820's, about 5,000 Irish immigrants were settled in this congested area.

<sup>68</sup> The same was also true for the town of Birmingham in the early Victorian era. See Asa BRIGGS (ed.), *Chartist Studies*, London, 1959, p. 7.

<sup>69</sup> *Leeds Board of Health—Report of the Leeds Board of Health*, Leeds, 1833, pp. 10, 19.

<sup>70</sup> J. WARDELL, *op. cit.*, pp. 19–20.

<sup>71</sup> W. G. RIMMER, "Historical Survey", *Leeds Journal*, Vol. 24, 1953, p. 391.

<sup>72</sup> W. G. RIMMER, "Workingmen's Cottages in Leeds, 1770–1840", *The Pub. of the Thoresby Soc.*, Vol. XLVI, 1961, Miscellany, Vol. 13, Pt. 2, p. 172.

<sup>73</sup> *Ibid.*, pp. 180, 189.

They were employed in the hand-loom plaid weaving and flax-spinning, in filthy conditions.<sup>74</sup> The deterioration of the environment gradually extended to the outer wards as the factories and workshops sprang out from the old core of the town, and brought the rows of 'back-to-back' artisan dwellings with them. Increasing density and the encroachment of nuisance, the results of the spread of industry, gave rise to an 'urban exodus' of the upper class inhabitants of the town as early as the middle of the eighteenth century. In the latter half of the eighteenth century, this industrial expansion drove the merchants to the rural areas north of the town, or forced them to move westward within the in-town, where they created fashionable new streets in the Park Squares.<sup>75</sup> By the early nineteenth century, even the lower middle classes, shopkeepers and master craftsmen, made an attempt to erect superior terrace houses north of the town.<sup>76</sup>

Owing to the invasion of factories and workshops, with their train of workingmen's cottages, all efforts to retain comfortable plots for residence, or, at the least, to divide the town between the industrial sites and the residential squares, failed.<sup>77</sup> To some extent, every ward in the in-town was suffering from congestion and poor sanitation. This is mirrored in some of the indices of deaths. Figures of the average age at death from 1773 to 1812 for sample areas are given in Fig. 14. The examples cited are St. John's Church for the in-town, and Chapel Allerton for the agricultural out-townships. The latter seems to have been less influenced by overcrowding and insanitary conditions than the other areas. The technical objections to using average age at death as an index of the difference in population characteristics between the two areas are obvious, for it leaves out of account the difference in the age structure of population between the two areas at any given moment. But for comparative purposes, the method appears to be in some degree satisfactory.

The comparison of the figures reveals that throughout the last quarter of the eighteenth and the beginning of the nineteenth centuries, the average age at death in the in-town was substantially lower, by roughly ten years, than in the agricultural village in the Parish. We also find a gradual downward trend over time in the five-year moving average of age at death in the in-town; and it may be that an acceleration of urbanization and environmental factors might have contributed to this, provided that there was no sudden change in age structure during the period under review. The same trend is clearly found in the age-specific distribution of death (per thousand proportion of deaths in each age group) found in Fig. 15. Three areas in the Parish, the in-town, the industrial out-township

<sup>74</sup> R. BAKER, *Report upon the Condition of the Residences of the Labouring Classes in the Town of Leeds in the West Riding of York*, Leeds, 1842, p. 15 and "Report upon the Conditions of the Town of Leeds and of its Inhabitants", p. 409.

<sup>75</sup> M. W. BERESFORD, 'Prosperity Street and Others; An Essay in Visible Urban History' in *Leeds and its regions*, pp. 190-3.

<sup>76</sup> W. G. RIMMER, "Alfred Place Terminating Building Society, 1825-1843", *The Pub. of the Thoresby Soc.*, Vol. XLVI, 1962, pp. 307-9.

<sup>77</sup> M. W. BERESFORD, *op. cit.*, pp. 193-4.

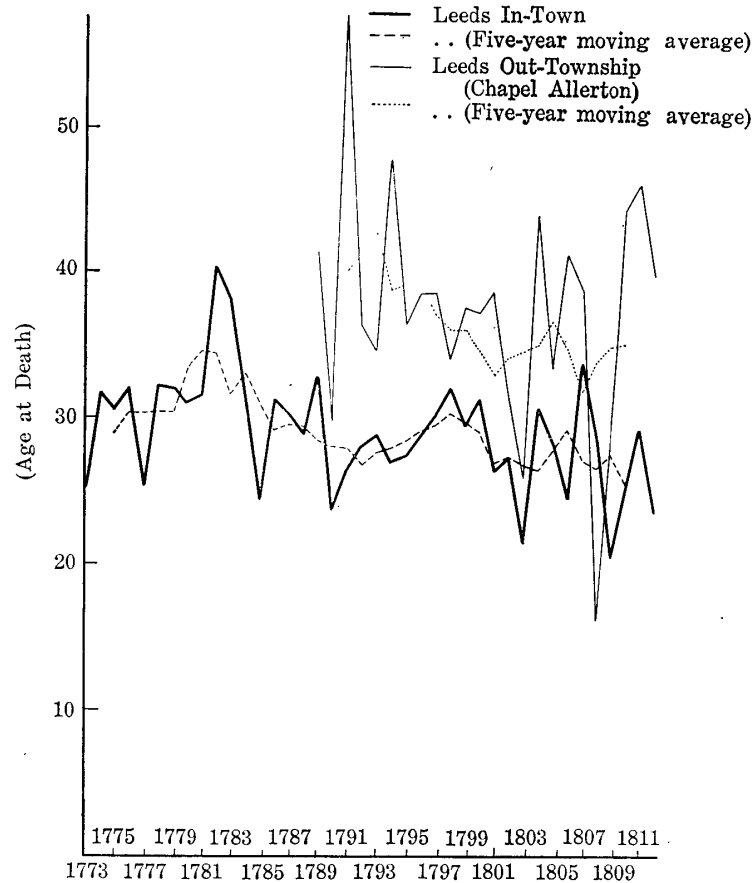


Fig. 14. Average Age at Death

(Bramley) and the agricultural out-township (Chapel Allerton) witnessed their own peculiar distributions of death. The urban area has a high proportion of deaths in the younger age groups as against lower rates in the older age groups, while the agricultural village shows the opposite tendency, and the industrial village lies roughly midway between the two.

The effects of overcrowding, and deterioration of the environment, brought about by the progress of urbanization, can be seen in Fig. 16, which compares the proportionate mortality ratio between the three causes of deaths: consumption,<sup>78</sup> small-pox and senile decay in the urban area, with that in the agricultural out-township. The proportion of deaths from consumption and small-pox in the in-town were on the whole higher than that in the agricultural out-township, and this seems to reflect the unhealthy conditions prevailing in the urban area, such as the lack of ventilation and the malignant state of the atmosphere, in the crowded cottages and filthy workshops. On the other hand, the number of deaths from old age, in the agricultural village, which was free from these conditions, exceeded that in the in-town.

<sup>78</sup> The disease, 'decline', is also included in this.

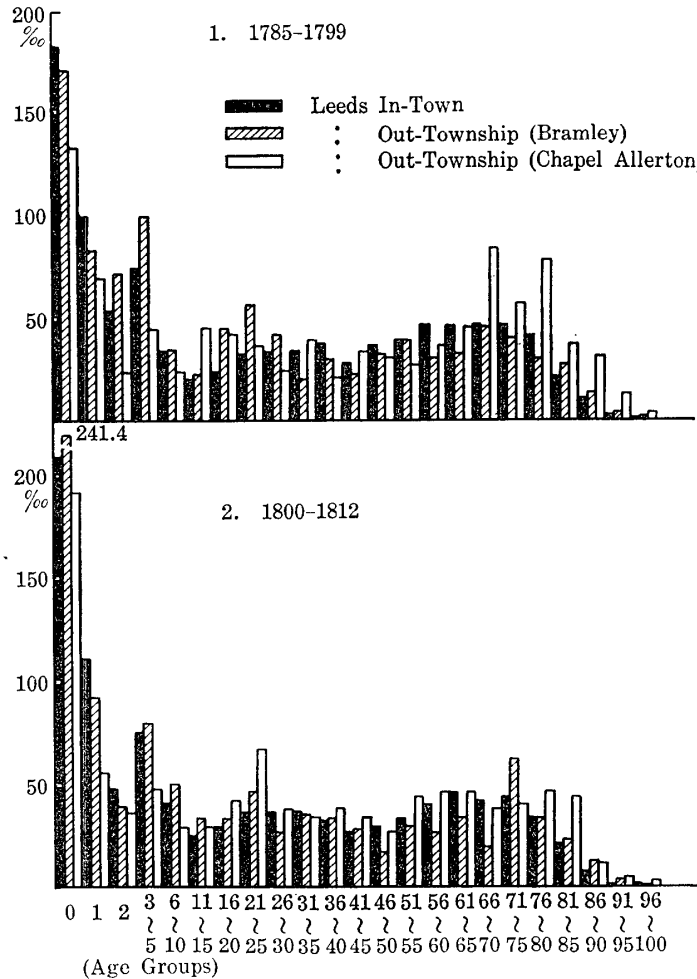


Fig. 15. Age-Specific Distribution of Death (per thousand)

Similarly, a comparison of infantile mortality—one of the sensitive indices of environmental factors—in the three sample areas reveals the influences of industrialization and urbanization on the population. Unfortunately we have no data from which to deduce the infantile death rate in the in-town, and have to use that of the industrial out-townships (Bramley and Beeston) which we assume to have a similar tendency as that in the in-town. If it is admitted that the infantile death rate rises not only with the deterioration in environment, but, also, with the development of industrialization (in the way that increase in employment of females in mills or workshops makes them unhealthy, by which sickly children are born, and also takes females from their homes, which leads to the neglect of their children),<sup>79</sup> the level of the rate in the three areas as shown in Fig. 17, the industrial out-townships, the agricultural out-township and a rural parish of Methley, in the order of their height, would suggest the degree of the effects of urbanization

<sup>79</sup> R. BAKER, *op. cit.*, p. 40.



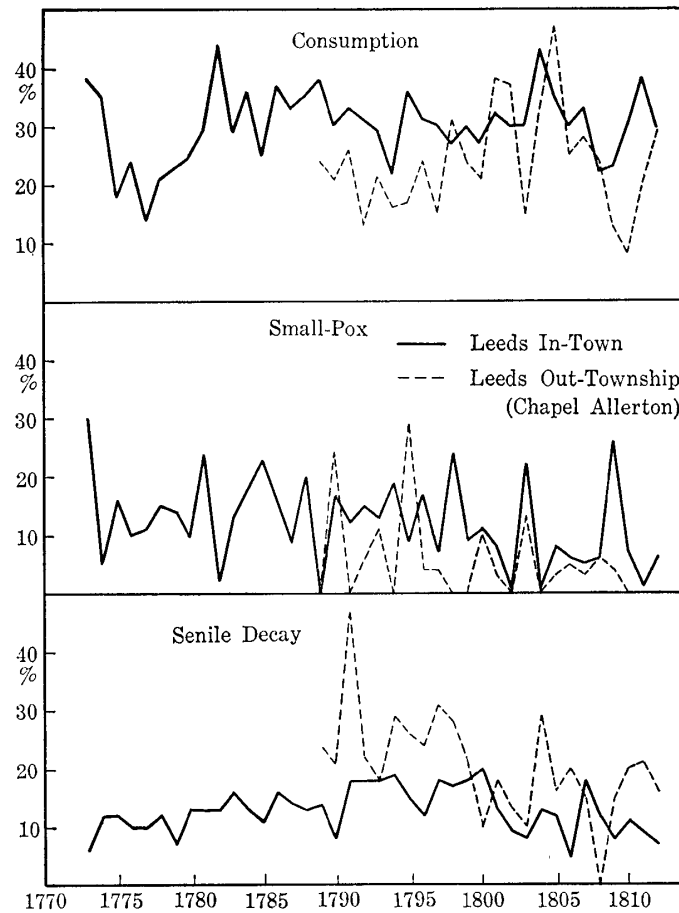


Fig. 16. Proportionate Mortality Ratio

and industrialization on population.

Throughout this paper, the enquiry has been mainly confined to finding the quantitative aspects of the history of an English town during the Industrial Revolution, rather than to the analysis of the qualitative structure of its economic development; and on account of the size of the population under discussion, we had to make an aggregative rather than a nominative analysis of the population. All that has been assumed is that the drawbacks in the source materials on which this study has been based are not significant enough to undermine the conclusions we have drawn. We would like now to illustrate what seem to us to be some of the significant results deduced about the relation between urbanization, industrialization and population.

In the town of Leeds, it would appear that industrialization, if we use the word to mean the development of mechanized industries, exercised an indirect rather

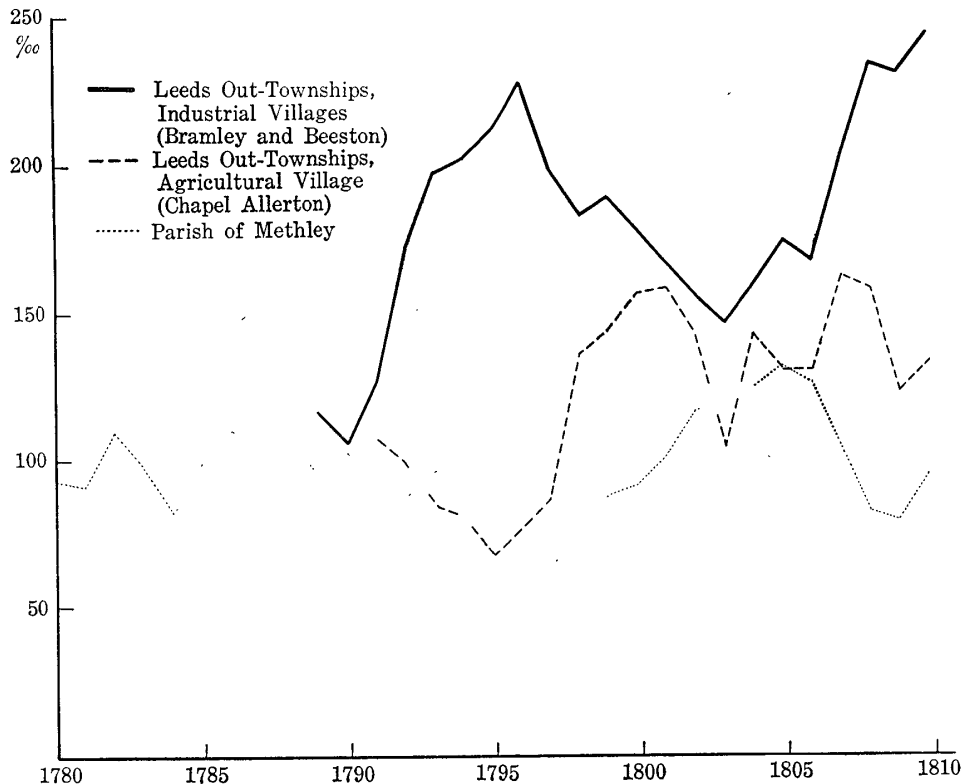


Fig. 17. Infantile Mortality (expressed as per thousand of baptisms)  
(Five-year moving average)

than a direct influence on the growth of urban population.' In the first place, before industrialization began in the West Riding woollen cloth producing areas, the in-town of Leeds, which had been the centre of finishing and collecting for export of the cloths produced around it, had attracted surplus population from the neighbouring rural parishes. The in-town also drew population into the out-townships in the Parish and had sufficient labour for mobilization when the industrialization began to expand. In this sense, the growth of urban population has more claim to be regarded as a cause, than an effect of industrial expansion.

Secondly, while industrialization had been taking place in the West Riding, the factory system spread into the out-townships south of the in-town, and into other industrial centres in the West Riding, rather than in the in-town itself. Thus the industrial structure and the functions of the in-town were transformed. Now the town of Leeds no longer relied exclusively on the textile industries, but had become the regional and distributing centre for the West Riding industrial areas. It boasted not only the textile industries, but, also, the more diversified trades, which catered for the increasing population in the 'hinterland' around it. It may also be that at the beginning of the nineteenth century, the change of the town economy through the proliferation of labour-intensive traditional crafts and shop-keeping, rather than capital-intensive factories, sustained the growth of the urban

population, and made it possible for the expansive force of the population growth in this period to retain its momentum.

We may safely conclude that urbanization, or the growth of urban population itself—be it the indirect result of industrialization or not—must have taken one of the important roles in making a positive impact on the acceleration of industrialization. That is to say, firstly, conditions in the town attracted surplus labour from the rural areas where there were less opportunities for employment and, in all probability, where the level of income per capita was lower. The urban population had more opportunities for employment, and thereby increased their purchasing power and kept the level of income per capita high. On the other hand, compared with the rural population, town life gave rise to a different propensity to consume, because the inhabitants in the town “developed a taste for new types of goods, apart from the fact that many commodities must be purchased”,<sup>80</sup> and this increased the effective demands both in quantity and quality for industrial products.

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<sup>80</sup> D. E. C. EVERSLEY, ‘The Home Market and Economic Growth in England, 1750–1780’ in *Land, Labour and Population in the Industrial Revolution: Essays Presented to J. D. Chambers*, ed. by E. L. JONES and G. E. MINGAY, London, 1967, p. 215.