## Census i 88 I-Glasgow

## The <br> Decennial Census

As a Basis for the Statistics of Intervening Years,
Illustrated by the case of Glasgow, with Tables derived from Census of Glasgo


Glasgow
Printed by Robert Anderson 22 Ann Street 188 i.

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## PREFATORY NOTE.

The Enumeration Buoks of the Census were, in atcordance with Act of Parliament, in the casc of the Eight Principal Towns of Scotland, lodged with their Chiof Magistrates on or before 23 rd April, and were required to be revised by them and transmitted to the Registrar-General in Edinburgh on or before 4th May. As it was only by reference to the original records of the Census, and the redistribution of every entry therein, that information as to the population and their ages, dec., of the twenty-four Divisions into which the City is divided for statistical purposes by the Sanitary Department, could be obtained, application was made by the Lord Provost to the Home Secretary for permission to extract, the requisite data during the few days in which these documents were in his custody. The required sanction was obtained, with the concurrence of the Registrar-(iencral. The Magistrates and Town Council sanctioned an expenditure not excecting $£ 150$. A large staff of clerks was engaged, under the supervision of Mr. George M‘Kay; Statistical Clerk in the Department, in the commotious rooms of the Lands Valuation Office, and succeeded, by working extra hours, in extracting the data which form the basis of the 'Iables appended to this Report in six days. It was necessary to limit the scope of the enquiry, but within this limit the information is accurate and valuable.
The remarks prefixed are solely directed to the application of Ceusus data to the estimation of the number and ages of the population in the interval between one Census and
another. 'These are cast in the form of a comparison between the decade 1871-80, as estimated in prospect and in retrospect, for, as is illustrated from the case of Glasgow, the annual data of such a lengthened period as ten years in the life of a commercial population are in both cases more or less of an estimate, and one with considerable range of possible error.

J. B. R.

Sanitary Department,
Glasgow, December, 1851.

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## THE DECENNIAL CENSUS, ©co., \&o.

Whin the population of the City of Glasgow was numbered on 4th April, 1881, there were two distinct estimates in useone by the Registrar-General fur Scotland, the other by the Medical Officer of Health for the City. The result of the Census was to show that both the estimates were in excess of the actual population. The following are the respective figures:-

| April, | 511,500* |
| :---: | :---: |
| Merlieal Offieer's Estimate. | .338,128, or + 26,608 |
| Registrar-General's in.. | 601.266, or $+59,746$ |

These two estimates represent two different methods of arriving at the annual populations in the interval between one Census and another; and, since estimates must continue to be made, and there are only these two ways of making them, it becomes important to investigate somewhat closely the circumstances under which they both failed in this instance to yield accurate results. The method of the Registrar-General is to assume that the rate of increase, as ascertained from the two immediately-preceding enumerations, continues the same during the currency of the following ten years. Each year's increment is supposed in following years to produce a propor-

[^0]tional increase, as in compound interest, so that the aggregate at the close of the decade is greater than merely the percentage of increase calculated on the preceding Census and added to the last. The method adopted by the Sanitary Department is to ascertain from the number of houses inhabited by the Census population the average number of inhabitants per house, and then in each succeeding intercensus year to apply this average as a multiplier to the number of inhabited houses for that year entered on the roll of the City Assessor. As the accuracy of the former method depends upon the continuance of the rate of growth, so the accuracy of this depends upon the continuance of the same average number of immates in the inhabited honses of the City.

## The Rate of Growth of Glasgow.

The Registrar-General's method, judged by the comparison of its results with the results of the Census of the $\delta$ large towns of Scotland, and the 20 large towns of England, is evidently one which leads to serious errors. The Census is taken at the close of the first quarter of the year, and in order to obtain the population at the middle of the year, a quarter's increase, at the rate of growth of the previous ten years, is added. Comparing the population in 1881, derived in this way from the Census, with that as estimated for the cities, and used in all calculations of death-rates, in the Scotch returns, up to 25 th June, in the English, up to 28 th May, we ascertain the discrepancies between the estimated and the actual. Calculating the difference as a percentage upon the true population, we find that, in the Scotch towns, the true population was, in

| Grecnock, | 18.34 per cent. le̊ss, | Paisley, | 12.09 per cent. more. |  |  |
| :--- | :---: | :--- | :--- | :--- | :--- |
| Glasgow, | 17.42 | do. | Perth, | 10.59 | do. |
| Dundec, | 11.39 | do. | Leith, | 2.65 | do. |
| Edinburgh, | 2.03 | do. | Aberdecn, | 0.28 | do. |

The difference in the case of Aberdeen is so small that the
estimated may be said to have agreed with the actual population, but, in the case of the other towns, the difference is more or less serions.

Comparing the English towns in the same way, we find that the true population was, in

| Bradford, | 10:59 pe | cent. le.ss. | London, | 321 | ent. more. |
| :---: | :---: | :---: | :---: | :---: | :---: |
| Sheffield, | $9 \cdot 56$ | do. | Norwich, | $1 \cdot 81$ | do. |
| Leicester, | $9 \cdot 12$ | do. | Hull, | $1 \cdot 40$ | do. |
| Manchester, | 6.79 | do. | Liverponl, | 0.74 | do. |
| Portsmonth, | 6.49 | do. | Birmingham, | $0 \cdot 10$ | do. |
| Leeds, | $\therefore 04$ | do. |  |  |  |
| Bristol, | 4.84 | do. |  |  |  |
| Newcastle-on-Tyn | ce, 4.21 | do. |  |  |  |
| Sunderland, | 186 | do. |  |  |  |
| Wolverhampton, | $1 \cdot 20$ | do. |  |  |  |
| Brighton, | 1.04 | do. |  |  |  |
| Plymouth, | 1:58 | do. |  |  |  |

In the case of three towns-viz., Nottingham, Salford, and Oldham-owing to representations made to the English Registrar-General, estimates amended from returns of inhabited houses had been adopted, but the result was not favourable, for the true population was found at the Census to be, in
Salford, . . $9 \cdot 17$ per cent. less. | Nottingham, . $\overline{7} \cdot 89$ per cent. more. Oldham, . . 6.66 do.

These figures prove incontestably that the rate of growth of towns is so variable that the rate of one decade affords no presumption of the rate of another. As a matter of fact, the majority of the English towns, and the most important of the Scotch have, during the decade 1871-80, fallen far short of their development in the decade 1861-70. The three English towns whose estimates were amended remarkably exceeded their former rate of growth, although the attempt to gauge that excess from the inhabited houses failed so decidedly. In Scotland, Paisley and Perth also shot ahead, while Greenock and Glasgow fell far behind. The following are the rates of increase of the eight Scotch towns in the last
two decales, aranged in the order of the decade 1871-80):-

| Leith, | 1871-80. |  |  |  | 1861-i0 |
| :---: | :---: | :---: | :---: | :---: | :---: |
|  | - | - | $31 \cdot 73$ | ... | 28.87 |
| Aberdcen, | - |  | $19 \cdot 13$ | $\ldots$ | $19 \cdot 32$ |
| Dundee, | - |  | $18 \cdot 00$ |  | 31.70 |
| Edinburgh, | - |  | 15.48 |  | 17.01 |
| Paisley, |  |  | $15 \cdot 30$ |  | 1.75 |
| Greenock, |  |  | $15 \cdot 22$ |  | 36.22 |
| Perth, |  |  | 12.79 |  | $1 \cdot 10$ |
| Slasgow, |  |  | $4 \cdot 00$ |  | $21 \cdot 64$ |

Glasgow occupies the unique position in the whole kingdom of having the smallest increase. The lowest rates of urban growth in the country, excepting Glasgow, are those of Norwich and Plymouth, and these are more than twice as great as that of Glasgow, and in place of being less than onefiftl of the growth of the preceding decade, as in the case of Glasgow, their rates are in one case greater, and in the other almost as great. The case of Manchester deserves special mention, as, while in 1861-70 it increased only 3.7 per cent., in 1871-80 it actually decreased 2.8 per cent.; but as the Registrar-General justly remarks: "With this must be taken into consideration the fact that the closely-adjoining town of Salford showed an increase of no less than 41.2 per cent. Taking the two continuous towns together, there was an increase of 8.8 per cent.*

Before taking up the suggestion of this statement with regard to Manchester, and inquiring whether we shall discover the lost population of Glasgow proper in our suburbs, there are two facts which it is important to note. The first is that both Scotland and England have grown in population in the decade 1871-80 at a rate exceeding that observed in any decennial period, in the former since 1821-30, $\dagger$ in the latter since 1831-40. + The other fact is that, taking the population of England as a whole, it is found that the " natural increment of the people," or the surplus of births over

[^1]deaths, gives within 74 per cent. of the actual increase of population. The meaning of this fact cannot be more clearly expressed than in the words of the English RegistrarGeneral * - "The difference between the total number of births and the total number of deaths in the ten years, or 'the natural increment' of the people, amounted to $3,425,98$ ", or to ain increase of 15.08 per cent. upon the population at the beginning of the period; and as the actual increase, as determined by enumeration, was $1+34$ per cent., the combined effects of all the othei muvements of the population, including emigratiou and immigration, resulted in a loss of no more thau 0.74 per cent in the whole period." In the two previous enumerations this loss was less.

The case of Glasgow is very different. The actund increase within the Burghal limits was, as we have seen, 4 per cont. Tbe surplus of births over deaths within the same limits during the ten years shows a "natural increment" of fully 12 per cent. Therefore there has been it balance of loss by emigration beyond those limits of 8 per cent.

In order to obtain a trustworthy estimate of the growth of a populatiou, we must first detemine accurately the area of the earth's surface upon which they live. 'This area must always be the same. The history of the development of Glasgow is peculiarly difficult to trawe correctly, because of the confusion of boundaries. The area which is designated Glasgow is nut always the same. There is Parliamentary Glasgow and Burghal Glassow, and there are the Suburbs of Glasgow. The Burghal Glasgow of one Census is not that of another, and the Registration Burgh of Glasgow has not always embraced the whole actual Burgh. The Suburbs of one Census are not the Suburbs of another, partly from the inclusion within Glasgow proper of districts previously treated as suburbs, and partly from districts further a-fiek boing, by the compilers of successive enumerations, embraced within what they please to call Suburbs. These puzzling variations have been discussed and explained by the present City

[^2]Chamberlain in his Report upon the Statistics of Glasgov for 1868, pp. 43-45.

The boundary of Glasgow which has been longest without change is the Parliamentary, fixed by the Reform Act of 1832, and to this day absolutely unaltered. In 1846 the Municipal boundary was made co-extensive with the Parliamentary; but, by the Municipal Extension Acts of 1.572 and 1878, about 1,048 acres, with the population thereon, have been added to the Municipality, so that to that extent it extends beyond the Parliamentary arca. It follows, therefore, that to trace the development of the population within either Parliamentary or Municipal Glasgow, as defined in 1881, it would be necessary to dcterminc at each Government Census, back to the first in 1801, the population living on the present superficies of those areas-an almost impossible task. The Scotch Registration Act came into force on 1st January, 1855, and the Parliamentary boundary was the limit of the Registration area of Glasgow until 1st January, 1875, when it was entirely changed, both by a new subdivision of the area within the City (including, for the first time, for Registration purposes, the portions added to the Municipality in 1872), and also by extension, so as to embrace, under the designation "Landward," certain suburban districts-thus still further complicating and adding to the risks of statistical fallacies in any attempt to trace the development of the community.

In 1875 , when this rearrangement of the Registration subdivisions of Glasgow was made, the Registrar-General, with the materials to which he alone has access, went back upon the Census records of 1861 and 1871, and determined the population within the same boundarics, with the following result:-

|  |  | Burghal.* |  | Lanclward. |  | Yotal. |
| ---: | :---: | ---: | :--- | ---: | :--- | ---: | ---: |
| 1861, | $\ldots$ | 404,314 | $\ldots$ | 5,607 | $\ldots$ | 409,921 |
| 1871, | $\ldots$ | 491,846 | $\ldots$ | 16,474 | $\ldots$ | 508,320 |
| 1881, | $\ldots$ | 511,520 | $\ldots$ | 39,121 | $\ldots$ | 550,641 |

[^3]The "Landward" portions of the Registration area of Glasgow embrace so much of the present "suburbs" of Glasgow as are known by the designations of the Burghs of Kinniug Park and Govauhill, the two Burghs of Pollokshields, the districts of Strathbungo and Polmadie, and an extensive area stretching eastwards along Cumbernauld Road, and north of Springburn. 'This obviously leaves out large and populous suburban areas, but it gives us a strictly correct basis of comparison so firl as it goes, and shows the development of what the Registrar-General has constituted the Registration arcia of Glasgow.

| 1861-71, | Burghal lucrease. |  | Landward herease. |  | Total increas |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | $\begin{aligned} & \text { No. } \\ & 57.532 \end{aligned}$ | Per cent. $21 \cdot 65$ | No. | Tere 'ent. <br> $193 \cdot 5$ | No. ,399 | Per cent. の1.00 |
| 1871-S1, | 19,674 | $4 \cdot 00$ | 22,64 | $137 \cdot 4$ | 42,321 | S•30 |

These tigures speak for themselves. They show that, even including so much of the suburbs of Glasgow as are comprised within the Registration area, the development during last decade is only one-third of the development during the decade preceding.

But we may obtain a sufficiently correct and comparable observation of the development of Glasgow, with all the more important suburbs. At p. 69 of the City Chamberlain's Report for 1880 there is a statement of the increase of the "city and suburbs" between 1871 and 1881 . At p. 89 of his Report on the Census of 1871 wre find a statement of the increase of "Glasgow and its suburbs" between 1861 and 1871 ; but Rutherglen, Pollokshaws, Cathcart, Crosshill, Mount Florida, Langside, and Crossmyluof are included in the former statement and not in the latter. It is scarcely justifiable to inchude either Rutherglen or Pollokshaws. 'Therefore, excluding these from 1881, and adding the Registration District of Catheart, which embraces Crosshill, Mount Florida, \&c., to 1861 and 1871, we get the following view of the recent development of everything that can fairly be called Glasgow and its suburbs :-

| 1861, |  | $\begin{aligned} & \text { Population. } \\ & 450,174 \end{aligned}$ |  | Increase. |  | Rate of lncrease. |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| 1871, | $\ldots$ | 573,381 |  | 123,207 |  | -7.36 |
| 1881, | . | 681,222 |  | 107,841 |  | 18:80 |

These figures show that Glasgow, as a community, throwing aside all artificial subdivisions, diminished its growth during the last, as compared with the former decade, by a third. If, now, we divide this community into two parts-one Burghal, in the sense described above, viz., the population on the Burghal area of 1881, and the other smburban-we get an interesting aud important observation of the rate of development of these populations living on areas which are exactly the same at each enumeration, the one being urban and centric, the other suburban and excentric.

|  |  | Burghal. | Suburban. | Total. |
| :---: | :---: | :---: | :---: | :---: |
| 1861, |  | $404,314$ | 45, 560 | 450,174 |
| 1871,... | .. | 491,546 | 81,535 | 573,381 |
| 1SS1, |  | 511,520 | 169,702 | 6S1,22: |
| Increase- |  |  |  |  |
| 1861-71, |  | S7,532 | 35,675 | 12:3,207 |
| 1571-S1, | .. | 19,674 | SS,167 | 107,841 |
|  |  | $\begin{aligned} & 1.65 \mathrm{per} \mathrm{c} \\ & 4.00 \text { do. } \end{aligned}$ | $\begin{aligned} & 7.79 \text { per ce } \\ & 8.13 \text { do. } \end{aligned}$ | 6 per ce $30 \text { do. }$ |

These figures, looked at as they stand, seem to show that the falling off in the rate of development of Glasgow, as defined by the mumicipal boundary, arose, at any rate in great part, from the emigration of her population to the suburbs. Still, it is also the fact that the rate of growth of the entire community was one-third less in the last decade than in the preceding; and if the suburbs added 108 per cent. to their population in the face of the adversity of the times, we can hardly set limits to their possible increase had the times been prosperous.

## Inhabitants per House in GlasGow.

The Medical Officer's Estimate of the population of Glasgow was $\check{5} 38,128$, or 26,608 above the actual population, as ascertained by the Census. This is a much less discrepancy than that of the Registrar-General, but still sufficiently serious to necessitate an endeavour to discover jts cause. It is evident that the variations in the decennial rate of growth of cities is
such that a decennial Census is practically useless as a basis for the determination of the population in intermediate years. The only other method is, that based on the assumption that the average number of inhabitants per house is stable from year to year, so that, if we can get u conrrect retum each year of the number of inbabited houses, the application of this multiplier should give a sufficiently close estimate of the population. In a population of half il million an error of 5,000 is of no practical importance in calculating cleath-rates, and even 10,000 would not be very serious. On the other hand, in multiplying 100,000 inhabited houses, a very slight error in the decimals of the multiplier will produce an error in the population beyond those practical limits of accuracy. Any considerable mistake in the multiplicand has the simme effect.

Owing to the continuance of the absurd imposition upon the Scotch enumerators at the Census of 1871 of the English definition of a house, which is equivalent to a Scotch tenement, comprising many "houses," there was no return obtained by them of houses according to the proper Scotch acceptation of the term. The multiplier was therefore determined from the Assessor's return for 1872, applied to the estimated population for that year. It was found on these data to be 4:827 inhabitants per house ( $\left.\frac{188010}{1 \frac{8}{0} \frac{1}{2} 18}\right)$, excluding the population in the harbour and institutions (6867), as should always be done. Had the Assessor's return for 1871 been applied to the Census population, with the deduction noted, the multiplier would have been $\frac{1850}{1005 \frac{5}{6}}=4.793$. But the error thus instituted, the adoption of a multiplier 034 persons per honse too high, grew from year to year, because the multiplier of each of the 24 statistical subdivisions of the City had to be determined and applied to the number of inhabited honses in each, and the population of the whole City was obtained from the summation of the populations of the districts, not from the application of one multiplier to the number of inhabited houses in the whole City. I find the supposed average of inmates per house in this way crept up
until, in 1878 , it was 486 , at which it has continued since. In place of this the Ceusus has shown the average to be
 or ${ }^{\prime} 122$ persons per house fewer.

We have therefore this series:-
Inhabitants per Honse-Census 1871, ... ... ... ... 4.793

$$
\text { Do., do., ilo., 1881, ... ... ... ... } 4.738
$$

$$
\text { Do.. do., As used for Medical Officer's Estimate, } 4 \cdot 860
$$

So much for the multiplier. Now for the multiplicand, or number of inhabited houses. This, as stated in my Quarterly Reports, was supplied at the beginning of each year by the City Assessor, made up from the valuation roll as revised in February. The return received for 1881 was 109,279, which, multiplied by 4.86 and 7,000 added for institutions, gave our estimate of 538,128 , which was 26,608 above the actual population. If we multiply by 4.793 , the correct average per house in 1871, we get (with 7,000 added as before) 530,774 , or 19,254 above the actual population. The small diminution of 067 in the multiplier means a diminution of the estimate by 7,354 inhabitants. But in place of 109,279 inhabiter houses, the Census gare 106,317. If we multiply this by 4.793 (adding 7,000 as before) we get 516,577 , which is only 5,057 in excess of the actual popula-tion-less than 1 per cent. of error, or within the limits of practical accuracy, as appears when we calculate the deathrate, for example, from 13,303 , the number of cleaths in 1880 . The Census population gives exactly 26 per 1,000 , the estimate made from correct rlata, 25.75, which would be returned as 26 per 1,000 also.

This is so far reassuring as to the accuracy of the method of estimating from inhabited houses. But two questions must, with a view to the future, be more carefully considered. (1) How did this error in the return of inhabited houses arise? (2) What is to be said regarding the decrease in the average number of inhabitants per house from 4.7 .9 in 1571 to 4.738 in 1881 ?

As to the number of inhabited houses, if reference be
made to the City Chamberlain's Annual Reports-which constitute a valuable repertory of statistical facts concerning the City-there will be found statements of the number of occupied and unoccupied dwelling-houses obtained from the City Assessor. I have collected these statements for each year of the decade, and placed beside them the corresponding statements supplied to the Sanitary Department as the basis of our annual estimates of the population, and so formed the following Table:-

Inhabited Houses.

|  | City Chamberlains Statement. |  |  | ```City Assessor`s StutembNt to SaNitaler Dh:AN:TMENT.``` |
| :---: | :---: | :---: | :---: | :---: |
|  | Parliamentary Burgh. | $\begin{gathered} \text { Municipal } \\ \text { but not } \\ \text { Parliamentary. } \end{gathered}$ | Total. |  |
| 1871, | 98,414 | 2,462 | 100,876 |  |
| 1572, | 100,177 | 2,571 | 102,74S | 102,749 |
| $1573{ }^{1}$, | 101,902 | 3,141 | 105,043 | 105,013 |
| 1574, | 103,423 | 3,483 | 106,906 | 107,253 |
| 1575, | 103,696 | 3,757 | 107,483 | 109,069 |
| 1576, | 104,530 | 4,201 | 108,731 | 109,761 |
| 1877. | 105, 062 | 4,42S | 109,490 | 111,4S4 |
| $1875^{-}$ | 104,496 | 4,440 | 108,936 | 111,002 |
| 1579, | 102, 44S | 4,441 | 106,SS? | 109,700 |
| 1880, | 101,575 | 4,439 | 106,014 | 109,541 |
| Census 1881 | 101,793 | 4,524 | 106,317 | 109,279 |

1 Municipal Extension Act (1872) took effect.
$\because$ Do. do. (1878) do.
There is here a very serious discrepancy. Fortunately for the future, the cause of it will be obvious when it is explained that the statement supplied to the Sanitary Department was made up from a revise in February of the year to which it applied, of the roll for the previous year. The houses occupied which were previously unoccupied were noted, but the difficulty was to ascertain how many of these new occupancies were simply transfers from one house within the municipal limits to another. In times of commercial activity, and consequent rapid urban growth, when the town, so to speak,
was full and empty houses scarce, a large proportion would be really new householders, additions to the inhabitants; but in times of depression and urban decadence, when empty houses were abundant, and opportunities tempting and frequent for change of residence in search of lower rents or of employment, then the proportion of householders really new to the City would be small. In the effort to balance the absolute result of these changes in circumstances so different and difficult of estimation, the number of inhabited houses came more and more to be over-estimated. The provisional estimate of February was supplied to meet our urgency to ascertain the population early in the year for use in the returns made fortnightly, and especially for the Quarterly Reports. On the other hand, the statement supplied to the City Chamberlain was compiled from the Statutory Assessment Roll, as finally adjusted in June of each year, when all these sources of error had been eliminated. If this return for 1880 is compared with the results of the Census in 1881, remembering the low vitality of the community, the agreement is such as to stamp the whole series of statements made to the Chamberlain as practically accurate. In future, then, the Sanitary Department will be supplied with a statement of the inhabited houses from the roll as completed in June of each year, which is also the centre of the year, to which the Registrar-General always adjusts his estimates.

As to the variations between one Census and another in the number of inhabitants per house, we have seen that, so far as the range of variation between 1871 and 1881 extends, provided the number of inhabited houses is accurate, it would not seriously affect the estimate of population. But, having reference to the future, it becomes important to ascertain, as a matter of experience, to what extent this interesting item of social statistics has varied from Census to Census in Glasgow. Unfortunately, the data for the determination of the question have, until last Census, been haunted and deranged by the importation into Scotch enumerations of those English
notions of the definition of a house to which allusion has already been made. Still, from independent local cfforts, trustworthy information was, after 1811, obtained. In the following Table I have collected information as correctly as possible from the sources indicated on this and other matters.

| Authority. | Persons Per House (with Institutions and Harbour). | Persons Per Housc (without Institutions and Harbour). | $\begin{aligned} & \text { liooms } \\ & \text { per } \\ & \text { House. } \end{aligned}$ | $\begin{gathered} \text { Inmates } \\ \text { per } \\ \text { lioom. } \end{gathered}$ |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| I. 1801 | 3. 816 ? | $\ldots$ | $\ldots$ |  | $5 \frac{1}{2}$ |  |
| I. 1811 | $5 \cdot 742$ ? |  |  |  | $3 \frac{4}{5}$ |  |
| I. 1819 | 4.734 | $4 \cdot 681$ | $2 \cdot 283$ | $2 \cdot 050$ | 4 | ${ }^{1} 100_{10}^{3}$ |
| II. 1821 | $4 \cdot 646$ |  |  | - | $\overline{\mathrm{j}} \frac{7}{10}$ |  |
| II1. 1831 | $4 \cdot 866$ |  |  |  | 4 | $17 \frac{1}{2}$ |
| (1841 | $5 \cdot 234$ | $5 \cdot 050^{3}$ | ... |  | $4 \frac{1}{5}$ | 16 |
| IV. 1851 | $5 \cdot 222$ | $5 \cdot 050$ |  |  | $2{ }_{20}^{4}$ | 18 |
| IV. 1561 | $4 \cdot 787$ | $4 \cdot 720$ | $2 \cdot 2924$ | 2.0884 | $4{ }_{1}{ }^{5}$ | 16 |
| ( 1871 | $4 \cdot 861$ | 4.793 | $2 \cdot 307$ + | $2 \cdot 104{ }^{4}$ | 2 | 14 |
| 1881 | 4.801 | $4.738^{6}$ | $\therefore 3422^{5}$ | $2.054^{5}$ | $10{ }_{\text {T }}{ }^{\text {a }}$ | 13 |

1.-Enumeration of the Inhabitants of the City of Glasgow. Dr. Cleland, 1820, 1י1. Jand 6 .
11. -Enmmemation of the lnlabitants of Scotland, de. Dr. Cleland, 182:\%, 1, ש2.
111.-Enmmeration of the Inhabitants of the City of Glasgow and County of Lanark for the

Government Census of $18: 31$, \&c. Dr. Cleland, 18:22, p. 200. lV.-Witt's, Strang's, and Watson's respective Census lieports.
${ }^{1}$ Inchades Children both whose parents were hrish.
2. For every apartment there are two persons to occupy it."-Note by Dr. Cleland.
${ }^{3} 5 \cdot 15$ for City and Suburbs.
4 Parliamentary Burgh.
${ }^{5}$ Municipality.
6 The average over the whole Registration Area is 476 .
Beginning with Dr. Cleland's claborate and careful special Census in 1819, we have a succession of trustworthy data. These show that the average number of inmates per occupied house has considerable limits of variation. Excluding institutions and Harbour, the highest was 5.05 in 1841 and 1851, the lowest 4651 in $1819-a$ range of 369 . The high average in those two years is not explained by Dr. Strang. Probably it arose from the cxcentric growth of the City, comprising the larger class of houses, not being yet projected beyond the bounds. It is at any rate remarkable that the average per house in the suburban parts of
the present Registiation wrea is 50082 . Comparing the condition of the City as to house-accommodation, as disclosed by the recent Census, with its condition at those preceding, we observe that the number of persons to each house is lower than in 1871, but not so low as in 1861; that the average size of the houses is more commodious now than in 1819, as regards the number of rooms, and relatively to the number of inmates per room about the same. Probably the fact which is at the bottom of this increase of housc-room is the last which this Table proves with refcrence to accommodation-that the number of unoccupied houses is about 11 per cent. of the whole, nearly twice the proportion of which there is any record at any period, the next lighest being $5_{\frac{7}{10}}^{\frac{7}{0}}$ in 1821. That this is the explanation seems confirmed by the circumstance that in 1871, when the proportion of empty houses was ouly 2 per cent.-the lowest on record-the number of inmates per house was higher than at any Census since 1851, and the number of inmates per room was the highest on record. Apparently the most gencral expression of the meaning of these figures is that in times of great prosperity and rapid growth there is a tendency to overcrowding of the house-accommodation, and that one of the cffects of the opposite condition of city life is not only to diminish the population by reducing the householders, but to reduce the size of the families by driving out lodgers, and leading to the emigration of adults in search of employment. Therefore, from a sanitary aspect, the conditions of health of the remaining population are improved by the thinning of the inhabitants, and the consequent increase of air-space.

It must not be forgot that, within the period intervening between the Census of 1871 and that of 1881 , the operations of the Improvement Trust have been carried out. The Improvement Act was passed in 1860, and involved a population of over 51,000 persons, living in some 10,000 houses. The work of demolition was begun in 1870, and has been in great part completed, but reconstruction has uot gone far, as
is evidenced by the large houseless tracts of ground waiting for feuars. The Streets Improvement Act (1S73) extended those operations. The effect upon the people displaced has bcen, as I have proved in special Reports, by following them to their new habitations, to improve the character of their houses both in size and situation. My object now is not to discuss these advantages, but to point out the disturbing influences at work in the community which tended to upset the application of the social statistics of 1871 to the following years; and, when we add the local redistributions, and the general attendant bouleversement of the central parts of the City caused by those Acts, and by various huge railway schemes, to the abnormal forces of commercial depression and consequent depopulation, it must be admitted no more complicated problem could be presented to a statistician than is implied in the effort to obtain a firm footing in the midst of such internal revolutions.

We are, indeed, in possession of exact figures as to the comparative housing of the population at different points in the last decade, so far as this can be estimated by the number of apartments per house. The following statement shows the classitication of the total houses (occupied and unoccupied) in the City in 1873 (the earliest year for which I have the information) and in 1850 :-

|  | 1 Apt. | $\because$ Apts. | : A pts . | 1 Apts. | j Apts. \&up. | Total. |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| 1573, | .35, 037 | $45, S 2 S$ | 14,090 | -5,521 | 6,361 | 106,837 |
| 1880, | .35, 843 | 52,693 | 17,746 | 6,623 | 6,223 | 119,128 |
| Differeuce, | $+500^{\circ}$ | +6,565 | $+3,656$ | +1,102 | -13S | $+12,291$ |
| Do. per cent. | $+2 \cdot 3$ | +15 | +26 | $+20$ | - 2 |  |
| Pereentage, 1573, | $32 \cdot 80$ | $42 \cdot 90$ | $13 \cdot 19$ | $5 \cdot 16$ | $5 \cdot 95$ |  |
| Do., 1SS0, | 30.08 | $44 \cdot 23$ | 14.SS | 5.56 | $5 \cdot 22$ |  |
| Difference, | $-2 \cdot 72$ | +1.33 | $+1 \cdot 69$ | $+0 \cdot 40$ | -0.73 |  |

So that Glasgow, while still and increasingly a city of small houses ( $89 \cdot 2$ per cent. being houses of 1,2 , and 3 apartments in 1880, against SS.S per cent. in 1873), has a smaller proportion of single apartment houses and a larger proportion of houses of 2 and 3 apartments than in 1873.

The number of houses of 5 apartments and upwards bears such a small proportion to the whole that, although they are now absolutely less by fully 2 per cent. than in 1873, the average shows a general improvement in this important matter of house-room. Hence the larger average of rooms per house, and the lower average of inmates per room, shown in the 'Iable. Although a considerable proportion of the smaller houses is produced by the vicious method of "making down" larger houses-i.e., subdividing the houses of 4 apartments and upwards into smaller occupancies -there has been an enormous development in the building of small houses in the decade. From the column in Table, p. 27, which shows the yearly number of houses in the tenements for the erection of which the sanction of the Dean of Guild Court was obtained, it will be secn that the aggregate amounts to 33,395 . Of these 23 per cent. were houses of 1 apartment, 50 per cent. of 2 apartments, 19 per cent. of 3 apartments, and only 5 per cent. of 4 apartments and $2 \frac{1}{2}$ per cent. of 5 apartmonts and upwards. These new houses alone would accommodate a population of 158,000 souls !

It is evident also that of the 119,000 occupied and unoccupied houses in existence on 4th April, 1881, no less than 28 per cent. had been built during the previous ton years! That is to say-supposing on 1st January, 1871, the first stone of this new Glasgow had been laid, we should now have a city considerably larger than the Dundee of to-day, or the Glasgow of 1821.

## Ages of the Population.

Having estimated the population living in the inter-census years, the total has to be subdivided into those living at certain ages. For this also we have to go back to the Census, and to assume that the proportion enumerated at each period in the Census year continues the same at each year of the ten. Here, too, we make an assumption which, through the operation

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of obvious natural causes, may be made erroneous. Births depend in the main upon marriages, and marriages are greatly influenced by the prosperity or dulness of trade in the com-munity-conditions which also attract new life to the City, or drive out adults in search of employment. The intervention of epidemics is another important factor; and of these, some cut off adults chiefly, others affect children. Cold winters and warm summers bring ill health and a high mortality-the former among the aged, the latter among the young. There is every probability, therefore, that the number living at the various periods of life will not constitute a constant proportion of the whole population throughout such a stretch of time as a decade. What is the actual experience comparing one Census with another? The following Table gives the result of seven successive enumerations of the population of Glasgow, the periods of life being those selected in the local and national returns of mortality hitherto-five in number-from 1841 downwards:-

|  | Lndele 1. | 1 то 5. | Under 5. | 5) To 20. | 20 то 60. | G0 and Above. |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| 1821 |  |  | 14.45 | $34 \cdot 08$ | $46 \cdot 15$ | $5 \cdot 30$ |
| 1831 |  |  | $14 \cdot 96$ | $33 \cdot 43$ | $46 \cdot 56$ | $5 \cdot 05$ |
| 1841 | $2 \cdot 96$ | $9 \cdot 94$ | 12.90 | $32 \cdot 36$ | 50.51 | $4 \cdot 2$ |
| 1851 | $3 \cdot 24$ | $9 \cdot 19$ | 12.43 | $31 \cdot 96$ | 51.24 | $4 \cdot 37$ |
| 1861 | $3 \cdot 39$ | $10 \cdot 5 \mathrm{~S}$ | 13.97 | $30 \cdot 50$ | $50 \cdot 84$ | $4 \cdot 69$ |
| 1871 | $3 \cdot 40$ | $10 \cdot 33$ | 13.73 | 31.28 | 49.99 | $4 \cdot 99$ |
| 1881 | $3 \cdot 10$ | $10 \cdot \% 7$ | 13.67 | $31 \cdot 17$ | 49.89 | 5•26 |

These figures are very interesting as a series, but to us the interest at present lies in the comparison of the results in pairs, and observing how far the former is from being a forecast of the latter. The following is a Table of Differences in which, opposite each year, is given the difference between the enumerated proportion of that year and that of the previous year, indicating the actual as more or less than the estimated:-

|  | Under 1. | 1 to 5. | Under 5. | 5 to 20. | 20 to 60. | CO \& above. |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| 1821-31, |  | ... | $+0 \% 1$ | $-0.65$ | $+0 \cdot 41$ | -0.25 |
| 1S31-41, |  |  | $-2.06$ | $-1.07$ | $+3 \cdot 95$ | -0.83 |
| 1841-51, | $+0.28$ | -0.75 | - 0.47 | $-0.40$ | $+073$ | + $0 \cdot 15$ |
| 1851-61, | $+0 \cdot 15$ | +1.39 | $+1.54$ | $-1.46$ | -0.40 | + $0 \cdot 32$ |
| 1861-71, | $+0.01$ | $-0.25$ | $-0.24$ | + 0.78 | -0.85 | +0.30 |
| 1871-81, | - 0.30 | $+0.24$ | $-0.06$ | $-0.11$ | $-0 \cdot 10$ | +0.27 |

As in the case of the aggregate population, so in the case of these subdivisions of it, the practical question is, Are these differences beyond the limits of accuracy? This depends upon the proportion of the error to the correct number. The same differences in the proportions living under 5 and above 60 , and in the other periods, would be trifling at the other periods even if serious in them, because of the small numbers. It is apparent that, on the whole, the discrepancy between the last Census and the previous has been less than between any preceding pair of enumerations-i.e., the population has been more stable in its composition as to age, the chief change being a smaller proportion of children and a larger proportion of aged people. The difference will be best shown by applying the proportion of 1871 to the population of 1881, and contrasting the number actually enumerated at each period with the number so estimated-

|  | Under 1. | 1 to 5. | Under 5. | 5 to 20. | 20 to 60. | C0 and above. |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| 1881-Actual | 15,872 | 54,059 | 69,931 | 159,477 | 255,191 | 26,921 |
| 1871,.. | 17,391 | 52, 540 | 70,231 | 160,003 | 255,708 | 25,524 |
| Difference between |  |  |  |  |  |  |
| Actual and Esti- | $+1519$ | -1219 | $+300$ | + 526 | + 517 | $-1.397$ |
| Per cent. of | $+8 \cdot 7$ | $-2 \cdot 3$ | $+0.42$ | $+0.33$ | $+0 \cdot 20$ | $-5 \cdot 5$ |

The error is serious in the two periods of childhood, but in opposite directions, so that "under 5 " is fairly accurate. The next two periods are practically accurate, while the period " 60 and above" is seriously wrong by defect.

## The Revised Vital Statistics of the Decade.

We have now exhausted our consideration of the results of the enumeration of 1871 and 1881, especially with a view to determining how far the forecasts of 1881, as deduced from the facts ascertained in 1871, have stood the test of comparison with the actual condition of affairs in 1881. We have found that the ascertained differ in many respects widely from the anticipated facts. The great centrial difference, involved within which and surromeling which are many subordinate differences, is this-that in place of adding to our population at the rate of nearly 22 per cent. in the last decade, as we did in the one preceding, we have added only 4 per cent. So expressed, this is like the aunual balance of a merchant's books. The balance shows a profit or a loss of so much on the year, but the few figures which give the amount on one side or the other represent the outcome of a multitude of trausactions spreal over the year. Had the balance been taken month by month, one would have shown a profit, another a loss, or perhaps an increasing profit or an increasing loss. As the growth or decline of a city is in its ultimate nature a vital process, a truer analogy will be found in some essentially vital phenomenon, such as the growth of a child into the adult. This is measured by stature and weight; but when we say the average gain in weight or in height in a year is so much, we express the process of nature in the form of an arithmetical fiction. The process of nature is gradual always in health, subject to the abnormal interferences of disease, more or less nutrition, \&c., \&c. No acute angle in reality marks the passage from one period to another. So it undoubtedly is with a city. The method adopted by the Registrar-General is to assume that on the 1st January, 1871,

Glasgow suddenly ceased to develop at the rate of $2 \cdot 165$ $\left({ }^{-1} 166^{5}\right)$ and began to develop at the rate of $4\left(\frac{4}{10}\right)$ annually. He will therefore sweep aside all the calculations as to death, birth, and marriage rates, which he has published on the assumption that the rate of growth continued into the last decade at $2 \cdot 165$ per annum, and substitute calculations based on the assumption that the rate suddenly became $\cdot 4$. But more than this, he will, until next Census is taken, calculate all his rates upon the assumption that the slow rate of growth continues. Both of these assumptions are alike contrary to the natural probabilities of the case. What I now propose to do is to endeavour to raise those probabilities to the position of certainties, by collecting such facts as are accessible in proof of the gradual nature of the declension of our rate of growth. Some of these facts are simple matters of local and national history. The decade began in the heyday of commercial prosperity. It led us year by year into the depths of unprecedented depression, and left us in sight of a revival of trade. The failure of the City of Glasgow Bank in the autumn of 1878 added local intensity to a condition which previously we had simply shared with the country generally. The winter of $1878-79$ was probably the gloomiest which the City had ever seen, and fraught with more anxiety to its rulers. A gigantic organization for the relief of the unemployed was in operation, and renewed on a smaller scale in the winter ensuing. In 1878-79 nearly 14,000 applications for relief were received from persons whose dependants numbered 26,500 souls. Above $£ 26,000$ were expended in food and wages for test-work. Other facts, which give us evidences of the gradual declension of the City, are capable of statistical expression from year to year; and the chief of those, such as fall specially within the sphere of my observation, are collected in the following Table:--


[^4]The number of occupied houses entered on the Assessor's roll in June of each year iucreased by diminishing increments to their maximum in 1877. They then fell until in 1880 there were 3,476 less than in 1877, 892 less than in 1874, and only 5,138 more than in 1871. The largest increment was 2,29 - in 1874 ; the largest decrease 2,047 in 1879. There was, as we have already seen, not only a diminution in the number of houses occupied, but also in the number of inmates in each house, both as tested by the inmates per house and per room in the house. The number of unoccupied houses increased, year by year, from 2,154 in 1871 to 13,407 in 1880, from 2 per cent. of the total house-accommodation to 11 per cent. The records of the Dean of Guild Court show a remarkable activity in the building of dwelling-houses, culminating in 1876, when plans for no less than 7,108 were submitted and sanctioned. From that year they fell off by "leaps and bounds" to 398 in 1880! The number of marriages in a community is a true indication of its wellbeing, or the reverse. The figures given above are taken from the returns of the Registrar-General, who only embraced the whole municipality in 1875 . Previous to lst January of that year, those parts of Glasgow north of the Canal were not included. This makes the fact that in 1871 there were 4,617 marriages, and in 1879 , within an extended area, only $.4,180$, more expressive than appears from the figures without this explanation. Still more expressive is the fact that the maximum was recorded in 1872 , or three years before the extension of the Registration area. The lesser area then produced 941 more marriages than the greater area in 1879 ! 'The column headed Births represents the product of an area which was very slightly increased in 1872 and 1878-so slightly, that the increase is practically of no moment. We find that we end the decade with a birth-product 334 less than we had in its first year. The maximum was attained in 1877, the minimum in 1880. The last columns in the table are supplied by Mr. Campbell, City Assessor, who has spared no trouble in renderiug assistauce in extending and
verifying my facts. They show the number of householders under £10, within the burgh, who did not pay poor-rates. The minimum was in 1875, the maximum in 1878. Unfortunately, I cannot ascertain the total number of occupancies within the burgh, under £10, previous to 1875 , so that I can only reduce the absolute numbers to comparable percentages for the last six years of the decade; but this is sufficient to show that the pinch of hard times fell upon those year's. The minimum of this class of householders, who were unable to pay poor-rates, was 28 per cent. in 1875, and the maximum 38 per cent. in 1878.

These facts point with singular unanimity to one conclusion -that the decade may be divided into two periods of five years, the first of which were years of prosperity, the last years of adversity. Increase more or less marks the former period, decrease more or less the latter. The first five years close with an increase of 6607 inhabited houses, the last five years with a decrease of 2717 ; the first close with 4.37 per cent. empty houses, the last with 11 per cent. In the first period nearly 22,000 new houses were huilt, in the last little more than half that number. In the first period there were 24,620 marriages, in the second period 22,823 in a larger area. In the first period there were 102,286 births, in the last 101,77(). In the first there were 113,526 persons occupying houses under $£ 10$ rental who were unable to pay poor-rates, in the second 126,702. In the first period, as a matter of history, trade was certainly declining, but in the second we had the culminating crash of the Bank failure and the clamant thousands of unemployed.

I propose, therefore, to estimate the population of the first period on the basis of facts ascertained at the Census of 1871, and of the second period on the basis of facts ascertained at the Census of 1881. Whatever doubts and uncertainties may attend the intervening years, we rest upon certainty at the beginning and at the end. The number of persons found in each occupied house in 1871 was $4 \cdot 793$, in 1881, 4.738. It seems fair, therefore, to presume that, during the five prosperous years, the
multiplier 4793 may be applied to the occupied houses of each year;and during the five adverse years the multiplier 4738adding to the result in the former 6867, in the latter 7776 , the number of persons actually enumerated in institutions and in the vessels in the harbour in 1871 and in 1881. The following, then, are the respective populations, deaths, and death-rates derived from those populations in each year of the decade. In order to show how considerable must be the alteration in numbers of such magnitude as those which represent the population of Glasgow to seriously influence the death-rates per 1000 calculated therefrom, I give the populations as estimated and used from year to year in the Reports of the Department, and the death-rates founded thereon :-

|  | lierised Estimates of I'opulation. | Deaths. | 1)eathRates. | Former Estimates of Population. | Deathlates. |
| :---: | :---: | :---: | :---: | :---: | :---: |
| 1571 | 490,442 | 16,155 | $32 \cdot 90$ | 490,442 | $32 \cdot 90$ |
| 1572 | 499,338 | 14,357 | 28.75 | 502,990 | $2 \mathrm{~S} \cdot 54$ |
| 1873 | 510,338 | 14,576 | $29 \cdot 14$ | 514,295 | 2S.59 |
| 1874 | 519,267 | 16,323 | 31.43 | 525,44S | 31.04 |
| 1875 | 522,033 | 15,257 | 29.25 | 534,564 | $25^{5} 5$ |
| 1876 | 522,943 | 13,68S | $26 \cdot 17$ | 538,765 | $25 \cdot 37$ |
| 1577 | 526,540 | 13,75S | $\because 6 \cdot 12$ | 546,921 | $25 \cdot 15$ |
| 1578 | 523,914 | 14,055 | $26 \cdot 52$ | 545,737 | 25.75 |
| 1879 | 514,216 | 12,450 | $24 \cdot 21$ | 539,675 | 23.03 |
| 1 SS0 | 510,070 | 13,303 | 26.08 | 53S,985 | $24 \cdot 6 \mathrm{~S}$ |
| A verage | 513,910 | 14,425 | 28.07 | 527,782 | $27 \cdot 33$ |

The mean population, therefore, of the decade was 513,910 , the mean number of deaths per annum 14,425 , and the mean death-rate $28(28.07)$ per 1000 living. The mean of the populations as estimated by me from year to year and hitherto used is 13,872 higher, and the mean death-rate derived therefrom $27(27 \cdot 33)$, or exactly $\cdot 74$ less. The mean death-rate of the decade 1861-70, as finally adjusted by the Registrar-General, was $30(30 \cdot 29)$. There has therefore beeu a diminution of fully 2 deaths per 1000 living; that is to say,

10,278 persons are alive who at the death-rate of the previous 10 years would have been dead.

If we compare the first and last periods of five years by taking their mean populations and deaths, we get the following results :-

| $1871-75$ | 508,284 | 15,399 | $30 \cdot 29(30)$ |
| :--- | :--- | :--- | :--- |
| $1876-80$ | 519,526 | 13.451 | $2.589(26)$ |

The death-rate of the first period was 30 , of the second 26 , showing a diminution of 4 , or exactly $4 \cdot 4$ per 1000 living. When we recall the circumstances of privation and general destitution which marked the second period of five years, this improvement is surprising and gratifying.

It is important to ascertain in what direction this lowering of our death-rate has come-in which classes of disease has is saving of life been effected. The following Tahles show the number of deaths from certain causes in each year of the decade, and the death-rates, calculated from the rectified populations given above:-
NUMBER OF DEATHS FROM ('ERTAIN CAUSES IN DECADE 1871-80.


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|  |  |  | $\begin{aligned} & 10 \\ & \stackrel{1}{6} \\ & \dot{\theta} \end{aligned}$ | $\begin{aligned} & \text { N } \\ & \stackrel{0}{8} \\ & 8 \end{aligned}$ | $\begin{aligned} & 0 \\ & 0 \\ & i \\ & 0 \end{aligned}$ | $\begin{aligned} & N \\ & \stackrel{N}{6} \end{aligned}$ | $\begin{aligned} & 1 \\ & \stackrel{9}{8} \\ & \hline-1 \end{aligned}$ | $\begin{aligned} & 7 \\ & 10 \\ & 10 \end{aligned}$ | $\begin{aligned} & \stackrel{8}{4} \\ & - \end{aligned}$ | $\begin{aligned} & 8 \\ & \substack{8 \\ \infty} \end{aligned}$ | $\begin{aligned} & \text { क } \\ & \dot{+} \\ & \hline \end{aligned}$ | $\begin{aligned} & 10 \\ & 6 \\ & 6 \end{aligned}$ | $\begin{aligned} & \stackrel{0}{9} \\ & \stackrel{\rightharpoonup}{6} \end{aligned}$ | $\begin{aligned} & \overrightarrow{6} \\ & \dot{6} \end{aligned}$ |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | 14 10 0 | 穴 | ＋ | $\stackrel{S}{i}$ | ¢ | $\begin{aligned} & 10 \\ & 6 \\ & 60 \end{aligned}$ | $\begin{aligned} & \mathscr{O} \\ & \stackrel{+}{4} \end{aligned}$ | $\begin{aligned} & 6 \\ & 0 \\ & 0 \end{aligned}$ | $\stackrel{\text { ¢ }}{+}$ | $\begin{aligned} & 6 \\ & i \\ & i \end{aligned}$ | $\stackrel{9}{9}$ | $\stackrel{+}{-}$ | $\underset{\infty}{\square}$ | $\frac{10}{\infty}$ |
|  | $\begin{aligned} & \dot{\theta} \\ & \dot{\theta} \end{aligned}$ | $\bigcirc$ | $\begin{aligned} & \infty \\ & 0 \\ & 0 \end{aligned}$ | $\begin{aligned} & \underset{\sim}{e} \\ & i \Delta \end{aligned}$ | $\begin{aligned} & \text { C1 } \\ & i 0 \end{aligned}$ | $\begin{aligned} & \underset{\sim}{\dot{H}} \end{aligned}$ | $\begin{aligned} & 10 \\ & 0 \\ & 0 \end{aligned}$ | $\stackrel{\infty}{+}$ | $\overrightarrow{i s}$ | $\begin{aligned} & 11 \\ & 10 \\ & \text { io } \end{aligned}$ | $\stackrel{\rightharpoonup}{-}$ | i8 | $\begin{aligned} & 10 \\ & i \\ & i 0 \end{aligned}$ | $\begin{aligned} & \hat{i} \\ & i \end{aligned}$ |
|  | － | $\square$ <br> $\vdots$ <br> 1 | $\stackrel{\oplus}{\stackrel{\rightharpoonup}{\bullet}}$ | $\begin{aligned} & 6 \\ & 6 \end{aligned}$ | $\begin{aligned} & 10 \\ & \hat{0} \\ & \vdots \end{aligned}$ | $\begin{aligned} & \infty \\ & \stackrel{\infty}{=} \end{aligned}$ | $\begin{aligned} & 10 \\ & i \\ & i n \end{aligned}$ | $\begin{aligned} & 8 \\ & \dot{\infty} \\ & i \end{aligned}$ | $\frac{1}{6}$ | $\begin{aligned} & 8 \\ & 6 \\ & 6 \end{aligned}$ | $\begin{aligned} & \infty \\ & \infty \\ & \dot{-1} \\ & \hline-1 \end{aligned}$ | $\begin{aligned} & 10 \\ & \because 0 \\ & 61 \end{aligned}$ | $\begin{aligned} & 8 \\ & 8 \\ & 61 \end{aligned}$ | 's |
|  | $\stackrel{1}{i-1}$ | $\underset{-1}{\infty}$ | $\begin{aligned} & 9 \\ & 6 \\ & 6 \end{aligned}$ | $\begin{gathered} 1 \\ i 1 \\ i 6 \end{gathered}$ | $\begin{aligned} & \text { î̀ } \\ & \text { ion } \end{aligned}$ | $\begin{aligned} & 1 \\ & i .0 \\ & i . \end{aligned}$ | $\begin{aligned} & \bar{\infty} \\ & \dot{Q} \end{aligned}$ | $\underset{i}{*}$ | $\underset{\substack{6 \\ \hline 0 \\ \hline 0 \\ \hline}}{ }$ | $\stackrel{\infty}{\dot{i}}$ | in | － | $\underset{i}{i}$ | $\stackrel{10}{10}_{10}$ |
| 鹵 | $\stackrel{\theta}{6}$ | $\pm$ | $\begin{aligned} & 9 \\ & \vdots \\ & \hline \end{aligned}$ | $\stackrel{O}{\circ}$ |  | $\dot{8}$ | $\underset{i 1}{9}$ | $\begin{aligned} & 6 \\ & 68 \end{aligned}$ | $\begin{aligned} & \dot{8} \\ & \dot{+} \end{aligned}$ | $\stackrel{\rightharpoonup}{\infty}$ | $\begin{aligned} & \underset{\sim}{ \pm} \\ & \stackrel{-}{2} \end{aligned}$ | $\underset{\sim}{i}$ | $\begin{aligned} & \stackrel{1}{8} \\ & \hline-8 \end{aligned}$ | $\begin{aligned} & \dot{C} \\ & \dot{C} \end{aligned}$ |
|  | $\stackrel{N}{7}$ |  | $\underset{\substack{\infty \\ \text { in } \\ \hline}}{ }$ | $\hat{1}$ | $\dot{6}$ | $\stackrel{69}{\dot{0}}$ | $\begin{aligned} & 8 \\ & ! \\ & 0 \end{aligned}$ | $\dot{6}$ |  | $\dot{0}$ | $\underbrace{\infty}_{i}$ | $\begin{aligned} & 1 \\ & 0 \\ & 0 \end{aligned}$ | $\begin{aligned} & 19 \\ & -1 \end{aligned}$ | $\begin{aligned} & \dot{6} \\ & \underset{0}{6} \end{aligned}$ |
| نٍ | ${\underset{i}{0}}_{\underset{0}{H}}$ | $\stackrel{H}{0}$ | $\begin{aligned} & 0 \\ & 0 \\ & i s \end{aligned}$ | $\begin{aligned} & 0 \\ & i \\ & i \end{aligned}$ | $\because$ | $\stackrel{\rightharpoonup}{\text { if }}$ | $\stackrel{t}{c}$ | $\begin{aligned} & \infty \\ & \stackrel{\infty}{+} \end{aligned}$ | $\begin{aligned} & 19 \\ & 0 \\ & 6 \end{aligned}$ | $\begin{aligned} & 0 \\ & 0 \\ & 0 \end{aligned}$ | B | 10 61 10 | $\overbrace{i}$ | $\begin{aligned} & +1 \\ & \overleftarrow{1}_{1}^{0} \end{aligned}$ |
|  | ： | ： | $\vdots$ | $\vdots$ | $\vdots$ | ； | ： | ： |  | $\vdots$ | $\vdots$ | $\vdots$ | ． |  |
|  | $\vdots$ $\vdots$ $\vdots$ | ！ $\vdots$ | ： $\vdots$ $\vdots$ | ： $\vdots$ $\vdots$ | $\vdots$ $\vdots$ $\vdots$ | $\vdots$ $\vdots$ $\vdots$ | $\vdots$ $\vdots$ $\vdots$ | $\vdots$ $\vdots$ $\vdots$ | ： $\vdots$ $\vdots$ | $\vdots$ $\vdots$ $\vdots$ |  | $\text { 'ичวน ' } 08 \cdot 9 \leq 8$ |  | ご |
|  | $\stackrel{\pi}{\infty}$ | $\begin{aligned} & 0 i \\ & 00 \end{aligned}$ | $\begin{aligned} & 0 \\ & 10 \\ & 0 \end{aligned}$ | $\underset{-1}{\infty}$ | $\begin{aligned} & 10 \\ & 10 \\ & \hline 10 \end{aligned}$ | $0$ | $\begin{aligned} & N \\ & 1 \\ & 0 \end{aligned}$ | $\begin{aligned} & \text { N } \\ & \underline{j} \end{aligned}$ | $\begin{aligned} & E \\ & 0 \end{aligned}$ | $\begin{aligned} & 0 \\ & \infty \\ & \infty \\ & \hline \end{aligned}$ |  |  | $\begin{aligned} & \text { yin } \\ & \text { む̃ } \\ & \text { ju } \\ & 0 \end{aligned}$ | $\begin{aligned} & \text { nin } \\ & \stackrel{y}{0} \\ & 0 \\ & 0 \\ & 0 \end{aligned}$ |

The death-rates are calculated per 10,000 of the population. From the lower four lines of this last 'lable it will be seen that there has been a decided, and, in the case of Fevers and Scarlet Fever, a remarkable fall in the mortality from all forms of Zymotic Disease in the last as compared with the preceding ten years. Only 7 in place of 20 persons out of every 10,000 fell victims to Fever, and only 10 in place of 13 to Scarlet Fever. An encouraging feature of this improvement is that it is progressive. If we divide the last decade into two periods of five years, and compare therewith 1861-70, in every instance we find that the last period of five years (1876-80) shows the lowest mortality. The Fevers carried off per 10,000 living, 20 in 1861-70; 9 in 1871-5; 5 in 1876-80; and, in each case following the same succession of periods, Small-pox, 2—3-7; Scarlet Fever, 13—15-5; Measles, 8-83 - $5 \frac{1}{2}$; Hooping-cough, 15-13-12; Diphtheria, 6 $\frac{1}{2}-$ $6-5 \frac{1}{2}$; Diarrhœal Diseases, 8-9-7. But for the great milk epidemic of Enteric Fever in 1880, originated from the wretched sanitary arrangements of a farm twenty miles away, which has left its mark by a rise of $2 \frac{1}{2}$ per 10,000 on the Fever death-rate of 1880 , it might be said that the decade began with a Fever death-rate of 16 per 10,000, and year by year, with scarcely a break, recorded a fall, until it closed with one of 4 .

The mortality from Pulmonary Diseases is not diminishing. It amounts to twice the mortality from all Zymotic Diseases together, and in certain years may produce a death-rate which would be reckoned high in a country district as the aggregate death-rate from all causes. It is to be feared that while we are attacking Zymotic Diseases on their own ground, and with success, we have not yet struck home against the causes of our Pulmonary death-rate, which are an atmosphere surcharged with smoke, over-density of building, and overcrowding of the iuliabitants, with a low level of domestic comfort.

## Institutions.

A. word is necessary as to the meaning of this term
"Institutious" in Census nomenclature ; for, unfortunately, it has a special artificial meaning, and still more unfortunately a variable special artificial meaning, thus :-
"All institutions, whose inmates did not amount to $\check{50}$ persons, were treated as ordinary houses, and the particulars regarding their inmates takeu up by the ordinary enumerator." -Census of Scotland, 1861, Population T'ables and Report, p. ix.
"The larger public institutions were treated as separate enumeration districts, but those with fewer than 135 persons were treated as ordinary houses, whose numbers were taken up by the enumerator of the district in which they were situated."--Census of Scotlond, $15^{\prime} 11$, Report, vol. i., p. ג.

In 1881 the limit was raised to 200 persons, and all institutions laving a population below that number were treated as ordinary houses.

As at matter of fact special schedules are issued for "Institutions," on an estimate of the probable inmates; and as this estimate proves too high in some cases, too low in others, we find "Institutions" returned whose population is below the standard chosen, and some omitted and returned as houses whose population is above the standard! It is apparent, therefore, that, as in many other things (beginning with the determination of the areas of the Registration districts), objects quite other than social or sanitary were kept in view, in fixing what should and what should not be called an "Institution." Although, therefore, the following is by no means a complete list of institutions, it is interesting, and it comprises all that the Census designates such:-
lnmates. lrish-born. lumates. luish-born.

| Model Lodging-house (Drygate), $\ldots \ldots$. | 301 | 64 |  |
| :---: | :---: | :---: | ---: |
| Do. | (Greendyke), ..... | 291 | 77 |
| Do. | (Clyde Street),.. | 269 | 51 |
| Do. | (II'Alpine Street), | 361 | 101 |
| Do. | (N.Woodside Road), 315 | 50 |  |
| Do. | (IIyclepark Street), | 305 | 97 |
| Do. | (Portugal Street), | 317 | 92 |



Two of our Poorhouses are situated outside the Municipal boundary-the Barony in the "Landward" part of Dennistoun Registration District, the Govan Combination in Govan Church. The following, therefore, are the complete returns of indoor paupers, exclusive of the insane poor of the Barony Parish at Lenzie. It must, of course, be remembered that in the case of Govan and Barony these are derived from an area extending considerably beyond Glasgow proper.


Proportion of Inish-born in Institutions.--In the Poorhouses 26 per cent. of the inmates are Irish-born; in the Model Lodging-houses, 26 per cent.; in Her Majesty's Prison, 22 per cent.; in Public Hospitals, $16 \frac{1}{2}$ per cent.; in Reformatories and Industrial Schools, nearly 3 per cent., the inmates being children and home-born. In the Asylum of
the Little Sisters of the Poor-a charity for the reception of aged and infirm poor- 49 per cent. are Irish-born.

## "Landward" Parts of the Registration Area of Glasgow.

Those portions of the suburbs which are joined to Glasgow for registration purposes, and whose statistics are distinguished as "Landward," embrace, as already stated, the Burghs of Kinning Park, Govanhill, Pollokshields East and West, the districts of Strathbungo and Polmadie, and a large area to the East and Nortb of the City. A few data, parallel with those given for Glasgow, may be added regarding these "Landward" districts as a whole.

Their population at three successive enumerations was-

|  | Population. | Increasc. | Perentage of <br> Increasc. |
| :---: | :---: | :---: | :---: |
| 1S61, | 5,607 | $\ldots$ | $\ldots$ |
| 1S71, | 16,474 | 10,567 | $193 \cdot \mathrm{~S}$ |
| 1S81, | 39,121 | 22,647 | $137 \cdot 4$ |

Between 1861 and 1871 they all but trebled their population, while between 1871 and 1881 they gained 56 per cent. less.

Institutions.-There are two in the Landward Districts, viz: - Barnhill Poorhouse, 1,194 inmates; and Mossbank Reformatory for Boys, 371.

Ages.-Leaving out the Institutions, the following are the proportions living at various periods of life. For the sake of comparison, the proportion in Glasgow, also without Institutions, is added:-

|  | Under 1. | 1 to $\overline{5}$. | Under 5. | 5 to 20. | 20 to 60. | 60 and Upwards | $\begin{aligned} & \text { Un- } \\ & \text { known } \end{aligned}$ |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| "Landward,". | $3 \cdot 52$ | 12.65 | $16 \cdot 17$ | 33.36 | 46.79 | $3 \cdot 66$ | - 010 |
| Glasgow, ...... | $3 \cdot 14$ | $10 \cdot 70$ | $13 \cdot 84$ | $31 \cdot 30$ | $49 \cdot 71$ | $5 \cdot 13$ | . 005 |
| Difference, | + 38 | $+1.95$ | $+2 \cdot 33$ | $+2.06$ | $-2.92$ | - 1.47 | + 005 |

There are in the "Landwarl" districts, therefore, more children and fewer old people than in Glasgow. If we take shorter periods for comparison we find that there are 4.74 per cent. more persons under 15 years of age in the Landward districts than in Glasgow; 1.43 fewer between 15 and 30 ; 0.68 more between 30 and 40 ; and 3.93 fewer above 40 . The Landward districts show all the characteristics of an active, vigorous, reproductive population.

Irish-born.-The proportion to the total population is 86 per cent. In Glasgow it is 13 per cent.

Houses.-The proportion unoccupied is 15 per cent. against 11 per cent. in Glasgow.

The average number of persons per house is $5 \cdot 294$ with and $5 \cdot 082$ without Institutions.

The average number of rooms per house is $3 \cdot 187$, and the average number of persons per room 1.66.

Burgh of Govanhill.-Population, 9,634. Occupied houses, 1,981 ; unoccupied, 3556 ; rooms, 5,632 . Percentage of unoccupied houses, $15 \frac{1}{4}$. Number of persons per house, 4.863 ; number of rooms per house, 2.843 ; number of persons per foom, 1.71.

Burigh of Kinning Parl_-Population, 11,5ั56. Increase since $1871,4,339$, or 60.122 per cent. Occupied houses, 2,396; unoccupied, 443 ; rooms, 4,720. Percentage of unoccupied houses, $15 \frac{3}{4}$. Number of persons per house, 4.823 ; number of rooms per house, 1.969 ; number of persons per room, 2448.

Burgh of Pollokshields, East.-Population,4,360. Occupied houses, 786 ; unoccupied, 104; rooms, 4,069. Percentage of unoccupied houses, 113. Number of persons per house, 5.547 ; number of rooms per house, $5 \cdot 175$; number of persons per room, 1.071.

Burgh of Pollokshields.-Population, 2,104. Occupied houses, 300 ; unoccupied, 10 ; rooms, 3,358 . Percentage of unoccupied houses, $3 \frac{1}{4}$. Number of persons per house, $7 \cdot 013$;
number of rooms per house, $11 \cdot 193$; number of persons per room, 0.626 .

Remaining Landward District.-Population, 6,954. Occupied houses, 1,926 ; unoccupied, 356 ; rooms, 5,775 . Percentage of unoccupied houses, $15 \frac{1}{2}$. Number of persons per house, 3.610 ; number of rooms per house, 2.998 ; number of persons per room, 1-204.


TABLE II - CENSUS, 1S8I-GLASGOW: PROPORTION PER CENT. OF THE TOTAL POPULATION (EXCLUSIHE OF INMATES OF INSTITUTIONS), AT VARIOUS PERIODS OF LIFE, IN EACH STATISTICAL DIVISION.

STATISTICAL DIVISIONS.

- BLYTHSWOOD.

1. ENCHANGE, ...

PORT-DUNDAS,
HIGH STREET AND CLOSES, W.,
f. ST. ROLLOX,

ј. BELLGROTE AND DENNISTOUN, HIGH STREET AND CLOSES, E.
7. GREENHEAD AND LONDON ROAD,..
8. BARROTFIELD, MONTEITH ROW, ST. AJDREW'S SQUARE, CALTON PROPER, ST. ENOCH SQUARE, BROWNFIELD, BRIDGEGATE AND WYNDS, WOODSIDE, COWCADDENS, KELIINHAUGH AND SANDYFORD,.. ANDERSTON PROPER, KINGSTON, LAURIESTON, HUTCEESON SQUARE, GORBALS, SPRINGBURN AN゙D MARYHILL,

Per Cent. of Total, without Institutions,
Per Cent. of Total, including Institutions,

|  |  |  | $\begin{aligned} & \dot{4} \\ & \hdashline \\ & \hline \end{aligned}$ | $\stackrel{\infty}{10}$ | -1 | $\stackrel{\dot{0}}{\stackrel{0}{0}}$ | $\begin{array}{\|} \dot{+} \\ \hline+8 \\ \hline \end{array}$ | io |  | 商 |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| 2.064 | $7 \cdot 415$ | 8.768 | S.585 | $11 \cdot 6+2$ | 23.076 | 13.550 | 10.638 | 7-626 | 6.618 | 0.014 |
| 2.574 | 9•181 | $10-61$ | 10.017 | $10 \cdot 895$ | $19 \cdot 533$ | $13 \cdot 655$ | 10.735 | $7 \cdot 378$ | $5 \cdot 755$ | 0.010 |
| $3 \cdot 698$ | 11.989 | $13 \cdot 201$ | 11.054 | $9 \cdot 587$ | $16.64 \bar{\square}$ | 13.966 | 10.650 | $5 \cdot 548$ | 3.656 |  |
| $2 \cdot 478$ | 8.685 | 10544 | 9\%92 | 10.321 | 18.082 | 13.277 | 11-570 | 7.822 | $7 \cdot 375$ | 0.020 |
| 3.564 | $11 \cdot 584$ | 11.682 | $9 \cdot 465$ | 9.325 | $20: 319$ | $14 \cdot 166$ | 9.282 | $6 \cdot 132$ | $4 \cdot 476$ |  |
| 3.262 | 11.515 | 11.943 | 10.629 | 10:298 | $18 \cdot 500$ | 13.096 | 9.739 | $6 \cdot 171$ | 4.830 | 0.011 |
| 3.002 | $9 \cdot 482$ | 10.0ss | 8.816 | 11.257 | 18.091 | $13 \cdot 890$ | 12.337 | 7573 | $5 \cdot 458$ |  |
| 3.509 | 11.584 | 12.397 | 10.501 | 10474 | 18.935 | $12 \cdot 310$ | 9.768 | $5 \cdot 861$ | +617 | 0.009 |
| 3.092 | 10.677 | $11 \cdot 420$ | 10"237 | 10.195 | 18.387 | 12:354 | $10 \cdot 424$ | $7 \cdot 147$ | 6.061 |  |
| $2 \cdot 462$ | 8.140 | 10.175 | 9.808 | 12.008 | 20:288 | 12.189 | 10.439 | 7-875 | 6.613 |  |
| 2.642 | 8.730 | 10.103 | 10.077 | 12.927 | 17.642 | 12.668 | 12.046 | $7 \cdot 046$ | $6 \cdot 116$ |  |
| $3 \cdot 170$ | 10.171 | 11.601 | $9 \cdot 695$ | 10.245 | 17.906 | 12.778 | 10 400 | 7372 | 6.657 |  |
| $2 \cdot 152$ | 7.284 | 8.112 | 8.112 | 10.513 | 24.089 | 15.066 | 11.037 | $7 \cdot 864$ | $5 \cdot 767$ |  |
| 2.859 | $10 \cdot 417$ | 11.642 | $9 \cdot 425$ | 10:300 | $17 \cdot 887$ | $14 \cdot 181$ | 11.672 | $6.94 t$ | $4 \cdot 668$ |  |
| 2.757 | S.630 | 9•566 | S.960 | 10.033 | 18.620 | 13.606 | $13 \cdot 413$ | S.6.17 | 5.757 | 0.011 |
| $3 \cdot \pm 06$ | 11.745 | 11.616 | $9 \cdot 451$ | 9.672 | $20 \cdot 290$ | 14-361 | 9.038 | $5 \cdot 843$ | 4'568 | 0.004 |
| 3.367 | $10 \cdot 5+2$ | 11.081 | $10 \cdot 457$ | $10 \cdot 306$ | 18.446 | $13 \cdot 227$ | $11 \cdot 455$ | 6.551 | 4.555 | 0.006 |
| 2.775 | 9.525 | 10.016 | 8:384 | 10:318 | $22 \cdot 409$ | 14.733 | 9759 | $6 \cdot 263$ | $5 \cdot 609$ | 0.003 |
| 3.091 | 10.689 | $11 \cdot 396$ | 9761 | 10.192 | 19.677 | 13.686 | $10 \cdot 489$ | $6 \cdot 424$ | 4. ${ }^{\text {b }} 86$ | 0.003 |
| 2.761 | 9.952 | $10 \div 562$ | 9721 | 10.546 | 20472 | 13.613 | 10-209 | 6.747 | $5 \cdot 411$ |  |
| 3.237 | $10 \cdot 816$ | 10.783 | 9.590 | 9.965 | 19.368 | 18.350 | 10.893 | 6.629 | $5 \cdot 336$ |  |
| 3.657 | 12.102 | 11.662 | 9.701 | $9 \cdot 686$ | $20 \cdot 177$ | 13.985 | 8.973 | $5 \cdot 593$ | $4 \cdot 451$ | 0.005 |
| 2'866 | $10 \cdot 312$ | $10 \% 79$ | 9.494 | 10.320 | 19.752 | 13.541 | 11.083 | 6.028 | 5.514 | 0.007 |
| 3722 | $12 \cdot 963$ | $13 \cdot 174$ | $10 \cdot 145$ | $9 \cdot 537$ | 18.535 | 13.314 | $9 \cdot 749$ | $5 \cdot 482$ | $3 \cdot 375$ |  |
| $3 \cdot 140$ | 10.705 | 11.245 | 9.787 | 10.266 | 19.662 | 13.492 | $10 \cdot 105$ | 6.453 | $5 \cdot 134$ | 0.005 |
| $3 \cdot 107$ | 10.583 | 11.156 | 9.809 | $10 \cdot 242$ | 19.660 | 13.528 | $10 \cdot 146$ | 6492 | 5267 | 0.005 |

table ifi-glagoif: comparative statement of acreage, inhabited houjes, population, percentage at certain ages of total population, \&c., \&c, at the census periods, 1871 and issi, in each statistical division

|  | statistical divisoxs. |  | Acreage. |  | Iolabited Howess. |  | porulation of districis. |  |  |  |  |  |  |  | $\begin{gathered} \text { Difference of } \\ \text { Total } \\ \text { Populations. } \end{gathered}$ |  | Penemercese |  |  |  |  |  |  |  |  |  |  |  | Persous per |  |  |  | For 1881 only. |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  |  |  |  |  |  |  | Without Institutions. |  | Institutios. |  | Hatbour. |  | Toria Porouation. |  | Incease. | Deerease. | Under 1. |  | 1-4. |  | Under 5. |  | 5-20. |  | 20-60. |  | $60-$ |  | $\begin{aligned} & \text { Acere fincluding } \\ & \text { Institution } \\ & \text { and Harboury). } \end{aligned}$ |  | House (excludingInstitntions audHarbour) |  | Percent.azeZntishBoril. |  | $\begin{aligned} & \text { Peronsen } \\ & \text { Reamer } \end{aligned}$ |  |
|  |  |  | 1571. | 188. | 187. | 1881. | 1571. | 1881. | 1887. | 1851. | 187. | 1881. | 1871. | 1881. |  |  | 1871. | 1881. | 1887. | 1881. | 187. | 188. | 1581. | 1881. | 1871. | 1881. | 1871. | 1881. | 157.1 | 1851. | 1871. | 1888. |  |  |  |  |
|  | Brthasrod, ... ... ... ... |  | 266 | ${ }_{266}$ | ${ }^{6,633}$ | 5,295 | 33,42 | 26,759 |  |  |  |  | 33,41 | 26,759 | ..' | ,653 | 2.42 | 2064 | 800 | 413 | 10.43 | 9477 | 29:31 | 996 | 54.00 | 54.890 | 6.19 | ${ }^{6} \cdot 16$ | ${ }^{120}$ | 101 | P996 | 5059 | ${ }_{5} \cdot 10$ | 4.065 | 250 |  |
| 1. | Exchange, |  | 215 | ${ }^{215}$ | 4,296 | 3,811 | 24,369 | 18,798 | 1,985 | 819 | . |  | 26,353 | 20,617 |  | 5,737 | 3.03 | 2.574 | 9.48 | 9.182 | 12:52 | 11.756 | ${ }^{3077}$ | ${ }_{31} 1773$ | 37 | 313 | 35 | $7^{755}$ | ${ }^{123}$ | ${ }_{9}$ | 5672 | +933 | 840 | 2.955 | $1: 380$ | 1. |
|  | Port-Dandas |  | ${ }^{73}$ | 73 | ${ }_{981}$ | 946 | 5,305 | 4,00 |  |  | ..' |  | 5,305 | 4,70¢ |  | 601 | 372 | 3.698 | $11 \cdot 42$ | 11.989 | 15.21 | 15.688 | ${ }^{33} 53$ | 33:8+3 | 48.01 | 46:811 | 3.02 | $3 \cdot 631$ | ${ }^{3}$ | ${ }^{6}$ | 5407 | 4.972 | 1857 | 1779 | 2.763 | 2. |
|  | High street and Closes Test, ... |  | ${ }_{42}$ | ${ }^{2}$ | 42 | 2,026 | 12,259 | 9,844 | 362 | ${ }^{214}$ | ... |  | 12,621 | 10,058 |  | 2,563 | 3.11 | 2478 | 10.01 | ${ }^{6635}$ | 13.24 | 11.164 | 29.56 | 30.688 | 5103 | 50.772 | ${ }^{6} 16$ | 7375 | 301 | 239 | $3 \cdot 301$ | 4.558 | 16.20 | 1:14 | 2.750 | 3. |
|  | St. Rollos, ... ... ... | ... | ${ }^{45}$ | ${ }^{4} 5$ | 2,929 | 3,021 | 888 | 252 |  |  |  |  | 12,988 | 14,252 | 1,264 |  | 4.13 | 3.564 | 11.50 | 11.584 | 15.64 | 15.148 | 29.55 | 30473 | 50.93 | $49 \cdot 902$ | 3.88 | ${ }_{4 \times 46}$ | ${ }^{259}$ | ${ }^{316}$ | 4.334 | 4.718 | 12:32 | 1.983 | $2: 376$ | 4. |
| ${ }^{5 .}$ | Bellgrore and Denuistoun. |  | 1,108 | 1,152 | 8,794 | 11,2 | 39,653 | 53,144 | 1,285 | 1,051 | ... |  | 40,938 | 3,195 | 13,257 |  | 3:53 | ${ }^{3} 262$ | 1148 | $11: 515$ | 14.97 | $14 \cdot 778$ | 33:50 | 71 | 46.61 | 47.5 | 4.85 | $4: 880$ | ${ }^{37}$ | 47 | $4: 509$ | 4721 | 117 | 2:304 | 2.059 | 5. |
|  | High street and Closese East. | ... | 50 | 50 | 3,404 | 1,406 | 16,676 | 6,760 | ${ }_{856}$ | 985 | ... |  | 17,532 | 7,745 |  | 9,787 | $3: 32$ | 3.002 | 10.02 | 9.482 | 13:36 | 12:455 | 31.12 | ${ }^{30 \cdot 162}$ | 5029 | 51893 | 5203 | 5445 | 331 | ${ }^{155}$ | 4.814 | 4880 | 16:30 | 1 1.830 | 3.010 | ${ }^{6}$ |
| - | Greenhead and London Road, |  | 857 | ${ }_{587}$ | 7,169 | 9,538 | 29,885 | 41,050 | ${ }_{635}$ | ${ }^{745}$ | ... |  | 30,520 | 41,795 | 275 | ... | 93 | 3:509 | 11.25 | 11.554 | 1519 | 15094 | 33.42 | 33:373 | 47.08 | 4:6914 | ${ }^{4.27}$ | 4-617 | ${ }^{36}$ | 3 | ${ }^{4.168}$ | 4:608 | - | 1.762 | , | $\%$ |
| s. | Barrowide | ... | ${ }^{123}$ | ${ }^{123}$ | 6,511 | 6,603 | 30,108 | 28,807 |  |  | ... |  | 30,108 | 2s,807 |  | 1,301 | 3.48 | 3.092 | $10 \cdot 41$ | 10.677 | $13 \cdot 90$ | 13.70 | ${ }^{33 \cdot 12}$ | ${ }_{31} \cdot 833$ | 4744 | 48:314 | 5:53 | 0.001 | 245 | ${ }^{233}$ | +608 | 4:362 | $15 \cdot 11$ | 1.67 | 2.597 | s. |
| 9. | Monteith Row, ... ... ... | ... | ${ }^{115}$ | ${ }^{115}$ | ${ }^{995}$ | ${ }^{949}$ | 4,513 | 4,914 |  | $\cdots$ | ... |  | 4,513 | 4,914 | 401 |  | 12 | 2. 662 | $8 \cdot 63$ | 8.40 | 1170 | 10.602 | 29.31 | ${ }^{31} 1990$ | 52.60 | 50793 | 6.38 | $6 \cdot 613$ | ${ }^{39}$ |  | $4 \div 35$ | 5.1 | 9.32 | ${ }^{3.078}$ | 1.682 | 9. |
| ${ }^{10}$ | st Anderens Square, |  | ${ }^{22}$ | 22 | 1,432 | 770 | 7,862 | 3,860 | 164 | 291 |  |  | 8,026 | 4,151 |  | 3,575 | $3 \cdot 10$ | 2.642 | 9.56 | s.730 | 12:68 | 11373 | 30204 | ${ }^{33} 108$ | 52.12 | $49 \cdot 404$ | 4.95 | ${ }^{6.113}$ | 365 | 189 | 5490 | 5.012 | 20.71 | 2:53 | $2 \cdot 1$ | 10. |
| ${ }^{11}$. | Cation Proper, |  | ${ }_{6} 6$ | ${ }_{60}$ | 5,769 | 4,002 | 25,637 | 21,225 |  | 269 | .- |  | 25,637 | 22,094 |  | 3,543 | 3.48 | $3 \cdot 170$ | 10.61 | 10.771 | 14.10 | 13:342 | 31-31 | 31511 | 45.36 | 48455 | $6 \cdot 12$ | 6.657 | ${ }_{388}$ | 335 | ${ }^{4.413}$ | 4.452 | 15.57 | 1.78 | 2:511 | 11. |
| 12 | st. Enooh Square, |  | st | ${ }^{8}$ | 1,391 | 662 | 7,726 | 3,624 | si | ... |  | 0 | 7,507 | 3,660 | $\cdots$ | 4,147 | 2.73 | 2.131 | s.91 | 7013 | 11:93 | 9.34 | $30 \cdot 62$ | ${ }^{26} 6339$ | 52.33 | 55.278 | 5.12 | 5.737 | ${ }^{9}$ | * | 5.354 | $5 \cdot 47$ | 12:9 | $3 \cdot 49$ | 1.581 | 12. |
| ${ }^{13}$ | Brownfeld, ... |  | 11 | 11 | 726 | 685 | 3,399 | 3,427 | ${ }^{303}$ | 361 |  | ${ }_{3}$ | 3,702 | 3,826 | 124 |  | 3.64 | 2.828 | 9.63 | 10333 | 13.50 | ${ }^{13 \cdot 1}$ | 29.51 | ${ }^{31} 197$ | 52.16 | 51.024 | 488 | 4.646 | ${ }_{3}^{37}$ | ${ }^{3} 18$ | 4:681 | 5.00 | 17.21 | ${ }^{2} \cdot 127$ | ${ }^{2} \cdot 625$ | ${ }^{13}$ |
| $1 \pm$ | Bridgegate and Wyuds, | . | ${ }_{3}$ | ${ }_{35}$ | 2,550 | 1,42 | 14,294 | 7,798 | ... | ... | ... |  | 14,2 | 7,798 |  | 6,496 | $2 \cdot 9$ | 2.757 | 929 | 8630 | 12.24 | 11:357 | 30.35 | 28.584 | 52.32 | ${ }^{54272}$ | 5.10 | 57.75 | 108 | ${ }^{223}$ | 506 | 5464 | 31.6 | 1.83 | 294 | ${ }^{14 .}$ |
| ${ }^{15}$. | Toodside, ... ... |  | ${ }^{336}$ | ${ }^{336}$ | ${ }_{6}^{6,158}$ | 9,435 | 27,116 | 44,765 | ... | 315 | ... |  | 27,116 | 45,050 | 17,964 |  | $3 \cdot 49$ | 3.406 | $10 \% 2$ | 11745 | 14.23 | 15:152 | 31.4 | 30.740 | 49.50 | ${ }^{49}$ | 452 | $4 \sim 5$ | 81 | ${ }^{134}$ | $4 \times 0$ | 4.743 | 7.97 | 2:603 | 1.763 | ${ }^{15}$ |
| 16. | Coweaddens, ... ... |  | ${ }^{61}$ | ${ }_{6}$ | 4,143 | 3,384 | 19,270 | 15,233 | ... |  | ... |  | 19,270 | 15,233 | ... | 4,037 | 3:35 | 3:367 | ${ }^{1163}$ | 10512 | 15.50 | 13.910 | 3145 | 31 -45 | $49 \cdot 15$ | 49:688 | $3 \cdot 90$ | 4.50 | 316 | 249 | 4631 | 4.501 | 2140 | 1;701 | ${ }^{2.645}$ | 16. |
| ${ }^{17}$. | Kelriohaugh and Sand forre, |  | ${ }^{665}$ | ${ }_{828} 8$ | 3,467 | 5,179 | 20,983 | 26,118 |  | ${ }^{34}$ | 100 | 162 | 21,083 | 26,628 | ${ }^{5,445}$ |  | 2.78 | 2.758 | 923 | 9467 | 19.11 | $12 \cdot 226$ | 29.93 | 28.801 | 52.93 | 53:36 | $5 \cdot 00$ | $5 \cdot 55$ | ${ }^{37}$ | ${ }_{4}$ | 5426 | 5043 | 6.02 | 3:883 | $1 \cdot 323$ | 17. |
| 18. | Anderston Prover, |  | ${ }^{127}$ | ${ }^{127}$ | 6,350 | 6,052 | 31,464 | 28,561 |  | ${ }^{30}$ | 166 | ${ }^{163}$ | 31,630 | 29,031 | ... | 2,599 | 3:83 | 3.073 | 10.87 | 10.628 | ${ }^{14773}$ | 13:701 | 29.96 | 31.226 | $50 \cdot 41$ | 50.496 | 4.56 | 4 -5is | 249 | 229 | 4:593 | 477 | 20.02 | 1.986 | ${ }^{2} 411$ | 18. |
| 19. | hingston, |  | ${ }^{370}$ | ${ }^{388}$ | 7,677 | 7,866 | 36,067 | 37,660 | ${ }^{630}$ |  | 200 | 275 | 36,897 | 37,935 | 1,03s |  | ${ }^{3} 47$ | 2.741 | 10.07 | 9:880 | 13.63 | 12.621 | 30.95 | ${ }^{30.662}$ | 50.64 | 51.324 | 473 | 5830 | 100 | 97 | 4 4,678 | 4787 | 8.46 | $2 \cdot 671$ | 1.80 | 19. |
| 20. | Larrieston, |  | , | 49 | 2,423 | 1,906 | 12,205 | 9,051 |  |  | 100 | 80 | 12,305 | 0,131 |  | 3,174 | $3 \cdot 15$ | 3.208 | 10.22 | 10721 | 13\%2 | 13:330 | ${ }^{3174}$ | 30.1 | 49:89 | 50:564 | 485 | 5.32 | 281 | 186 | 5.037 | 4.748 | 14\%3 | 144 | ${ }^{29} 42$ | 20. |
| 21. | Hnteresos Sqqare, |  | 391 | ${ }^{133}$ | ¢,48t | 12,005 | 35,811 | 54,704 |  |  | ... |  | 38,811 | 54,704 | 15, 593 |  | 3.97 | 3.657 | 11.22 | 12:102 | 15.20 | 15.761 | 31.17 | 31018 | $49: 40$ | ${ }^{48} 778$ | $4 \cdot 20$ | 4.451 | 39 | 121 | $4 \cdot 5 \pi 4$ | 4.536 | 10.7 | 1.98 | 2.299 | ${ }^{1}$. |
| 22 | Corrals, |  | 48 | 45 | 3,844 | 2.695 | 16,811 | 12,839 | ... | 317 | ... |  | 16,811 | 13,156 |  | 3,655 | 3.26 | 2866 | 10.53 | 10312 | 13:80 | 13:178 | 30.98 | 30.394 | 50.0s | 50712 | 5.12 | 5.514 | 330 | ${ }^{274}$ | 4373 | 4.764 | 21. | 2027 | 2407 | 22. |
|  | Springburn and Slarrhill, |  | 729 | 886 | 2,461 | 4,975 | 12,732 | 22,217 |  |  |  |  | 12,732 | 22,217 | 9,485 |  | 4.14 | 3.722 | 12:59 | ${ }^{12} 963$ | 16.58 | 16:655 | 33:75 | 32 P87 | 46.41 | ${ }^{47} 081$ | ${ }^{3.23}$ | 3:3 | ${ }^{17}$ | 25 | 5173 | 4.964 | 20.05 | 1.924 | 2.579 |  |
|  | Torass, within 3 Sunicipal Boundery, |  | 5,791 | 6,111 | 12,749 | 106,317 | 488,575 | 503,744 | 6,301 | 7,020 | 566 | 756 | 490,42 | 511,520 | 21,078 | ... | $3 \cdot 4$ | ${ }^{3 \cdot 135}$ | 10.32 | 10.689 | 13.66 | 13.825 | 31.31 | 31266 | 49.90 | 49777 | 4.90 | 5.131 | si | ${ }^{84}$ | 4706 | 4738 | 1274 | $2 \cdot 392$ | ${ }^{2} 00$ |  |

$=$


TABLE IT．－CENSUS．18S1－GLASGOW：AGES OF THE POPULATION IN＂LANDWARD＂PORTIONS OF REGISTRATION DISTRICTS，DISTINGUISHING INMATES OF INSTITUTIONS ；
aLSO NUMBER OF IRISH－BORN，AND OF INHABI＇YD AND EMPTY HOUSES

| registration districts． | Uxder 1 tear， |  |  | 1－－4． |  |  | 5－9． |  |  | 10－14． |  |  | 15－19． |  |  | 20－29． |  |  | $30-39$. |  |  | $40-49$. |  |  | $50-59$. |  |  | 60 amd Upwards． |  |  | Not Kıown． |  |  | GRAND Total． |  |  |  | Housis． |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  |  |  |  | 兂 |  | 立 | 咅 |  | 容 | 威 | $\begin{aligned} & \text { 感 } \\ & \hline \end{aligned}$ | 듕 | $\frac{8}{3}$ | E. |  | 皆 |  | 宫 | 感 |  | 亭 | 辱 |  | 郘 |  | $\begin{aligned} & \text { 密 } \\ & \text { 息 } \end{aligned}$ | 言 | 皆 |  | 言 | 号 | $\begin{aligned} & \text { 坒 } \\ & \text { 息 } \end{aligned}$ | 颜 | 吕 | $\begin{aligned} & \text { gix } \\ & \hline \end{aligned}$ | 苞 |  | $\begin{aligned} & \text { 荡 } \\ & \text { 品 } \end{aligned}$ | 星 |
| ST．ROLLOX， | ${ }^{23}$ |  |  | I2 | 55 | 127 | 69 | ${ }^{6}$ | 145 | 63 | 41 | $10 \pm$ | 34 | 35 | 72 | ${ }^{97}$ | 66 | 163 | 76 | $6 \pm$ | 140 | 34 | 44 | 78 | 21 | 26 | 47 | 11 | 18 | 29 |  | ．．． | ．．． | 500 | 445 | 945 | 118 | 185 | 48 |
| （ Without Institations， | is |  |  | 323 | 298 | 621 | 313 | 305 | 618 | 223 | 228 | 451 | 174： | ； 225 | 399 | 430 | 417 | S 47 | 339 | 274 | 613 | 194 | 184 | 378 | 100 | 102 | 202 | 54 | 79 | 133 |  | ．． |  | 2，225 | 2，219 | 4，444 | 607 | 864 | 123 |
| DEESTISTOTS Sarnhill Poorhoose，．．． | 12 |  |  | ${ }^{27}$ | 25 | 52 | 42 | 40 | s2 | 26 | 17 | 43 | 9 | 12 | 21 | 4 | 51 | 95 | 31 | ${ }^{63}$ | 94 | 50 | 80 | 130 | 55 | 87 | 142 | 241 | 276 | 517 | ．．． | ．．． | ． | 537 | 657 | 1，194 | 324 |  | ．．． |
| Mosshank School， |  |  |  | 1 | 1 |  | 48 | 2 | 50 | 290 |  | 290 | 15 | 1 | 16 | 2 | ＋ |  | 1 | 3 | 4 | 1 | 1 | 2 | ．．． | ．．． | ．．． |  | 1 | 1 | ．．． | ．．． | ．．． | 358 | 13 | 371 | ．．． |  | ．．． |
| HCTCHESOSTOWS， | 129 | 123 | 245 | $46 \bar{\square}$ | 437 | 902 | 443 | 436 | 579 | 311 | 309 | 620 | 280 | 210 | 490 | 524 | 509 | 1，033 | 45 | 429 | 574 | 249 | 244 | 493 | 104 | 126 | 230 | 88 | 96 | 184 | ．．． | ．．． |  | 3，031 | 2，919 | 5，950 | 432 | 1，229 | 274 |
| Gorbals， | 99 | s1 | 150 | 333 | 299 | 632 | 313 | 327 | ${ }^{6} 10$ | 262 | 269 | 531 | 206 | 275 | 481 | 410 | 458 | S68 | 336 | 397 | 733 | 225 | 235 | 460 | 126 | 136 | 262 | 82 | 141 | 223 | ．．． |  |  | 2，392 | 2，618 | 5，010 | 152 | 1，023 | 162 |
| tradestoi， | St | 83 | 167 | 301 | 29.2 | 593 | 333 | 331 | 664 | 247 | 256 | 503 | 203 | 421 | $62+$ | 341 | $66 \overline{3}$ | 1，006 | 405 | 427 | 832 | 256 | 255 | 541 | 102 | 159 | 261 | 85 | 175 | 260 | ．．． | ．．． |  | 2，357 | 3，09 | 5，451 | 180 | 1，027 | 183 |
| İNITIG PARK，．．． | $27^{2}$ | 237 | 509 | 913 | 961 | 1，874 | 967 | 1，019 | 1，986 | 813 | 531 | 1，664 | 780 | sso | 1，660 | 1，349 | 1，714 | 3，063 | 990 | 1，142 | 2，132 | 735 | 739 | 1，474 | 396 | 446 | 842 | 239 | 309 | 548 | 3 | 1 | 4 | 7，457 | 8，299 | 15，756 | 1，554 | 3，061 | 484 |
| Torse（withoat Institutions）， | 6 ¢0 | 645 | 1，323 | 2，407 | 2，3£2 | 4，749 | 2，438 | 2，494 | 4，932 | 1，919 | 1，954 | 3，873 | 1，677 | 2，0才9 | 3，726 | 3，151 | 3，829 | 6，930 | 2，591 | 2，733 | 5，324 | 1，693 | 1，731 | 3，424 | 849 | 995 | 1，844 | 559 | 818 | 1，377 | 3 | 1 | 4 | 17，962 | 19，594 | 37，556 | 3，043 | 7，389 | 1，274 |
| Lsetritioses | 12 | 6 | 18 | 28 | 26 | 54 | 90 | 12 | 132 | 316 | 17 | 333 | 24 | 13 | 37 | 46 | 55 | 101 | 32 | 66 | 98 | 51 | S1 | 132 | 55 | 87 | 142 | 241 | 277 | 515 | ．．． | ．．． | ．．． | 895 | 670 | 1，565 | 324 |  | ．．． |
| RALD TOTAL， | 687 | 654 | 1，341 | 2，435 | 2，368 | 4，503 | 2，52S | 2，536 | 5，064 | 2，235 | 1，971 | 4，206 | 1，701 | 2，062 | 3，763 | 3，197 | 3，884 | 7，051 | 2，623 | 2，799 | 5，422 | 1，744 | 1，812 | 3，556 | 904 | 1，082 | 1，986 | 800 | 1，095 | 1，895 | 3 | 1 | 4 | 18，857 | 20，264 | 39，121 | 3，367 | 7，389 | 1，27 |

TABLE V．－CENSUS，1881—GLASGOW：PROPOR＇IION PER CENT．OF THE TOTAL POPULATION（EXCLUSIVE OF INMATES OF INSIITUTIONS），AT VARIOUS PERIODS OF LIFE，IN＂LANDWARD＂PORTIONS OF REGISTRATION DISTRICTS．

| LANDWARD DISTRICTS． |  | $\square_{1}^{+1}$ | $0_{0}^{0}$ | $\square_{-}^{+}$ | $\overbrace{-}^{0}$ | － | ¢0． | $\stackrel{+}{+}$ | $0_{0}^{00}$ | \％ |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| ST．ROLLOX， | $4 \cdot 232$ | 13＊439 | 15.343 | 11.005 | 7619 | 17.248 | 14.814 | 8.253 | 4.973 | $3 \cdot 068$ |
| Dennistoun， | $\pm .095$ | 13.973 | 13.904 | $10 \cdot 148$ | 8．978 | 19.059 | 13.793 | 8.505 | 4.545 | 2：992 |
| HUTCHESONTOWN， | $4 \cdot 117$ | 15.159 | 14.773 | 10.420 | 8 235 | 17.361 | 14.688 | 8－285 | $3 \cdot 865$ | 3.092 |
| GORBALS， | $3 \cdot 592$ | 12.614 | 12.774 | 10．598 | $9 \cdot 600$ | 17.325 | 14.630 | $9 \cdot 181$ | $5 \cdot 229$ | 4.451 |
| TRADESTON， | 3.063 | 10.878 | 12．181 | $9 \cdot 227$ | 11.447 | 18.455 | 15.263 | $9 \cdot 924$ | 4.788 | $4 \cdot 769$ |
| KINNING PARK， | 3230 | 11.893 | 12．604 | 10.561 | $10 \cdot 535$ | 19.440 | 13．531 | $9 \cdot 355$ | $5 \cdot 343$ | $3 \cdot 478$ |


[^0]:    * The Registrar-General gives 511,532 in his preliminary Census Tables. I retain the total given by the tabulation of the enumeration books for the statistieal purposes of the department earried ont innder my own supervision. Until every entry hias been serutinised and verified, sueh triffing diserepaneies will exist between summations from different sourees, but they are of no praetieal moment.

[^1]:    * Census of England and Wales, 1881. Preliminary Report, p. viii. + Census of Scotland, 18S1. Preliminary Tables, p. iv.
    $\ddagger$ Census of England and Wales, 1881. Preliminary Report, p. iii.

[^2]:    * Census of Eugland and Wales, 1881. Prelimiuary Report, 3 , iii.

[^3]:    * It must be carefully noted that the population here called Burghal in 1861 and 1871 is not the real Burghal population of those years, but the population on the area whiel is Eurghal in 1S8:.

[^4]:    *Registration area extended and whole Municipality included, 1st Jan., 1875.

