

ART. XVI – *Worker migration into Workington, Cumbria, based upon the Census Enumerators' Books for 1861, 1881 and 1891*

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**W**ORKINGTON, in the second half of the nineteenth century, underwent profound changes which were intrinsically linked to increasing prosperity brought about by industrialisation. In 1861 the town's population stood at 6,467 persons, by 1891 the population had increased by more than 350% to 23,749<sup>1</sup>.

The object of this study is to examine the role of worker migration in this change, both generally and specifically, by reference to particular occupational groups.

The study shall be related to other work of a similar nature and in particular to Ravenstein's Laws of Migration, which he based on the 1871 and 1881 census returns<sup>2</sup>. Three of these laws are of relevance: "The majority of migrants go only a short distance"; "Migrants going long distances generally go by preference to one of the great centres of commerce or industry"; and "Migration increases in volume as industry and commerce develop and transport improves"<sup>3</sup>.

### **Methodology and problems**

The data sources used were the Census Enumerator's Books<sup>4</sup>. The year 1861 was chosen as the base census because it was between that year and 1871 that Workington registered a population increase markedly greater than any previously in the century. Numerically, and probably also in percentage terms, this rise was without precedent in the history of the town. Between 1841, when the population was 6,045, and 1861 when numbers had reached 6,467, the increase was nearly 7%. During the ten years to 1871 this figure escalated to just over 30% as the population reached 8,413. By 1881 the population stood at 14,361, an increase of 70.7% from the 1871 figure, and in 1891 was 23,749, having increased by a further 65.4% since 1881.<sup>5</sup>

1891 marks the end of the period under study as the 100 year confidentiality law means that this is the most recent census available in full.

Owing to lack of time, the 1871 returns were omitted. Sampling was 100% throughout and the variables collected were place of birth and occupation.

The first problem to arise in collecting the data was the consistency or otherwise of the position of Workington's boundaries. In the returns Workington was taken as a district comprising the town and surrounding settlements, such as villages, hamlets and rows of pit cottages. Personal discretion based on local knowledge was employed to establish the limits of the town at each census (see Fig. 1). The majority of those under scrutiny lived well away from boundary areas so the results should not be affected to any vital degree by such "boundary" effects.

Interpretation of the returns threw up a number of problems. Firstly legibility, but as unreadable occupations and birthplaces were negligible in number their omission should not result in significant errors. In all cases either occupation or birthplace was

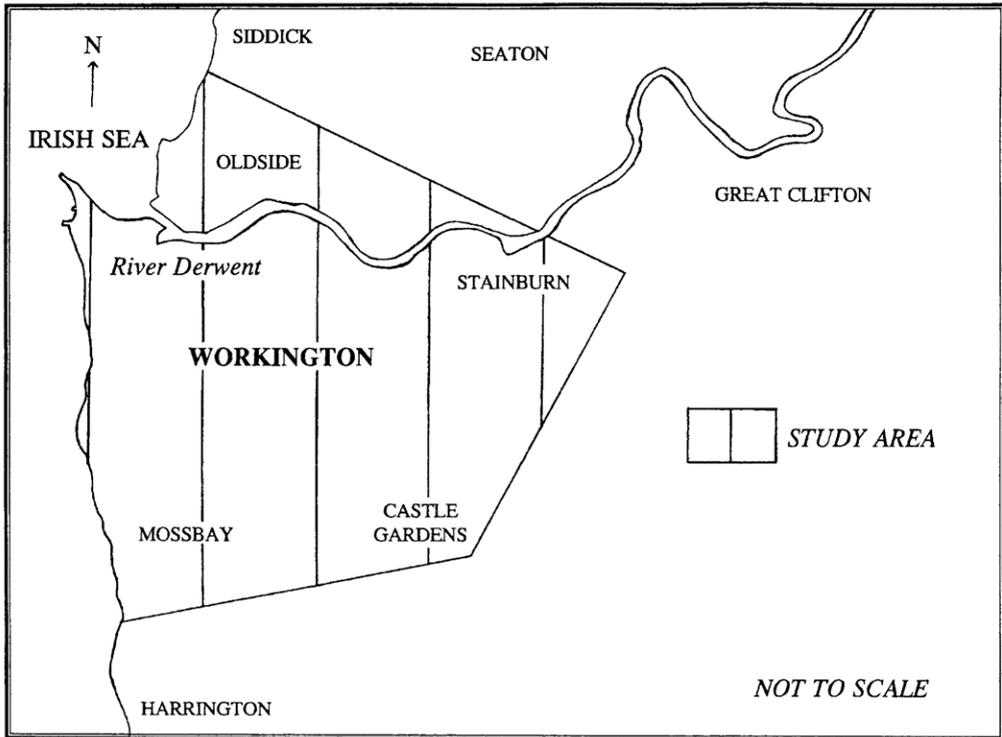


FIG. 1. The study area.

indecipherable and never both together. Secondly came the difficulty of assigning a measure of importance to those absent on census day. However, having sampled each census completely the error created by absentees appeared to be small. Not included in the extracted data, for obvious reasons, were visitors. Mariners' wives were taken into account if their birthplace was other than Workington. This could skew the results as their absent husbands could have come either from Workington or a place other than the birthplace of their wives. The proportion of mariners in the collected data was small, however, and any effect on the results should be similarly small. Farmers' wives were also taken into account as they frequently worked, and often the enumerators' returns stated this. Lastly, the migrant unemployed were included because they obviously hoped to find employment in or near to Workington. The expansion of the town during and after the period under study suggests that there were jobs available and the unemployed would not have remained so for long.

In some cases whether the person was a migrant worker was open to question. For example, children brought to Workington by their parents may have reached employable age after arrival and therefore did not move to the town for employment. Also noticeable in the returns were those children born outside Workington whose parents were born in the town. This probably took place because of tradition (family help with the birth), lack of amenities in Workington or the need for a healthy

environment for the newborn child. In other cases children were born while the parents were travelling outside Workington. Finally, the returns do not show where a person moved from, only where they were born, and some inhabitants may have changed occupation between censuses. For want of a simple alternative the term migrant will be retained and used, with the exception of Figures 2 to 11, throughout.

In many cases no counties were given for Welsh, Scottish or Irish migrants and for this reason the migrants from each country were lumped together, as were those from overseas. No distinction was made between those migrants from South Lancashire and those from North Lancashire, and in particular those from Lancashire-over-Sands which included Furness and Barrow. In the majority of cases the place of birth of such migrants was recorded as just Lancashire so no separation between North and South could be made.

The place of birth of an extremely low percentage of those extracted from the returns was given as England (0 in 1861, 13 in 1881 (0.1%) and 4 in 1891 (0.02%). See Appendix 1). Such people were included in the occupational groups graph but omitted from the migrant worker origin maps and the migrant worker origin maps of selected occupations. Such small fractions of the extracted data will have little effect on the accuracy of the results.

The occupational groups to which the data were assigned were based on those used by Saunders<sup>6</sup> with the addition of the categories of shipbuilding, mariners and miscellaneous. As well as aiding in identifying unfamiliar occupations, Armstrong<sup>7</sup> also helped in the classification of the data. Without going into great detail the manufacturing category consists of light manufacturing such as tin plate, mineral water and marble workers, and traditional industry such as saddlers, coopers, sailmakers, cartwrights, cabinet makers and so on. Dockworkers are under Labourers and Blacksmiths as opposed to Transport. The consistency of the classification across the censuses means that comparisons can be made without doubts over their accuracy.

## **Results and Analyses**

Marshall and Walton<sup>8</sup> give an 1861 population of 6,467, whereas the population sampled in the study is 6,609, a difference of just over 2%. In 1881 the difference is 1.5%, 14,361 to 14,587 and in 1891 0.1%, 23,749 to 23,779. All following calculations use the sampled population figures as opposed to the official ones.

### *Overall migrant worker origins – results and analysis*

In 1861 there were 1,589 migrant workers in Workington (See Appendix 1), some 24% of the town's population. By 1881 this figure had reached 31% (4,573 migrant workers) and remained at this level in 1891 (7,298). Bearing in mind the nature of the census returns it is clear that quantitative conclusions on migration flows are out of the question. For example, the 4,573 migrant workers in 1881 could consist of the 1,589 from 1861 and 2,984 new arrivals, or they may have all come since 1861.

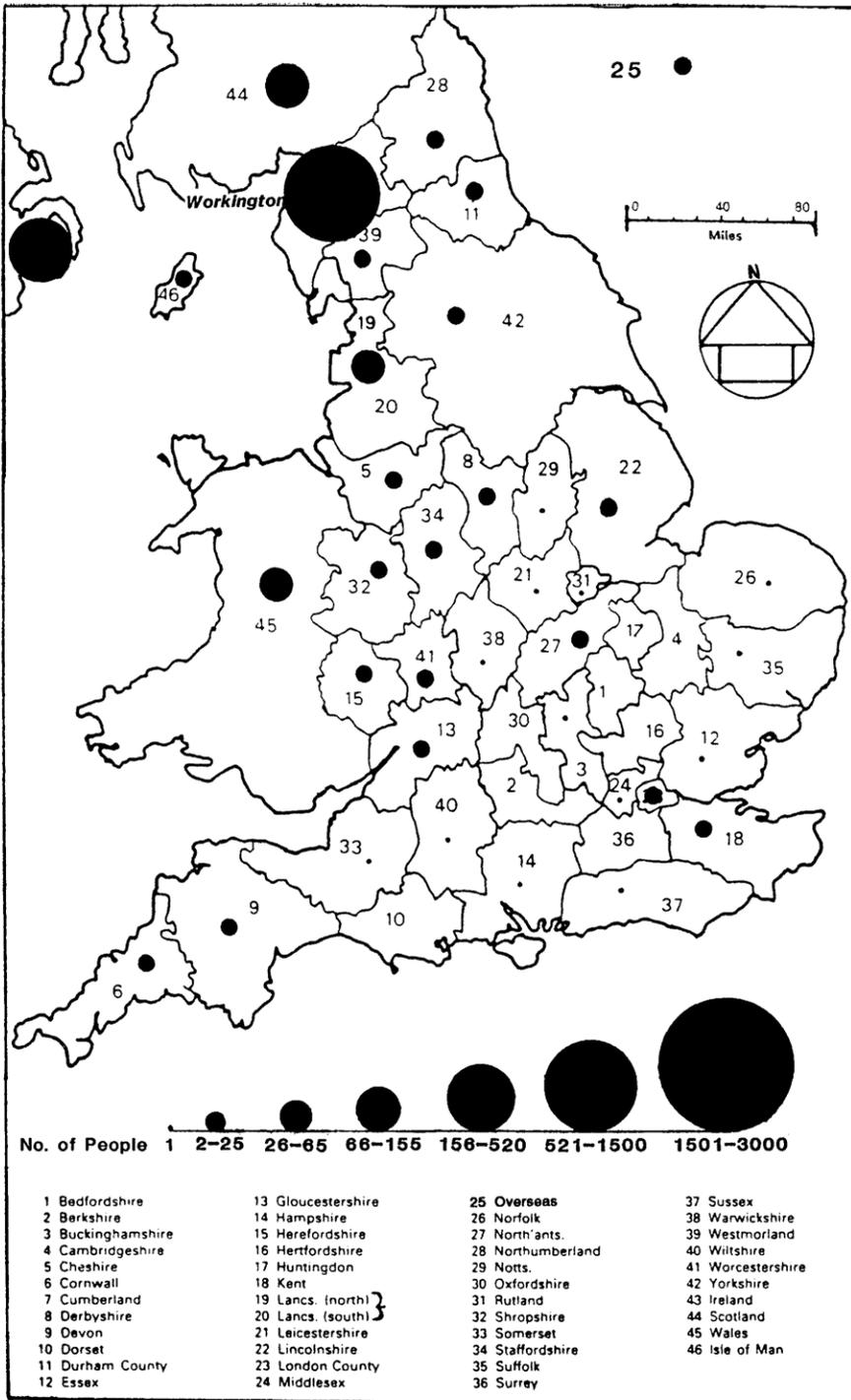


FIG. 2. Origin of Workington's non-indigenous worker population in 1861.

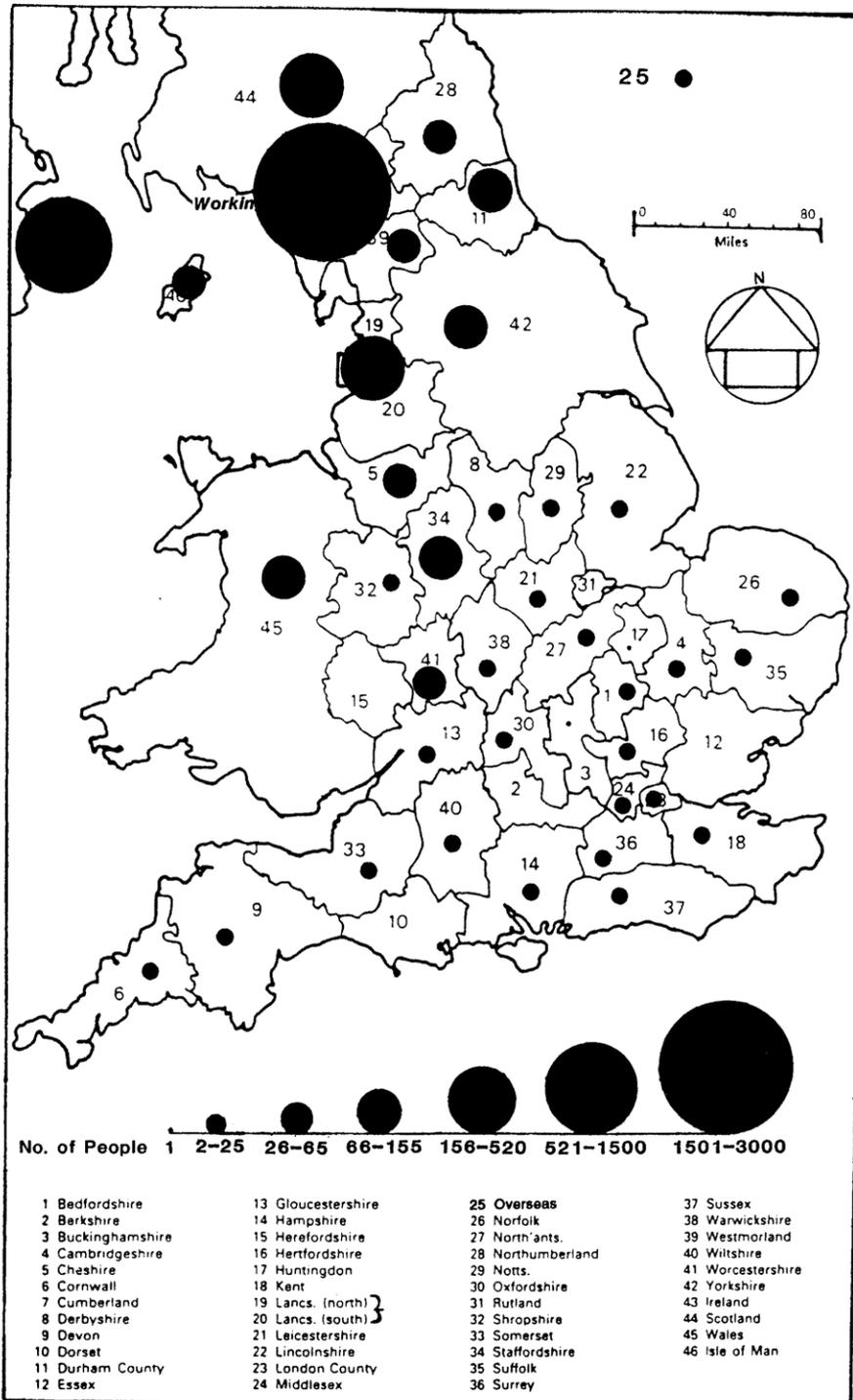


FIG. 3. Origin of Workington's non-indigenous worker population in 1881.

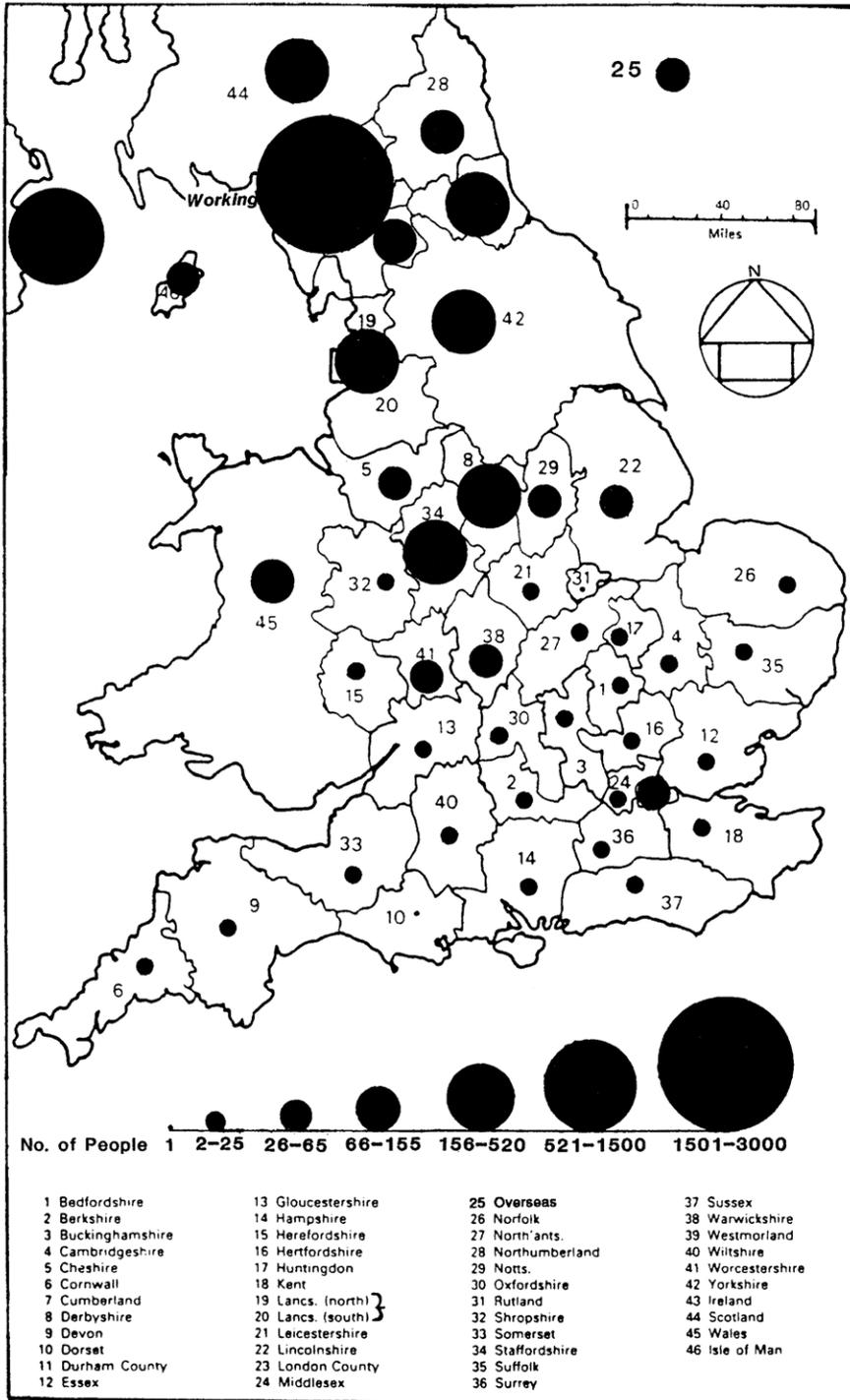


FIG. 4. Origin of Workington's non-indigenous worker population in 1891.

Figures 2, 3 and 4 illustrate the changing origin composition of Workington's migrant worker population. Recognising the danger in interpreting these maps it can be seen that over a period of time the sphere of attraction of Workington expanded and the migrant worker population increased. By 1891 Workington employed at least one migrant worker from each English county, Scotland, Ireland, Wales, the Isle of Man and overseas. In percentage terms of the number of migrant workers the contributions and changes judged as being significant are outlined in Table 1 (See Appendix 1 also).

TABLE 1  
*Extraction of figures deemed significant from Appendix 1*

Birthplace	1861			1881			1891	
	No. of migrants	No. of migrants as a % of the total no. of migrants	% change	No. of migrants	No. of migrants as a % of the total no. of migrants	% change	No. of migrants	No. of migrants as a % of the total no. of migrants
Cumberland	927	58.3	-19.7	1,776	38.6	+1.3	2,916	39.9
Ireland	308	19.4	+8.8	1,291	28.2	-10.6	1,286	17.6
Derbyshire				12	0.3	+4.1	320	4.4
Yorkshire	15	0.9	+1.8	122	2.7	+4.4	517	7.1
Durham	10	0.6	+1.3	87	1.9	+0.7	190	2.6
Scotland	103	6.5	+1.1	350	7.6	-1.9	420	5.7
Wales	41	2.6	-0.6	92	2			
Nottinghamshire				10	0.2	+0.5	52	0.7
Lancashire	64	4	+1.2	239	5.2	+0.7	430	5.9
Cheshire				59	1.3	-0.5	58	0.8
Staffordshire	13	0.8	+2.5	151	3.3			
Worcestershire	3	0.2	+0.7	41	0.9			

The figures in Table 1 suggest a strong relationship between distance and the number of migrant workers coming from that area. Collectively in 1861 Cumberland, Lancashire, Yorkshire, Durham and Scotland accounted for 70% of the migrant workforce, a further 19% coming from Ireland. In 1881 these figures were 56% and 28% respectively and by 1891 61% and 18%.

As would be expected, Cumberland appears to have been the richest source area, followed by Ireland, Scotland, Lancashire (much closer to Workington than today due to the existence of Lancashire-over-Sands) and Yorkshire. These findings are partly explained by the proximity of the three counties and Scotland to Workington.

Cumberland's surprising 19.7% proportionate drop (see Table 1) between 1861 and 1881 was probably the result of an upsurge of longer distance migration in this period (i.e. from outside Cumberland) (see Figures 2 and 3). The proportion of migrant workers from Cumberland stabilises between 1881 and 1891 (See Table 1) as migration from Cumberland to Workington reached this raised level.

The Irish situation meant that their migration into Britain was numerically large in the nineteenth century. Irish access to Workington was relatively straightforward

due to the regular passenger services between Dublin and Liverpool, Dublin and Workington, Liverpool and Workington, Belfast and Barrow and of course Belfast and Liverpool.<sup>9</sup> Irish labour was well known for its cheapness in wage terms<sup>10</sup> and so was employed readily in industrialising areas and towns such as Workington. Jackson<sup>11</sup> indicates that Irish migration into nineteenth-century Britain peaked in about 1860, declined slowly until around 1870, climbed again until 1877 and then dropped until the end of the century. In 1876 the number of Irish migrants entering Britain was 16,787, in 1877 this figure stood at 20,271 but by 1881 had declined to 10,623 and by 1891 stood at 4,142. The figures for Ireland in Table 1 appear to be in agreement with this trend.

Areas of anomalously low numbers of migrant workers appear to be Northumberland, Westmorland and the Isle of Man. All three of these areas were mainly rural, with the exception of Newcastle in Northumberland and its periphery. Consequently these areas were relatively isolated and lacked dispersion centres (towns and cities) as well as being sparsely populated. As with Ireland there was a passenger service between Douglas and Workington but this was relatively neglected by Manxmen and women. Having said this, Cumberland also was essentially a rural county yet it contributed the greatest part of the migrant workforce. Most of these migrants travelled very short distances (gathered from scanning my raw data) suggesting that distance decay operated both within and outside the county.

#### *Overall migrant worker occupation structure*

Figure 5 and Appendix 2 show the occupation structure of Workington's migrant workforce at each census. The rise of the iron and steel workforce can be seen to be prominent. In 1861 there were 122 migrant iron and steel workers, by 1881 this figure had risen to 1,522. As a proportion of all migrant workers iron and steel increased its share by over 25% to 33%. In 1891 there were 2,902 iron and steel workers, which represents a further increase of the proportion of iron and steel workers of over 6%.

The building of rail links to open access to the iron-ore fields inland and the coke supplies of Durham in the 1840s and 1850s (Newcastle to Carlisle, Carlisle to Maryport, Maryport to Workington and Whitehaven, Whitehaven to Cleator Moor<sup>12</sup>) led to the construction of two blast furnaces, in 1857, near to the harbour (Oldside Works).<sup>13</sup> Between 1861 and 1881 four major iron and steelworks were established: West Cumberland Iron and Steel Company (1862), Lowther Works (1870), Moss Bay Haematite Iron Company (1871) and the Derwent Haematite Iron Company (1874)<sup>14</sup>. In 1882 Cammells of Sheffield bought the Derwent Works and in the following year began the wholesale removal of plant and workforce from Dronfield, just south of Sheffield, in Derbyshire, to Workington.<sup>15</sup> In the first twenty years of the study period rail links were also increased. 1861 saw the opening of a direct route from Barrow to Durham over Bowes Moor. Iron-ore travelling from Furness to Durham and coke in the other direction. This line then became an artery of supply to Workington via the Eden Valley Railway (1862) and the Cockermouth, Keswick and Penrith Railway (1864–5). Further railway building in West Cumberland allowed the greater exploitation of iron-ore: Cleator and Workington Junction Railway (1880) and branches (in the 1880s)<sup>16</sup>. Bainbridge<sup>17</sup> states that the pig iron output of West Cumberland reached a maximum in 1882. Workington's iron

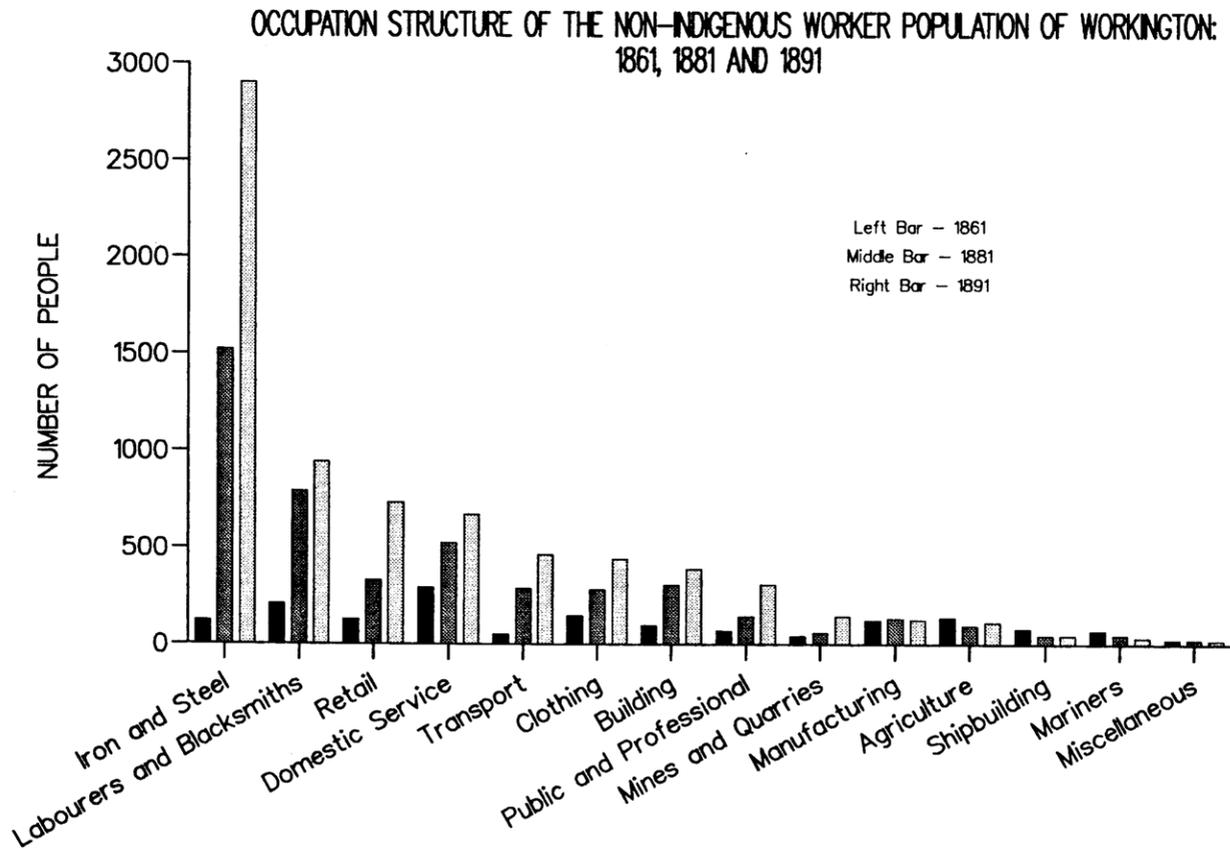


FIG. 5.

and steel making flourished briefly due to the suitability of local iron ores for use in the Bessemer process of large volume steel and iron making.<sup>18</sup> The railways and ports provided the vital import and export corridors. The invention of the Gilchrist-Thomas process in 1877 whereby steel could be mass produced from high phosphorous content, low grade, iron-ore put an end to West Cumberland's ascendancy. At the same time local ore supplies began to decline, imports of iron-ore from Spain and North Africa increased, competition within the iron and steel industry increased and growth in the iron and steel industries faltered in Workington.<sup>19</sup>

Figure 5 and Appendix 2 show a large rise in the importance of migrant iron and steel workers between 1861 and 1881 associated with the boom period of iron and steel making in Workington. The lower proportionate percentage growth between 1881 and 1891 ties in well with the beginnings of the decline of iron and steel in the town. In 1890 the Moss Bay Iron and Steel Company (formerly the Moss Bay Haematite Iron Company) became bankrupt, but was revived. The following year the West Cumberland Iron and Steel Company folded. By 1909 amalgamation to increase efficiency had taken place.<sup>20</sup>

Labourers and blacksmiths also exhibit this proportionate percentage drop. This category of migrants was probably employed in jobs ancillary to the iron and steel industry. Improvements in census enumeration over the period could also have had an effect. For example, some of those recorded as labourers or blacksmiths in each census may have worked in the iron and steel industry. Assuming an increasing accuracy of census recording over the period the percentage changes between the pairs of censuses should probably be less in both cases (less meaning closer to zero).

The decline of the proportion of domestic servants in the migrant workforce between both 1861 and 1881, and 1881 and 1891, is most likely due to a far greater migrant worker increase of the lower classes, who did not employ servants, than the upper, servant employing, classes. The rise of the retail sector in percentage terms between 1881 and 1891 could possibly reflect the shift of those who would formerly have been employed as servants.

Transport employment in the town at the time must have largely meant working on the railways. As outlined previously Workington became a focal point of the local railway network in the 1860s and '70s. The increased volume of railway traffic needed an enlarged staff to deal with it and this is reflected in the 3.1% increase in the proportion of migrant workers who were employed in transport. Further railway building in the 1880s meant that the 1891 proportion of migrant transport workers remained at the same level, having increased by 175 persons. The decline of the proportion of migrant workers employed in manufacturing is indicative of the establishment of industrial specialisation in Workington. In the twentieth century this over-specialisation caused grave economic difficulties which have still not been adequately countered.

The migrant agricultural workforce declined both numerically and proportionately between 1861 and 1881. Although numbers rose between 1881 and 1891 a further proportionate decline of 0.6% took place. This change is probably accounted for by increasing urbanisation, which would have led to decreasing amounts of agricultural land within the town boundaries, and increasing mechanisation in agriculture.

The results for shipbuilders can be explained by the closure of Workington's shipyards in 1866 and 1869, and their subsequent reopening in 1881.<sup>21</sup> Noticeable amongst the migrant shipyard workers (gathered from scanning the raw data) were those from

Harrington, a village two miles down the coast to the south. Shipbuilding was carried on in Harrington until 1881 when the yard was moved to Workington.<sup>22</sup> The 1861 to 1881 decline in shipyard workers is therefore indicative of the cessation of shipbuilding in Workington in 1869, and the levelling off of this decline between 1881 and 1891 was probably caused by the restarting of Workington's shipbuilding industry in 1881.

Finally, the figures for miscellaneous occupations appear to back up the suggestion, made for labourers and blacksmiths, that the census was increasing in accuracy during the period. Alternatively obscure trades and professions may have been dying out with the advent of industrialisation.

#### *Occupationally specific migrant worker origins – Results and analyses*

Iron and steel and domestic service were the chosen occupation groups under closer scrutiny. Iron and steel was chosen as it was the rise of this industry which caused the transformation of Workington. Domestic service was chosen with the expectation of being able to make a contrast with iron and steel workers.

#### *Iron and steel migrant worker origins – Results and analysis*

Figures 6, 7 and 8 and Table 2 (see Appendix 3 also) outline the changing origin distribution of Workington's migrant iron and steel workers. Similar to the overall migrant worker origin maps (Figures 2, 3 and 4) distance decay can be seen to have been in operation and the volume of migrants increases over time. Cumberland and Ireland exhibit trends similar to those in Table 1, probably for similar reasons.

TABLE 2  
*Extraction of figures deemed significant from Appendix 3*

Birthplace	1861			1881			1891	
	No. of migrants	No. of migrants as a % of all migrant iron and steel workers	% change	No. of migrants	No. of migrants as a % of all migrant iron and steel workers	% change	No. of migrants	No. of migrants as a % of all migrant iron and steel workers
Cumberland	25	20.5	-0.3	307	20.2	+5.3	739	25.5
Ireland	49	40.2	+1	627	41.2	-16.5	717	24.7
Lancashire	6	4.9	+0.2	78	5.1	+0.3	157	5.4
Cheshire	5	4.1	-1.6	38	2.5	-1.5	30	1
Durham	2	1.6	+0.2	28	1.8	+0.5	67	2.3
Scotland	13	10.6	-2.3	127	8.3	-3.1	150	5.2
Wales	10	8.2	-5.3	45	2.9	-0.2	78	2.7
Derbyshire	3	2.4	-2	7	0.4	+7.1	219	7.5
Staffordshire	7	5.7	+0.3	92	6	-0.7	154	5.3
Yorkshire	0	0	+3	46	3	+5.7	253	8.7
Lincolnshire	0	0	+0.1	1	0.1	+0.7	23	0.8
Nottinghamshire	0	0	+0.4	7	0.4	+0.8	34	1.2
Worcestershire	0	0	+1.6	24	1.6	-0.3	37	1.3

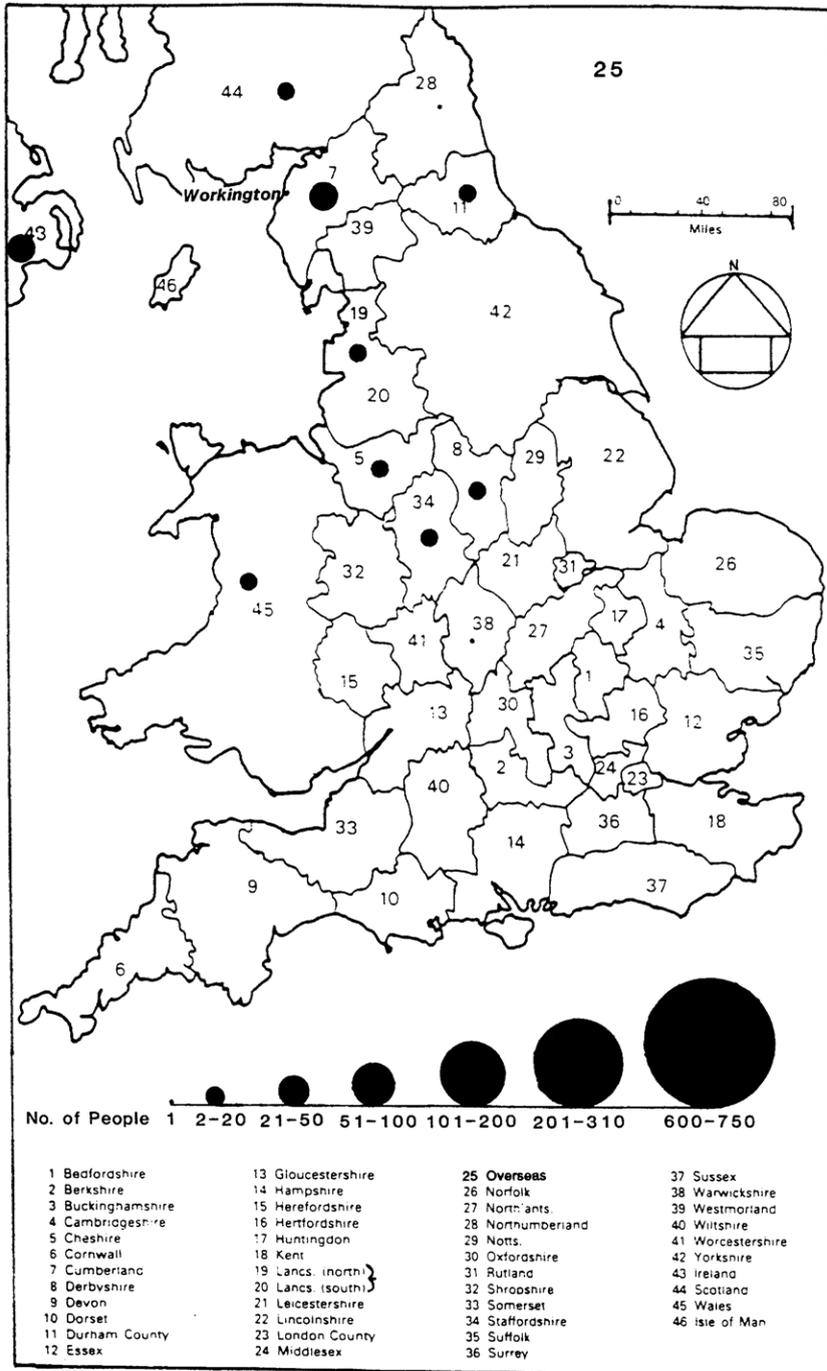


FIG. 6. Origin of Workington's non-indigenous iron and steel workers in 1861.

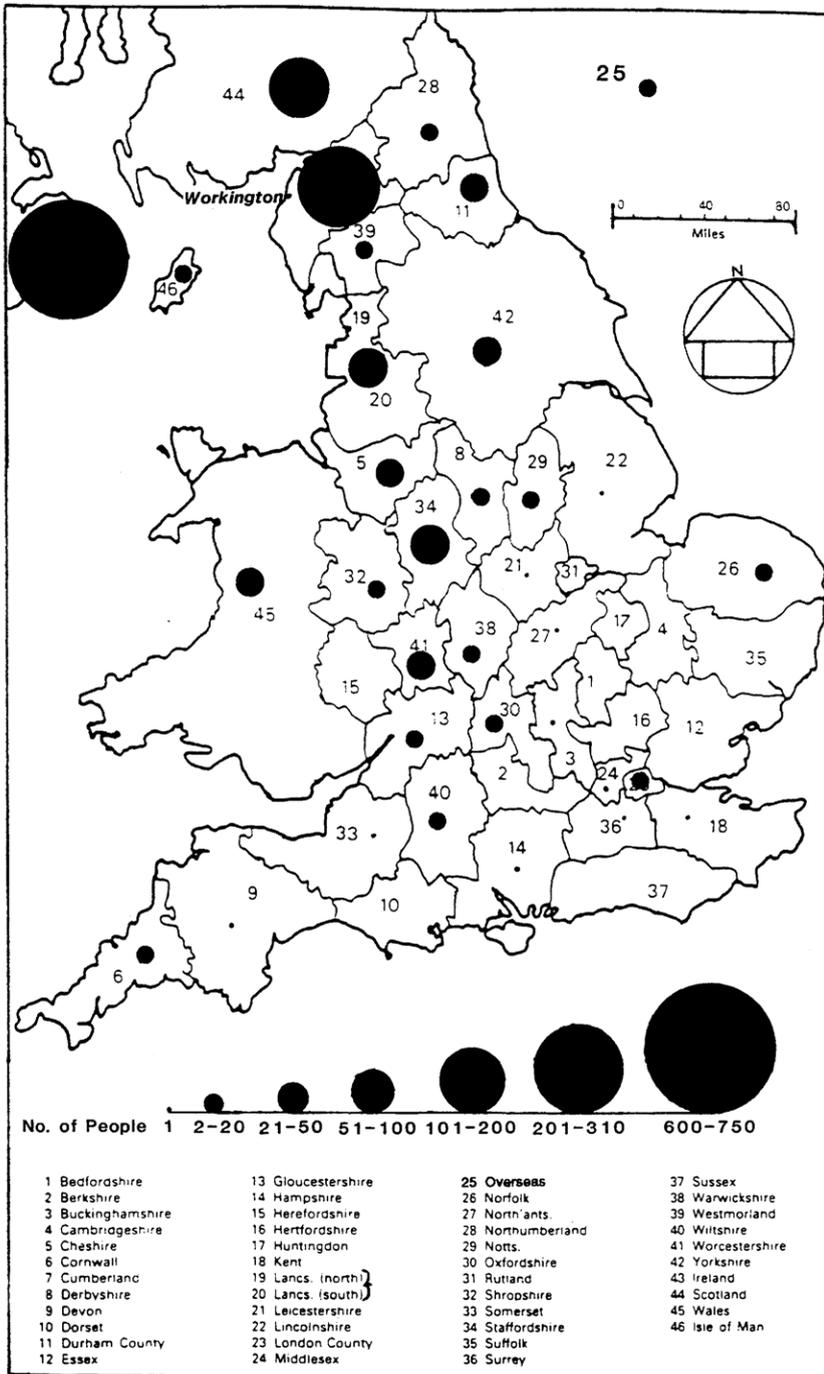


FIG. 7. Origin of Workington's non-indigenous iron and steel workers in 1881.

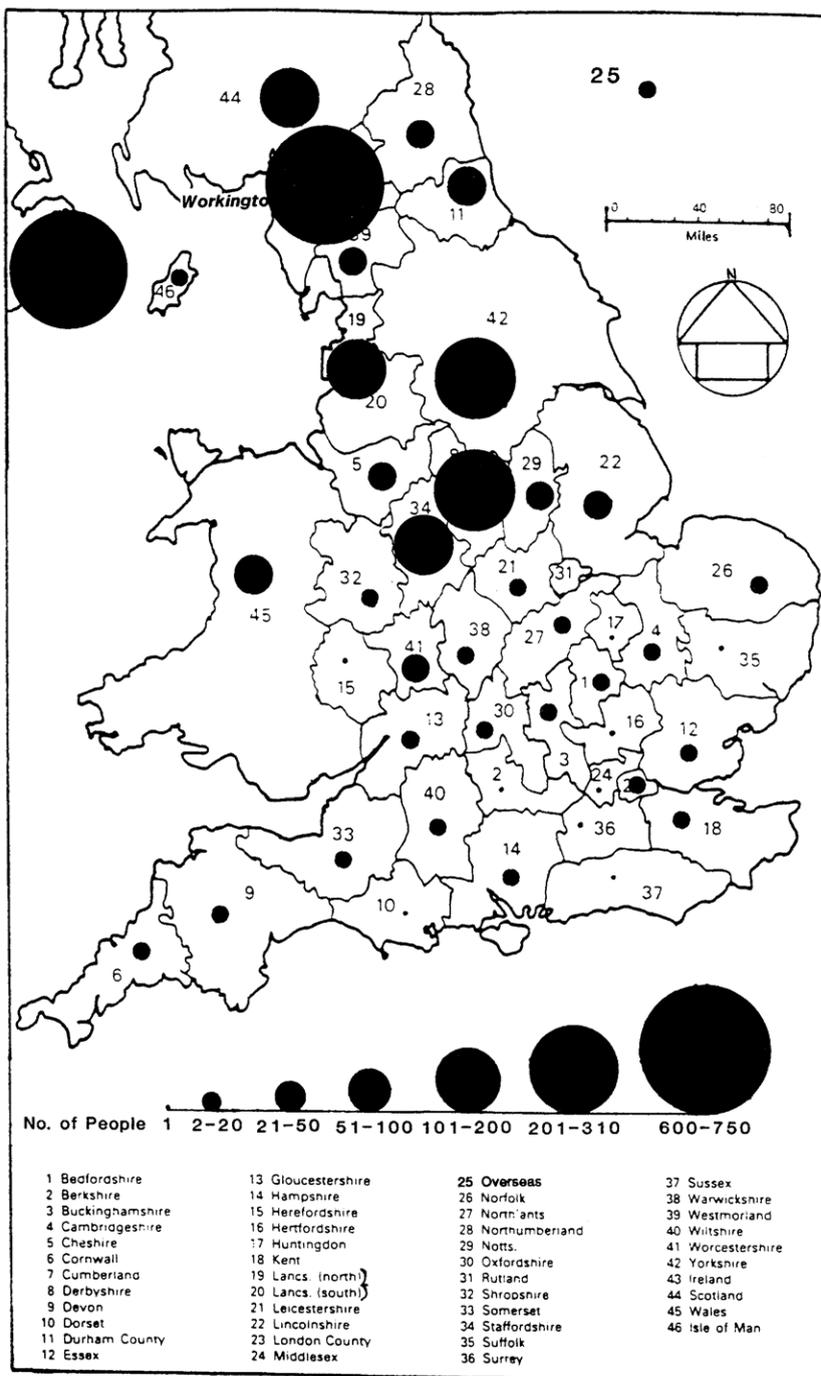


FIG. 8. Origin of Workington's non-indigenous iron and steel workers in 1891.

All the remaining source areas in Table 2 appear to be areas which contained a major iron and steel making centre. Surplus labour in such centres would be expected to migrate to places like Workington where similar employment was available. Barrow-in-Furness was Lancashire's iron and steel node, and was connected by rail along the coast to Workington in 1852.<sup>23</sup> Lancashire's figures in Table 2 help to explain those in Table 1.

Durham showed relatively small increases, similar to Lancashire, in its contribution to the migrant workforce both in iron and steel and overall. The "coke" railway connection would probably have been an influence here as would the Consett iron and steel works established in 1864.<sup>24</sup>

The results for the Scottish migrants are more unexpected. Iron-ore was exported from West Cumberland and Furness to Ayrshire, Lancashire, Staffordshire, South Wales and no doubt Yorkshire, Durham and other iron and steel areas.<sup>25</sup> The Scottish link was particularly strong. Marshall and Walton<sup>26</sup> show that, by 1880, 25 out of 51 iron furnaces on the Cumberland coast were Scots owned or controlled. The Lowther Works (1870) was financed by capital from Kilmarnock as was the Derwent Works (1874). However, although Scottish iron and steel workers increased in number over the period they declined in importance among iron and steel migrant workers as a whole. Even the building of a direct rail link across the Solway Firth to provide Lanarkshire with iron-ore in 1870 (Solway Junction Railway)<sup>27</sup> failed to spark a relatively large Scottish influx. The low numbers involved in 1861 in Table 2 probably cause this apparent anomaly. A decrease of just three in the number of Scottish iron and steel workers in 1861 would cause the percentage change between 1861 and 1881 to become +0.2 as opposed to -2.3.

Migrant Welsh iron and steel workers also decrease in importance over the period. Considering that South Wales was the largest importer of Cumberland and Furness iron-ore until at least the 1870s when foreign ores began to take over,<sup>28</sup> this is another surprising result. Small numbers again play a part but it is the very smallness of these numbers which is surprising.

Unlike Lancashire and Durham, Scotland and Wales do not show a positive correlation between their respective figures in Tables 1 and 2. Both show decreases in the percentages of migrant iron and steel workers; for Wales this occurs in the first twenty years, while for Scotland the drop is found in the remaining ten years.

Derbyshire and Yorkshire both showed large increases in their contributions to Workington's migrant iron and steel workers in the 1880s. As previously mentioned, the removal of Dronfield to Cumberland in 1883 explains Derbyshire's results. Amongst Yorkshire migrants those from the iron and steel centres of Middlesbrough (Middlesbrough capital had helped set up the forerunner of the West Cumberland Iron and Steel Company in 1860)<sup>29</sup> and Sheffield were prominent, but also were those from a place called Raw Marsh (gathered from scanning the raw data). This was found to be an iron and steel town in between Sheffield and Rotherham. Although unable to find a reference to Raw Marsh in the literature on West Cumberland it is suggested that this settlement may have been the site of a further arm of the Cammell company and therefore suffered relatively large out-migration. It definitely acted as a third major source of Yorkshire migrants. The iron and steel figures for Derbyshire and Yorkshire are reflected in Table 1. Staffordshire is the final county to undergo closer scrutiny. Again this area had

established iron and steel works which acted as sources of migrants to Workington, and had contributed capital to the setting up of the precursor to the West Cumberland Iron and Steel Company in 1860.<sup>30</sup> Correlation between Tables 1 and 2 is once more apparent.

The areas of anomalously low numbers of migrants in Figures 6, 7 and 8 are as in Figures 2, 3 and 4, Northumberland, Westmorland and the Isle of Man. No doubt this is for the reasons already given in the first section of this paper.

#### *Domestic Service migrant worker origins – Results and analysis*

Figures 9, 10 and 11 and Table 3 (see Appendix 4) highlight the dominance of migrants from Cumberland among domestic service migrants. Appendix 2 indicates the decline of the importance of domestic service as a migrant occupation and the figures for Cumberland in Table 3 back this up. This was due, as previously hinted at, to the increase of the migrant population of Workington without a corresponding rise in the need for servants (the rise of the working classes). Working class migrants outnumbered domestic service migrants, but decreasingly so (see Appendix 2).

TABLE 3  
*Extraction of figures deemed significant from Appendix 4*

Birthplace	1861			1881			1891	
	No. of migrants	No. of migrants as a % of all migrant domestic servants	% change	No. of migrants	No. of migrants as a % of all migrant domestic servants	% change	No. of migrants	No. of migrants as a % of all migrant domestic servants
Cumberland	192	72.2	-10.2	299	62	-4.9	366	57.1
Ireland	38	14.3	-0.6	66	13.7	-3.1	68	10.6
Lancashire	4	1.5	+3.1	22	4.6	+2.1	43	6.7
Durham	2	0.8	+0.7	7	1.5	+1	16	2.5
Scotland	17	6.4	-0.6	28	5.8	-1.4	28	4.4
Wales	3	1.1	+0.1	6	1.2	-0.1	7	1.1
Staffordshire	1	0.4	+1.9	11	2.3	-0.4	12	1.9
Yorkshire	1	0.4	+2.9	16	3.3	+2.6	38	5.9
Derbyshire	0	0	+0.2	1	0.2	+1.8	13	2

The Irish results again appear to relate to the Irish migration trends outlined by Jackson,<sup>31</sup> although not particularly strongly. The results for Lancashire, Durham, Derbyshire and Yorkshire suggest a link between iron and steel migrants and domestic service migrants (compare Tables 2 and 3). This is probably because servants were brought with some iron and steel migrants, or the father of a family was an iron and steel worker and his children either were servants or became servants when they reached employable age. The link could also be explained by the neighbours of iron and steel migrants, who were made aware of the employment opportunities in Workington. The

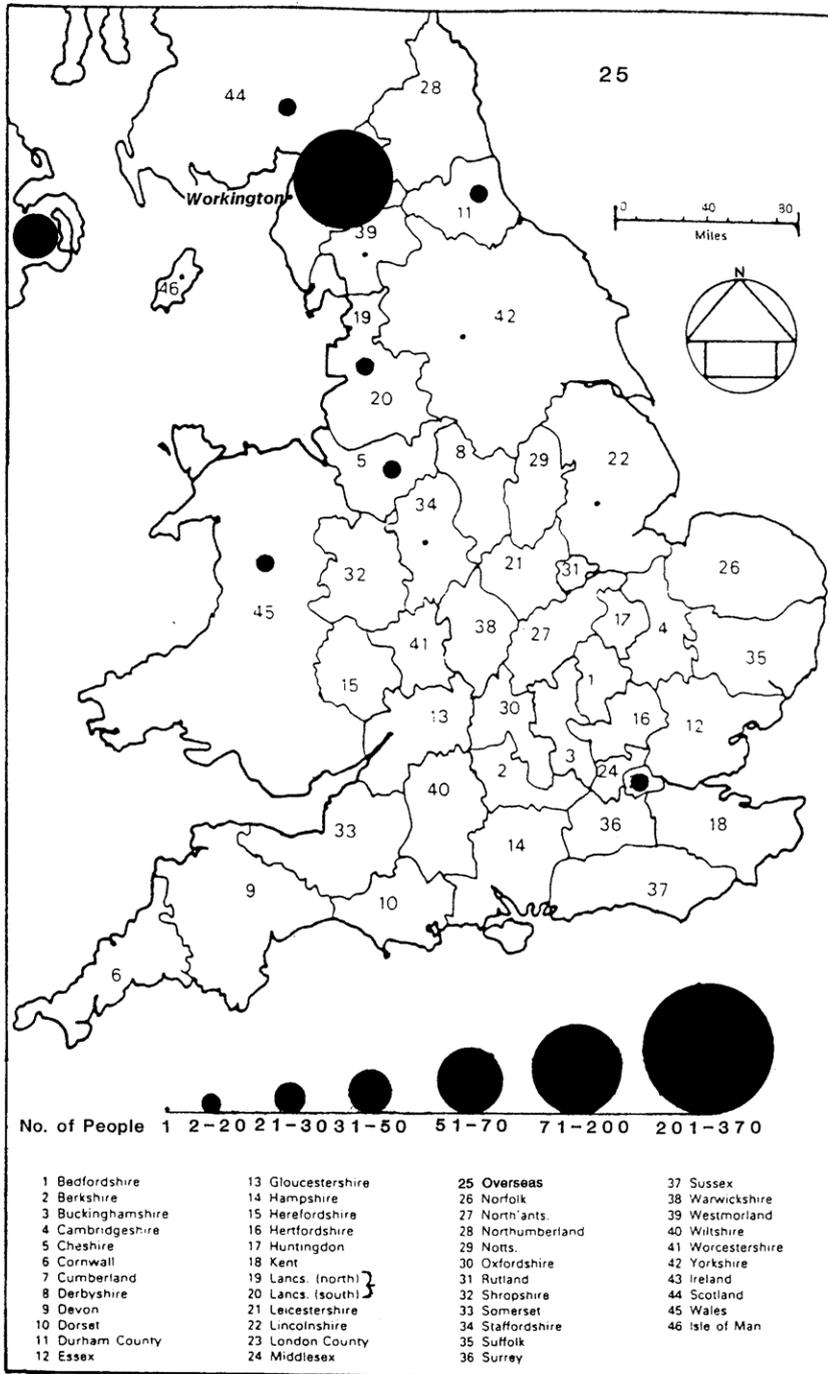


FIG. 9. Origin of Workington's non-indigenous domestic servants in 1861.

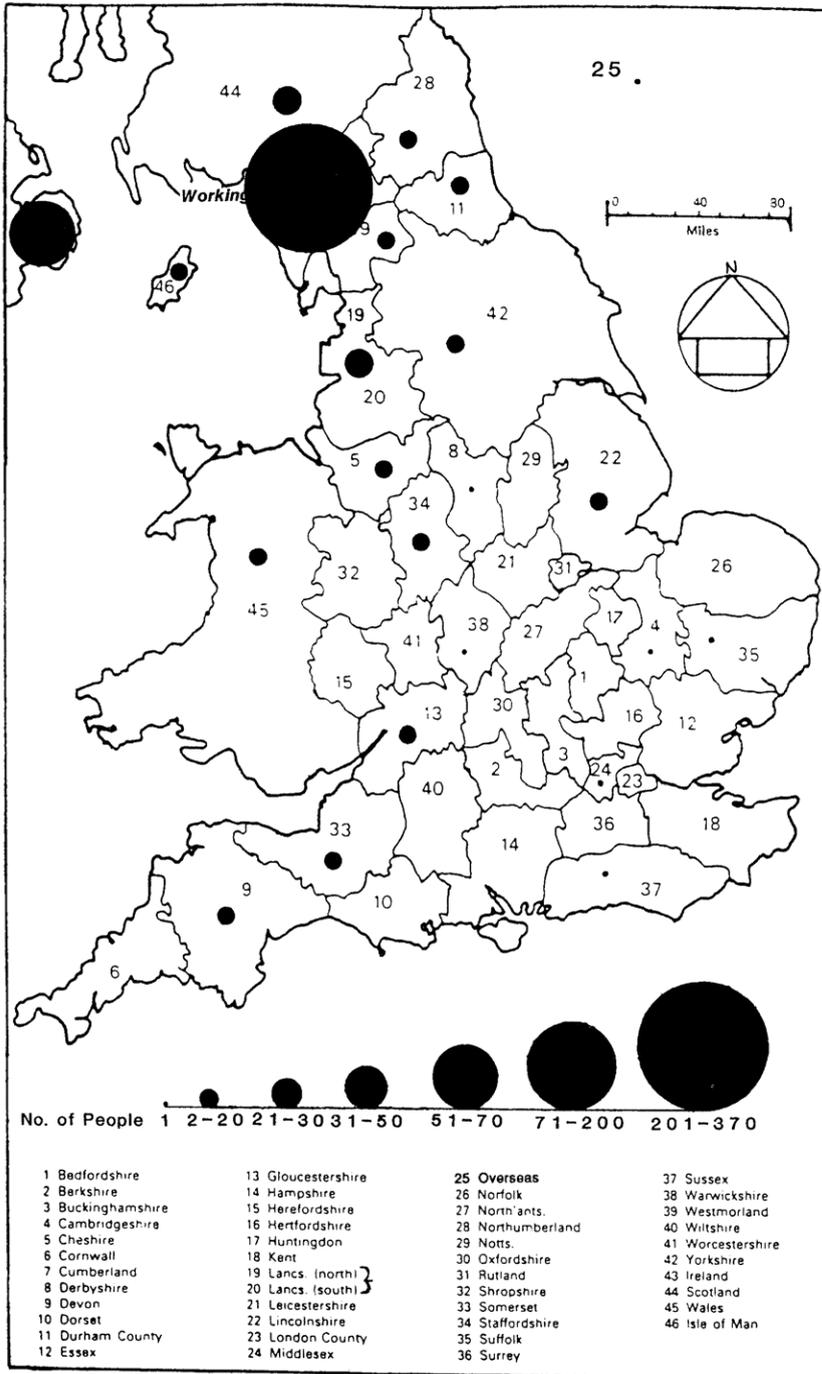


FIG. 10. Origin of Workington's non-indigenous domestic servants in 1881.

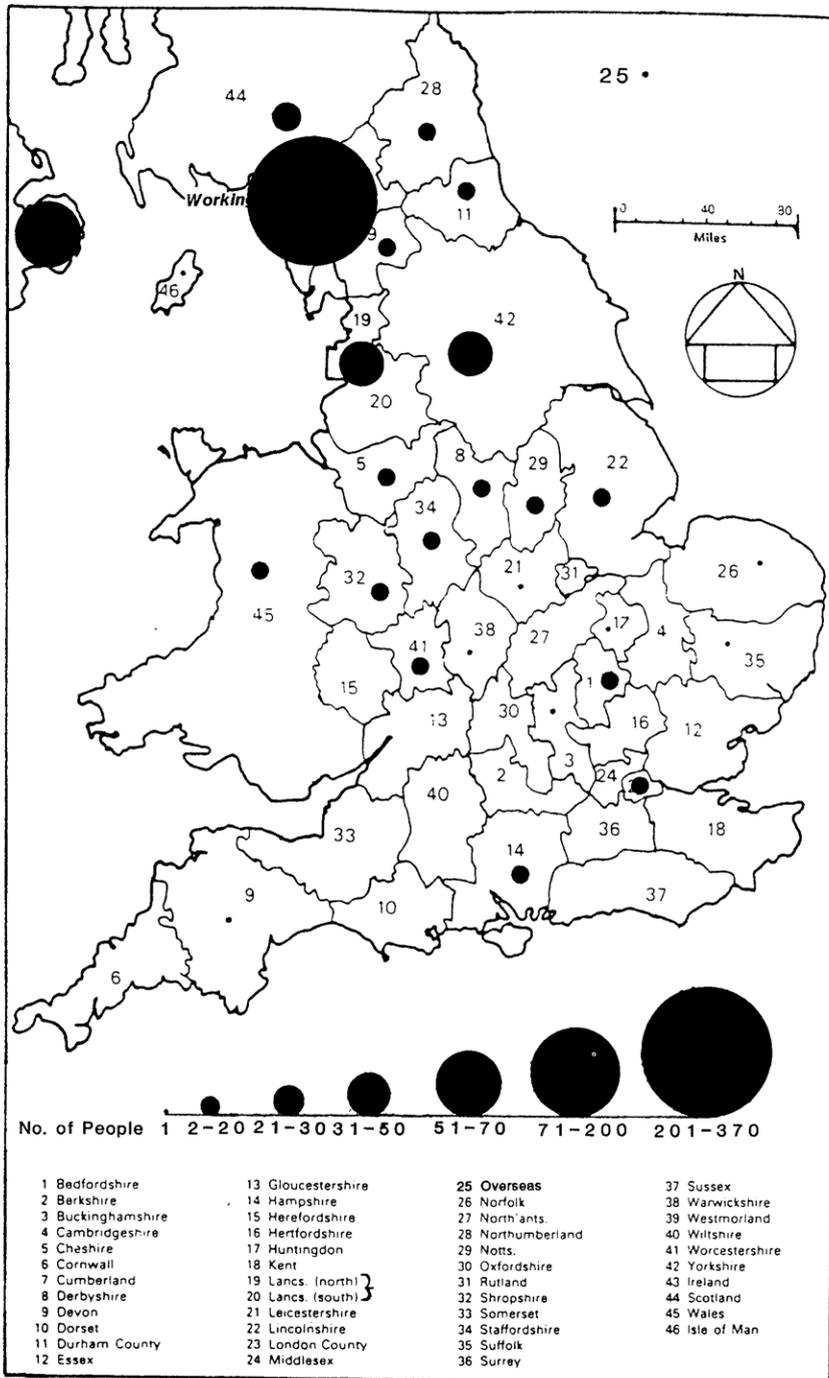


FIG. 11. Origin of Workington's non-indigenous domestic servants in 1891.

proportionate Scottish, Irish and Welsh declines perhaps occur for the opposite reason (compare Tables 2 and 3). Staffordshire displays both sides of the argument. Between 1861 and 1881 both the iron and steel proportion and domestic service proportion increase, while between 1881 and 1891 both decrease.

Figures 9, 10 and 11 show an increasing volume of migrants and distance decay but the pattern is more random than in Figures 6, 7 and 8. This more disparate distribution may reflect the conscious motive of moving for a job in iron and steel as opposed to being in Workington and only being able to get a job as a servant. The anomalously positive areas are Lancashire and Yorkshire for reasons already given.

### **Comparative analyses with similar studies**

#### *M.N.K. Saunder's study of Barrow-in-Furness between 1841 and 1871*<sup>32</sup>

Initial expansion of Barrow took place between 1851 and 1861. Long-journey migrants from Staffordshire, South Lancashire, Yorkshire, Scotland and Ireland were important in this change (see Saunder's Figures 1 and 2). This accords well with my findings in Figures 2 and 3.

Saunders goes on to state that the initial growth of iron and steel needed skilled workers, familiar with what was involved, to come from established centres. This helps to explain the relative lull in the flow of migrant iron and steel workers from Cumberland into Workington between 1861 and 1881 (see Table 2). In Workington, the importing of skills from already established areas of expertise declined in importance, as Saunders states happened in Barrow between 1869 and 1871. He identifies a decline in the Staffordshire born iron and steel workers between 1861 and 1871. The Cumberland and perhaps Staffordshire figures in Table 2 back these findings up.

Saunders' Figures 2 and 3 are similar to my Figures 2 and 3, indicating the operation of distance decay and the continued increase of total numbers of migrant workers. He also provides evidence of the lack of a middle class in Barrow which reinforces my conclusions on the relative decline of domestic service migration into Workington.

#### *J.T. Jackson's study of St. Helens' glassmakers in the nineteenth century*<sup>33</sup>

Jackson states that ". . . long-journey migrants seeking industrial employment took on numerical significance only when boom conditions and high wages prevailed in new industrial areas with specific labour needs. But because their skills were still often scarce and in demand by growth industries, long-journey migrants employed in industry may have had a disproportionate influence on the regional growth pattern of emergent industries such as the iron and related engineering trades. . .". Jackson cites Redford's example<sup>34</sup> of iron worker

migrants from Cheshire, Ireland, South Wales and Yorkshire to Furness. Workington clearly displays the characteristics outlined. Jackson further gives possible mechanisms aiding the movement of workers from established centres of a particular industry to up and coming centres. Citing Scott's<sup>35</sup> study of French glassmakers he points out that in times of stable production too many apprentices were trained to a high standard and this surplus skilled labour then had to migrate to find work. In times of expanding production both experienced workers and those who were newly apprenticed moved long distances to seek better conditions of employment. Drawing on Redford,<sup>36</sup> Jackson relates that when an ironmaster migrated he often took his skilled workers with him.

Jackson's findings indicate that skilled glassworkers migrated relatively long distances to St. Helens, as glassmaking expanded there in the nineteenth century. After this expansion, long-journey migration declined. Relating this to my study, comparisons can be made with Tables 1 and 2, particularly Cumberland's proportionate decline and then rise, and the large numerical jump in migrant workers from the said county between the first twenty and last ten years of the period.

### Comparative analyses with three of Ravenstein's Laws

#### *a) The majority of migrants go only a short distance*

Short-journey migrants, according to Ravenstein, are those who move from their county of birth to a bordering one. Local migrants move only within their county of birth.<sup>37</sup>

To test the above law for Workington therefore requires the calculation of the proportions of each type of migrant (long-distance migrants being from outside the bordering counties and short-distance migrants being short-journey and local migrants combined).

Although my data relates only to migrant workers as opposed to all migrants, Ravenstein's Law, "The major causes of migration are economic",<sup>38</sup> suggests that using my data to determine the validity of Law (a) will be acceptable. Bordering counties are taken as being Lancashire, Durham, Westmorland and Northumberland. Scotland is omitted from this group as the proportion of Scots coming from the counties on the border is unknown.

TABLE 4  
*Proportions of short and long-journey migrant workers*

1861		1881		1891	
Short distance migrants	Long distance migrants	Short distance migrants	Long distance migrants	Short distance migrants	Long distance migrants
1,024 (64%)	565	2,197 (48%)	2,376	3,725 (51%)	3,573

TABLE 5  
*Proportions of short and long-journey migrant iron and steel workers*

	Short distance migrant iron and steel workers	Long distance migrant iron and steel workers
1861	34 (28%)	88
1881	439 (29%)	1,083
1891	1,016 (35%)	1,886

Table 4 appears to bear out Law (a). Initially short distance migrants are in the majority. By 1881 this majority has altered to become slightly in favour of long distance migrants. This change can be associated with Workington's migration surge in the 1860s and 1870s and the pre-eminence in this surge of long distance iron and steel migrants, which was a feature of iron and steel worker migration.<sup>39</sup> In 1891 migrant worker numbers had increased still further but long distance iron and steel migrants had declined in importance (see Table 5). By 1891 the expertise and skill, lacking locally at first, no longer needed to be imported in such large numbers. This change in the dominant migrant worker occupation group (iron and steel) contributed to the regaining of the overall majority by short distance migrants between 1881 and 1891.

*b) Migrants going long distances generally go by preference to one of the great centres of commerce or industry*

Workington during the period under study can be regarded as having been such a centre of industry. From the late 1860s to the early 1870s Workington was part of an area (including Furness) which virtually monopolised the production of Bessemer iron.<sup>40</sup>

Ravenstein estimated that 25% of all migrants went long distances<sup>41</sup> to such centres of commerce or industry. Table 4 indicates that in the case of Workington this figure was somewhat higher, averaging 46% for migrant workers over the study period.<sup>42</sup> He points out that long distance migrants would be expected to have more skill than short distance migrants (rewards for moving greater, so therefore prepared to move further). Cumberland, Northumberland and Westmorland, three of the counties contributing short distance migrants, were predominantly rural in nature. This means therefore that skilled workers, such as iron and steel workers, mainly come from outside the bordering counties (e.g. Yorkshire, Derbyshire and Staffordshire) and helps to explain the high numbers of long distance migrants.

*c) Migration increases as industries develop and the means of transport improves*

In Workington's case transport to the town improved to serve industry, and industry developed as a result of this. In turn, migration increased due to the rise of industry,

particularly of the iron and steel industry (see overall migrant workers occupation structure section).

Relating Law (c) to Ravenstein's Law, "The major causes of migration are economic", it would be expected that migration would decrease as industrial development slowed, stagnated and then declined. If a large proportion of Workington's growth was due to migration then the small population rise to 1901, of 2,400 people, and the decline to 1911 of 1,000 people,<sup>43</sup> could be said to have been brought about by the decelerating growth and decline of industry pushing migration levels down. Alternatively migration may have remained at a high level but became lower than out-migration, or birth rates may have declined and so on.

## **Conclusions**

Acknowledging the data problems involved, the fact that my findings could be interpreted in the light of local history suggests that these problems were not intractable. The three sets of maps show that numbers of migrants increased over time and that distance decay was in operation. The dominant migrant worker group of iron and steel workers illustrate the role of dispersion centres,<sup>44</sup> many corresponding to long distance migrant origins in this industry at the time. This accords well with the findings of Saunders,<sup>45</sup> Jackson<sup>46</sup> and Redford.<sup>47</sup> Saunders,<sup>48</sup> and Jackson's<sup>49</sup> notion that long distance migrants are prevalent during the initial phases of growth of an industry, when expertise is needed, and decline thereafter is given further weight by my findings, particularly those of Cumberland. Noticeable on analysing the origins of domestic servants was the link between these results and those of iron and steel workers. This linkage merits further research, perhaps by looking at all the migrants from particular areas, to see if it goes beyond domestic servants to, for example, the retail or clothing groups. All three of Ravenstein's Laws considered applicable were borne out by my findings. Finally, the data problems could be overcome with some effort and, although the time available was restricted, the addition of the 1871 returns would have been my primary improvement to the study.

## **Acknowledgements**

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## APPENDIX 1

*Overall migrant worker origins* in terms of numbers of migrants, percentages of all migrants and changes between censuses

Birthplace	1861			1881			1891	
	No. of Migrants	No. of Migrants as a % of the total no. of migrants	% change	No. of Migrants	No. of Migrants as a % of the total no. of migrants	% change	No. of Migrants	No. of Migrants as a % of the total no. of migrants
Cumberland	927	58.3	-19.7	1,766	38.6	+1.3	2,916	39.9
Ireland	308	19.4	+8.8	1,291	28.2	-10.6	1,286	17.6
Scotland	103	6.5	+1.1	350	7.6	-1.9	420	5.7
Wales	41	2.6	-0.6	92	2	0	145	2
Westmorland	13	0.8	+0.3	52	1.1	+0.1	89	1.2
Norfolk	1	0.1	+0.1	8	0.2	0	14	0.2
Northamptonshire	2	0.1	0	5	0.1	+0.1	17	0.2
Nottinghamshire	1	0.1	+0.1	10	0.2	+0.5	52	0.7
Lancashire	64	4	+1.2	239	5.2	+0.7	430	5.9
Derbyshire	3	0.2	+0.1	12	0.3	+4.1	320	4.4
Gloucestershire	3	0.2	0	10	0.2	0	18	0.2
Devon	3	0.2	+0.1	15	0.3	0	21	0.3
Herefordshire	4	0.2	-0.2	0	0	+0.04	3	0.04
Cheshire	16	1	+0.3	59	1.3	-0.5	58	0.8
Warwickshire	1	0.1	+0.3	20	0.4	0	29	0.4
Yorkshire	15	0.9	+1.8	122	2.7	+4.4	517	7.1
London	6	0.4	+0.1	23	0.5	+0.3	57	0.8
Cornwall	2	0.1	+0.1	11	0.2	0	16	0.2
Isle of Man	15	0.9	-0.1	36	0.8	-0.2	41	0.6
Sussex	1	0.1	-0.06	2	0.04	+0.06	5	0.1
Shropshire	3	0.2	0	9	0.2	0	16	0.2
Staffordshire	13	0.8	+2.5	151	3.3	0	240	3.3
Durham	10	0.6	+1.3	87	1.9	+0.7	190	2.6
Lincolnshire	2	0.1	+0.1	11	0.2	+0.4	44	0.6
Essex	1	0.1	-0.1	0	0	+0.1	5	0.1
Suffolk	1	0.1	-0.06	2	0.04	+0.06	6	0.1
Worcestershire	3	0.2	+0.7	41	0.9	-0.1	56	0.8
Middlesex	1	0.1	0	5	0.1	-0.06	3	0.04
Hampshire	1	0.1	0	4	0.1	0	11	0.1
Northumberland	15	0.9	+0.2	53	1.1	+0.3	100	1.4
Kent	2	0.1	0	7	0.1	+0.2	20	0.3
Somerset	1	0.1	+0.1	11	0.2	-0.1	8	0.1
Leicestershire	1	0.1	0	7	0.1	+0.2	22	0.3
Wiltshire	1	0.1	0	5	0.1	0	10	0.1
Buckinghamshire	1	0.1	-0.08	1	0.02	+0.08	5	0.1
Rutland	1	0.1	-0.1	0	0	+0.01	1	0.01
Overseas	3	0.2	+0.2	19	0.4	+0.2	42	0.6
Oxfordshire				11	0.2	0	12	0.2
Huntingdonshire				1	0.02	+0.01	2	0.03
Bedfordshire				3	0.1	+0.2	20	0.3
Cambridgeshire				4	0.1	+0.1	13	0.2
Surrey				3	0.1	-0.05	4	0.05
Hertfordshire				2	0.04	+0.06	5	0.1
Berkshire							4	0.05
Dorset							1	0.01
England				13	0.3	-0.05	4	0.05
	1,589			4,573			7,298	

## APPENDIX 2

*Occupation structure of the non-indigenous worker population of Workington*

Occupational Group	1861			1881			1891	
	No. of Migrants	No. of Migrants as a % of the total no. of migrants	% change	No. of Migrants	No. of Migrants as a % of the total no. of migrants	% change	No. of Migrants	No. of Migrants as a % of the total no. of migrants
Agriculture	135	8.5	-6.4	95	2.1	-0.6	113	1.5
Miscellaneous	24	1.5	-1	23	0.5	-0.3	19	0.2
Mines and Quarries	41	2.6	-1.3	58	1.3	+0.7	144	2
Building	97	6.1	+0.6	306	6.7	-1.4	388	5.3
Clothing	147	9.3	-3.2	281	6.1	-0.1	440	6
Manufacturing	122	7.7	-4.8	131	2.9	-1.2	125	1.7
Transport	51	3.2	+3.1	287	6.3	0	462	6.3
Mariners	70	4.4	-3.4	47	1	-0.6	33	0.4
Retail	129	8.1	-0.9	329	7.2	+2.8	733	10
Shipbuilding	78	4.9	-3.9	44	1	-0.4	44	0.6
Labourers and Blacksmiths	208	13.1	+4.2	792	17.3	-4.5	941	12.8
Public and Professional	69	4.3	-1.2	142	3.1	+1.1	308	4.2
Domestic Service	292	18.4	-7	523	11.4	-2.2	671	9.2
Iron and Steel	122	7.7	+25.5	1,522	33.2	+6.4	2,902	39.6
	1,585			4,580			7,323	

The discrepancies between the number of migrants totals in this appendix and those of appendix 1 are due to tallying errors on my part.

## APPENDIX 3

*Iron and steel migrant worker origins in terms of the no. of migrant workers, percentages of all migrant iron and steel workers and % changes between censuses*

Birthplace	1861			1881			1891	
	No. of Migrants	No. of Migrants as a % of all migrant iron and steel workers	% change	No. of Migrants	No. of Migrants as a % of all migrant iron and steel workers	% change	No. of Migrants	No. of Migrants as a % of all migrant iron and steel workers
Cumberland	25	29.5	-0.3	307	20.2	+5.3	739	25.5
Ireland	49	40.2	+1	627	41.2	-16.5	717	24.7
Northumberland	1	0.8	+0.4	19	1.2	-0.2	29	1
Lancashire	6	4.9	+0.2	78	5.1	+0.3	157	5.4
Cheshire	5	4.1	-1.6	38	2.5	-1.5	30	1
Warwickshire	1	0.8	-0.2	9	0.6	-0.1	16	0.5
Durham	2	1.6	+0.2	28	1.8	+0.5	67	2.3
Scotland	13	10.6	-2.3	127	8.3	-3.1	150	5.2
Wales	10	8.2	-5.3	45	2.9	-0.2	78	2.7
Derbyshire	3	2.4	-2	7	0.4	+7.1	219	7.5
Staffordshire	7	5.7	+0.3	92	6	-0.7	154	5.3
Devon				1	0.1	+0.3	12	0.4
Leicestershire				1	0.1	+0.2	8	0.3
Hampshire				1	0.1	0	3	0.1
Worcestershire				24	1.6	-0.3	37	1.3
Isle of Man				15	1	-0.5	15	0.5
Gloucestershire				4	0.3	0	9	0.3
Norfolk				2	0.1	+0.1	5	0.2
London				7	0.4	0	13	0.4
Shropshire				5	0.3	0	9	0.3
Lincolnshire				1	0.1	+0.7	23	0.8
Nottinghamshire				7	0.4	+0.8	34	1.2
Wiltshire				4	0.3	0	9	0.3
Cornwall				4	0.3	-0.1	6	0.2
Yorkshire				46	3	+5.7	253	8.7
Kent				1	0.1	+0.2	10	0.3
Westmorland				7	0.4	+0.4	24	0.8
Somerset				1	0.1	+0.1	6	0.2
Oxfordshire				4	0.3	0	8	0.3
Buckinghamshire				1	0.1	0	2	0.1
Middlesex				1	0.1	-0.07	1	0.03
Northamptonshire				1	0.1	+0.1	7	0.2
Surrey				1	0.1	-0.07	1	0.03
Overseas				6	0.4	+0.02	17	0.6
Hertfordshire							1	0.03
Dorset							1	0.03
Huntingdonshire							1	0.03
Berkshire							1	0.03
Herefordshire							1	0.03
Essex							4	0.1
Sussex							1	0.03
Bedfordshire							12	0.4
Cambridgeshire							11	0.4
Suffolk							1	0.03
	122			1,522			2,902	

## APPENDIX 4

*Domestic Service migrant worker origins* in terms of the no. of migrants, percentages of all migrant domestic servants and percentage changes between censuses.

Birthplace	1861			1881			1891	
	No. of Migrants	No. of Migrants as a % of all migrant domestic servants	% change	No. of Migrants	No. of Migrants as a % of all migrant domestic servants	% change	No. of Migrants	No. of Migrants as a % of all migrant domestic servants
Cumberland	192	72.2	-10.2	299	62	-4.9	366	57.1
Ireland	38	14.3	-0.6	66	13.7	-3.1	68	10.6
Lancashire	4	1.5	+3.1	22	4.6	+2.1	43	6.7
Durham	2	0.8	+0.7	7	1.5	+1	16	2.5
Scotland	17	6.4	-0.6	28	5.8	-1.4	28	4.4
London	2	0.8	-0.8	0	0	+0.6	4	0.6
Wales	3	1.1	+0.1	6	1.2	-0.1	7	1.1
Isle of Man	1	0.4	+0.4	4	0.8	-0.6	1	0.2
Lincolnshire	1	0.4	+0.2	3	0.6	-0.3	2	0.3
Staffordshire	1	0.4	+1.9	11	2.3	-0.4	12	1.9
Cheshire	3	1.1	-0.3	4	0.8	0	5	0.8
Yorkshire	1	0.4	+2.9	16	3.3	+2.6	38	5.9
Westmorland	1	0.4	+0.2	3	0.6	+0.6	8	1.2
Northumberland				7	1.5	+0.2	11	1.7
Somerset				5	1	-1		
Middlesex				1	0.2	-0.2		
Overseas				1	0.2	0	1	0.2
Devon				2	0.4	-0.2	1	0.2
Warwickshire				1	0.2	0	1	0.2
Sussex				1	0.2	-0.2		
Derbyshire				1	0.2	+1.8	13	2
Cambridgeshire				1	0.2	-0.2		
Gloucestershire				2	0.4	-0.4		
Suffolk				1	0.2	0	1	0.2
Shropshire							2	0.3
Worcestershire							2	0.3
Norfolk							1	0.2
Leicestershire							1	0.2
Bedfordshire							2	0.3
Huntingdonshire							1	0.2
Nottinghamshire							3	0.5
Buckinghamshire							1	0.2
Hampshire							2	0.3
	266			482			641	

The discrepancies between the number of migrants totals in this appendix and the domestic service totals in appendix 2 are due on my part to tallying errors.

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