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DEMOGRAPHIC STATISTICS of the UNITED KINGDOM: *their want of*
CORRELATION and other DEFECTS. By EDWIN CANNAN, M.A.

[Read before the Royal Statistical Society, 15th February, 1898.
C. S. LOCH, Esq., Vice-President, in the Chair.]

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It is many years since I first became interested in the subject of this paper, but the paper itself has been written in little more than a week in order to supply the gap caused by Mr. Loch's unfortunate illness, so that I hope any want of correlation or other defects which it may exhibit will be treated with some indulgence.

I. Decennially our census enumerates the population, and annually the Registrar-General tells us how many persons are added to it by birth, and how many subtracted by death, while the Board of Trade tells us how many were added by immigration and subtracted by emigration. At any point of time between two censuses then we ought to be able by the simple process of consulting a tolerable almanack, to say nothing of the last number of the *Journal of the Royal Statistical Society*, to find an estimate of the existing population which would be accurate within a few thousands. No such estimate is published except as regards Ireland. In Ireland there is a special machinery for collecting emigration returns, and from these and the registration of births and deaths the Registrar-General for Ireland constructs an estimate which is very near the truth, and wrong or right, is founded on the best available data. In Great Britain, however, or rather in England and in Scotland, for the two countries have distinct machinery, the Registrar-General's estimate of population is not an estimate at all. An estimate of receipts or expenditure is the number of pounds we expect to receive or expend; an estimate of population at a future date is the number of persons

we expect to be in a certain area at that date; an estimate of population in the present is the number we believe to be in the area at the present time. The so-called "estimates" of population in England and Scotland are not what anyone believes the population to be. They are merely the population which would have existed supposing the previous intercensal rate of increase had been maintained. To the cynic who delights in the follies of his fellow creatures, if (which is impossible) he were a statistician, it would be amusing to see the confiding way in which the newspaper press annually announces that the Registrar-General estimates the population of England and Wales at such and such a figure, as if it was recent information, when the fact is that the so-called "estimates" for every year up to 1901 are to be found in the last Census Report, which was published in 1893.¹ The Registrar-General would publish exactly the same figures if the Board of Trade recorded a net emigration of six millions, or if he himself enumerated the deaths of ten millions in a year. Down to and including his Report for 1893, published in January, 1895, the English Registrar-General used to assert annually that the method was "not likely to lead to serious error," although the "estimate" was no less than 701,843, or nearly $2\frac{1}{2}$ per cent., in excess when the census of 1891 was taken. In subsequent reports he has merely stated that the method is followed "in the absence of precise information" regarding emigration and immigration. Now this insufficiently precise information, in conjunction with the births and deaths figures, enabled Dr. Longstaff to estimate the population within 10,251 at the time when the Registrar-General's assumed figure was 701,843 in error. (See *Economic Journal*, vol. i, p. 382, ff.)

Even supposing the Board of Trade figures were absolutely worthless, as the Registrar-General assumes, his method could not be justified. In the first place, the absence of precise immigration and emigration statistics furnishes no ground for entire neglect of the birth and death statistics. If there were no migration figures, it might be necessary to assume that migration was the same as in the previous intercensal period, but the absence of migration figures cannot possibly justify the assumption that the excess of births over deaths has been the same, when, as a matter of fact, we know it has not been the same. In the second place, there is no particular sanctity about the previous intercensal period. If we find that the increase in one decade is 10 per cent., in the next 5, and in the next $2\frac{1}{2}$, we are more justified in expecting an increase of about $1\frac{1}{4}$ than another increase of $2\frac{1}{2}$ per cent. The

¹ Subject to the modification mentioned on p. 56.

assumption of a regular "geometrical increase," as Malthus used to call it, is of course absurd; that can only be a very short-lived phenomenon, and even an "arithmetical increase" can only be temporary. The error of assuming the same percentage increase can be most clearly seen where it is applied to an urban area. It is obviously wrong, for instance, to assume that the present County of London will continue long to increase at 17·2 per cent. in the decade, as it did between 1871 and 1881, or even at 10·3 per cent. as it did between 1881 and 1891. The area is getting filled up, and not only the rate of increase, but the actual absolute increase, will soon become less and less till it disappears. The same thing of course must sooner or later be true of every country and of the whole world.

Obviously erroneous as the method of estimating present and future populations by the rate of increase in the previous intercensal period is, it is not so grotesque as the absolutely analogous plan of estimating past populations on the assumption that the rate of increase was uniform throughout the intercensal period. The Reports of the Registrar-General ask us to assume that the annual addition to the population increases in an absolutely regular manner for the nine years between the middle of the first year of each decade and the middle of the tenth, and then jumps wildly about before settling down to a new series of regularly increasing additions, *e.g.*:—

Assumed Additions to the Population of England and Wales.

1871-72	307,901	} Regular series on the basis of rate of increase between April, 1871, and April, 1881
'72-73	312,061	
'73-74	316,278	
'74-75	320,551	
'75-76	324,882	
'76-77	329,272	
'77-78	333,720	
'78-79	338,230	
'79-80	342,799	
'80-81	331,854	} Three quarters on old basis, one quarter on new
'81-82	288,800	
'82-83	292,007	} Regular series on the basis of rate of increase between April, 1881, and April, 1891
'83-84	295,243	
'84-85	298,514	
'85-86	301,826	
'86-87	305,174	
'87-88	308,552	
'88-89	311,981	
'89-90	315,434	

Moreover they ask us to believe that the later years of a

decade are necessarily more favourable to the growth of population than the earlier.²

Recently a slight modification has been introduced into the method of "estimation," which makes it even more unsatisfactory than before. This is the recognition of the County of London Census of 1896, and the calculation of the County of London population on the assumption that the County continues to grow at the same rate as in 1891-96, and only the population of the rest of the country at the same rate as in 1881-91. To this modification there are two objections:—

First, the London Census of 1896 is not properly comparable with the previous censuses. Far from regarding the institution of this intermediate census with approval, I regard it as a most unfortunate invention. It has introduced not only unusual inaccuracy, but also corruption, into our demographical statistics.

If two censuses be taken, one of which is a mere enumeration of males and females with their relationship to the householder, while in the other a number of questions are asked about birth-places, ages, conjugal conditions, occupations, number of rooms occupied, and bodily infirmities, it is perfectly certain that the enumeration will be more complete in the simple census than in the complex one. If two censuses are taken, one of which applies to the whole country, and another only to a part of it, then, *ceteris paribus*, it is perfectly certain that the partial census will enumerate a larger number of persons in the part than the general census will enumerate in the part. This happens because in the partial census more "doubtfuls" will be reckoned as belonging to the part than in the general census. In the general census, the "doubtful" is just as likely to be enumerated in one of the two places between which he is moving as in the other, and is not likely to be reckoned twice, whereas in the partial census he is more likely to be reckoned in the part.

These are general rules which might occur to anyone unacquainted with the special circumstances of the London census, and which would lead him to suppose the figures of that census would be somewhat larger than they would have been if obtained by the usual method of the general census. The special circumstances of the London census aggravated the effect. The directions in the householder's schedule as to who was to be enumerated

² The increase between the censuses of 1871 and 1881 was 3,262,000, while between the censuses of 1881 and 1891 it was only 3,028,000. The Registrar-General's assumption distributes these increases between the quinquennia thus:—

April 1871-76.....	1,576,000
„ '76-81.....	1,686,000
„ '81-86.....	1,473,000
„ '86-91.....	1,555,000

were not the same as in the general census. The difference in the heading of the schedules, though objectionable, because unnecessary, does not seem of importance. In the censuses of 1881 and 1891 the schedule is headed "LIST of the MEMBERS "of this FAMILY, of VISITORS, of BOARDERS, and of "SERVANTS³ who SLEPT or ABODE in this Dwelling on "the NIGHT of SUNDAY, APRIL -th, 18—." The schedule of the London census of 1896 is headed "LIST OF ALL "PERSONS WHO PASSED THE NIGHT OF SUNDAY, "29TH MARCH, 1896, IN THIS HOUSE OR TENEMENT." But the instructions are radically different. The schedule used in the census of 1891 says:—

*No Persons ABSENT on the Night of Sunday,
April 5th, to be entered here; EXCEPT those who
may be TRAVELLING or out at WORK during that
night (and are not elsewhere returned), and who
RETURN HOME ON MONDAY, APRIL 6TH.*⁴

I should be sorry to have to maintain that this instruction is free from objection. The use of the verb "return" in two different senses, one of which is not a popular sense, seems to me likely to confuse the uninstructed mind. "Travelling," too, is ambiguous. The framers of the schedule of course mean to include only persons in vehicles, or walking, or riding, or sitting in a railway station; but many people consider themselves to be travelling when they are away from home and moving about from place to place in the daytime. But the "are not elsewhere "returned" (provided the word "returned" be understood) is a great safeguard in the general census against the improper inclusion of travellers in the wide sense. A person who, after sleeping at Birmingham, has been enumerated there, is not likely to allow himself to be counted over again at Oxford when he arrives there to breakfast. As the London intermediate census did not possess this safeguard, those in charge of it ought to have been particularly careful to make it absolutely clear that no persons who passed the night neither in London nor actually on the road or railway to London were to be included. Instead of being particularly careful, they threw precaution to the winds by printing these instructions:—

(1.) Every person who passed the night of
Sunday, 29th March, in this house or tene-
ment must be included in this Schedule.

³ The schedules of 1861 and 1871 do not mention "boarders," but the schedule for 1871 asks for "all other persons."

⁴ The schedules of 1861, 1871, and 1881 contain the same instructions omitting the words, "and are not elsewhere returned."

(2.) Every person usually resident in this house or tenement, but who was travelling or out at work on the night of Sunday, 29th March, and has returned on the morning of Monday, 30th March, must be included in this Schedule, unless he has already been returned in another Schedule elsewhere; in the latter case he **must not** be included herein.

Now of course I admit that no one here, after reading the second instruction twice, would fail to see that it is intended to convey exactly the same meaning as the instruction of the 1891 census. But even to the trained eye of the member of the Statistical Society the impression which the instruction gives at the first glance is certainly very different, and I think the excluding phrase is so quietly and delicately introduced by the "but who," that three men out of four in that class from whom the coroner collects his jury must have quite honestly supposed that usual residents were to be counted if they returned on Monday morning.

The enumerators were, we must suppose, better informed, and to some little extent might, if they had chosen, have prevented the consequences of this error on the part of the householders. But what interest had they to do so? So far from having any interest in reducing the number of persons enumerated, their interest was all on the side of increasing it. The schedule itself purports to be "prepared in pursuance of section 3 of the London "Equalisation of Rates Act, 1894," but I am not inclined to say that many London householders knew what that meant. I do not believe in the London householder's knowledge of anything municipal: it has been made too difficult for the ordinary intelligence. But the enumerators knew. They were, as usual, persons ordinarily in the employment of various local authorities. As such they were acquainted with the fact that the greater the population they could manage to enumerate the greater would be the local share in the distribution of the sixpenny rate, and they knew too that the greater the local share in the distribution of the sixpenny rate, the greater would be the funds at the command of their employers, and consequently the greater the prospect of lower rates and increased comfort for officials.⁵

How large the addition to the proper population thus made by error and corruption may have been, I do not profess to be able to form any really approximate estimate. In comparison with the whole 4,400,000 of population, it would doubtless be a small percentage, but in comparison with the alleged increase of 200,000,

⁵ See *Discussion*, pp. 74 and 82.

which was greater than half the increase in the previous ten years, I have no doubt it would be very considerable.

Secondly, even if the London census of 1896 had been trustworthy instead of worthless for the purpose of showing the increase of the population of the County of London between 1891 and 1896, it would not have been correct to use it in the way the Registrar-General uses it in his report for 1895. If there were no net migration between the two divisions into which he has cut England and Wales, there might be something to be said for his plan. But as the rate of increase inside the small area governed by the County Council falls off owing to the ground being more and more completely built over, the rate of increase outside that area naturally tends to become more rapid. In the decade 1851-60 registration London (which would be the same as the County if the Registrar-General would only include Penge) took in 188,000 persons from the rest of the world, most of whom came from England outside London. In the next two decades the numbers swallowed sank to 119,000 and 108,000. In the decade 1881-90, instead of an intake there was an output of 118,000. In some future decade, when the area is quite full, the output may easily amount to half a million. The overflow from the County of London is an addition to the sources of population for the rest of the country, and consequently it is even less correct to assume a constant rate of increase for the country outside the County of London than it is to assume a constant rate for the whole country. So far I daresay the various errors in the method very nearly balance each other, but I have always understood that a cashier who makes mistakes which balance each other is regarded with suspicion by his employer. Where errors are unavoidable we may comfort ourselves that they often balance each other, but where they are avoidable it is better to avoid them.

The estimate of population for the United Kingdom furnished by the Registrar-General for England is an extraordinary conglomeration incapable of defence on any principle. It is a total made up by adding together the assumed figure for London, the assumed figure for the rest of England and Wales, the assumed figure for Scotland, and the genuine estimate for Ireland. Now if the Registrar-General for England believes the assumed constant-rate method to be the best, why does he not apply it to Ireland, and indeed to all those other European countries which produce genuine estimates? A junior clerk with a Brunsviga machine could do the necessary arithmetic in a few hours.

We can only suppose that the Registrar-General regards the Board of Trade's immigration and emigration statistics as less trustworthy than those of other countries. Yet the Census Report

which emanated from his office in 1893 attributed to those statistics a very high degree of accuracy. It is true that they are collected by a somewhat precarious method. The great majority of persons entering and leaving the United Kingdom are of course the passengers from and to Europe. The number of passengers arriving from Europe and the non-European coast of the Mediterranean in 1896 was 518,869, and 479,913 passengers left the United Kingdom for those parts of the world, while the number of all other passengers was only 241,952 outwards and 159,913 inwards. Now the Board of Trade conducts this census of almost 1,000,000 European and Mediterranean passengers without any aid from legislation whatever. The figures are obtained purely in consequence of the existence of friendly relations between the Board on the one hand, and the railways, the shipping companies, and the Belgian Government (which conducts the Dover and Ostend service) on the other. It is creditable to human nature that the returns have been readily supplied "in almost all cases," but it is not satisfactory that the whole of our knowledge of emigration and immigration is liable to be wrecked by a dispute between the Board of Trade and a railway about the hours of a signalman, or by some friction with the Belgian Government about shipping regulations. But meantime the returns are there, and, so far as I know, their accuracy, as regards the mere number of immigrants and emigrants, has never been seriously questioned by anyone. If they are not accurate, let them be improved. When we maintain an organisation to prevent the surreptitious arrival of a pound of tobacco, it cannot be very difficult or expensive to count immigrants and emigrants.

In default of the Registrar-General, we might reasonably expect the Board of Trade to summarise the movement of population in its annual report on the migration. It might without much trouble or expense obtain the birth and death figures, and make an estimate for the United Kingdom, if not for its three great constituent parts. But it does not. Nay, the only statement the editor of the returns makes on the subject assumes that there is no such thing as death, at any rate for immigrant aliens. If he finds that there has been a net immigration of foreigners to the number of, say, 10,000, the editor invariably proceeds to remark that the number or population of foreigners in the United Kingdom has been increased by 10,000, as if the foreigner received immortality from the health-giving air of our islands.

Not content with ignoring the registration figures, the Board of Trade also ignores the census. After the publication of a census, in which every Bulgarian in England occupied as much space as 1,000 natives, it was natural to expect that the Board of

Trade would compare the census account of the foreigners in England with its own account of foreign immigration, and show how far the two agreed, but I think this has never been done. This brings us naturally to the second head of our inquiry.

II. While the Board of Trade statistics are probably accurate enough with regard to the number, starting places, and destinations of immigrants and emigrants, they must not be much trusted as regards nationalities. They divide all passengers from and to non-European and non-Mediterranean ports into English, Scotch, Irish, and foreign. For many years I wondered how this remarkable feat was performed. Were the Australian-born children of a Scotch emigrant Scotch? Were Cape Dutchmen, French Canadians, and West Indian negroes foreigners, although British subjects? And, if not, were they English, Scotch, or Irish? When I went to Canada with the British Association last year I hoped to solve these questions. When the ship's officer came to ask me, for the information of the Board of Trade, whether I was married or single, what my occupation was, and whether I was English, Scotch, Irish, or foreign, I would ask him in which of the four columns he entered the Canadians. He never came! Neither on the outward nor the homeward voyage were we asked any of these questions, and I returned home sorrowful. But this is a free country, in which anyone who can afford pen and ink is at liberty to interrogate a public department, however meritorious, to the best of his ability. So I wrote to the Board of Trade, and said I presumed they were now in possession of all this information about me and my fellow passengers, and I should be much obliged if they would state how they obtained it. At the same time I asked, how subjects of Her Majesty belonging to colonies and dependencies were classified as English, Scotch, Irish or foreign?

After long and patient investigation the Board sent me a very courteous letter, which did not answer my question as to how the information about our occupations, conjugal condition, and nationalities was obtained. Instead of doing so it said that I was returned both in the outward and the homeward voyage as an unmarried Englishman. It left me to form my own conclusion as to the way in which the information had been obtained, and that conclusion is, of course, that the purser had described me as unmarried because I was not accompanied by a lady purporting to be my wife, and had described me as English because he had found on my ticket that my address was Oxford, while probably he had left my occupation blank because he did not know it, and thought it too much trouble to inquire. Now it unfortunately happens that I am unmarried, and that though not a native of England I am a British subject domiciled in England, and therefore properly

described as English, while as to what is my more important occupation, I always feel considerable doubt myself. So in my particular case the rough and ready method had answered quite well. But you can easily see that the number of unmarried Englishmen in these statistics will be a good deal larger than in real life. The answer to the other question as to which category colonial persons were to come under, I will give in the Board's own words :—

“As regards subjects of Her Majesty other than those born in the United Kingdom, there can be no doubt that the greater number of such passengers who land here come as visitors, and so long as they are described in the same way in the inward and outward lists, the balance of the inward and outward movements, which is the important element of the emigration returns, is not disturbed. It is understood that colonists generally are included in the passenger lists according to the nationality of their ancestors, but some are included amongst the ‘Not distinguished.’ This is of course not altogether satisfactory, but legislation would be necessary to effect any change in the system.”

The difficulty I feel about this explanation is that there seem never to be any “not distinguished” passengers from Canada or the Cape, so that the French Canadian and the Cape Dutchman must have for the nonce English, Scotch, or Irish ancestors!

As a humble elector I really venture to think that the time of Parliament will often be less usefully spent in future sessions than it would be in giving the Board of Trade proper tools to work with in the collection of these statistics. At present the Board collects statistics as to nationality under three different laws :—

First there is the Alien Act, 6 and 7 Will. IV, cap. 11, which applies properly to all aliens arriving from foreign parts, but which is treated as if the executive in this country had full dispensing power. Under this the Board attempts to secure an account of all such foreign European immigrants as are supposed to be not merely temporary visitors. At Dover, Folkestone, Harwich, Newhaven, and Southampton the masters of ships arriving from European and Mediterranean ports are required to furnish the customs officers with lists specifying the name, rank, occupation, and description of every alien who is a deck passenger or is proceeding from the port of arrival by railway as a third class passenger. At twenty-one other ports, practically all the ports at which any appreciable number of European immigrants can be supposed to arrive, the masters of such ships are required to furnish similar lists of all alien passengers, whether they are deck or third class railway passengers or not. In addition to the

particulars required by the Act, the Board of Trade appears to be able also to get a statement as to whether the passenger holds a through ticket to places out of the United Kingdom; but whether a through ticket includes a return ticket I have not discovered.

Secondly, there is sec. 336 of the Merchant Shipping Act, 1894. This applies to every ship bringing steerage passengers from non-European and non-Mediterranean ports, and provides that the master of every such ship must provide a correct list of the name, age, calling, and port of embarkation of every steerage passenger.

Thirdly, there is sec. 311 of the same Act, which requires the master of every ship carrying steerage passengers to non-European and non-Mediterranean ports to fill up a most elaborate schedule of thirty-seven columns, giving the name, sex, age (infants under 1 year, children 1—12, and adults), occupation, and conjugal condition of every passenger, whether cabin or steerage, and showing whether he is English, Scotch, Irish, or foreign.

It is to be observed firstly that both these sections apply only to ships carrying steerage passengers; secondly, that though the emigration section requires a return of all passengers from such ships, the immigration section only requires a return of steerage passengers; and thirdly, that while the emigration section requires an impossibility in the division of nationalities, the immigration section demands no information about nationalities. But the Board of Trade has hitherto apparently been able to persuade the officers of all the ocean-going ships to make returns as if the requirements of the emigration section were applicable to all ships in all classes of passengers, both inward and outward. That the returns thus made have not always been made as carefully as possible is obvious from my own experience, and this is exactly what might have been expected. It is clear that the fact that a portion of the returns is furnished voluntarily must have the effect of preventing the Board of Trade from putting anything but the very gentlest pressure upon a ship's officer who makes imaginary or careless returns. How can the Board threaten penalties for an inaccurate return as to an emigrant cabin passenger, when they know that the officer in default can do what he pleases about the immigrant cabin passenger?

Further, it must be noticed that while the statistics* collected under the Alien Act divide the foreigners according to their various nationalities, those collected under the Merchant Shipping Act simply group all foreigners together. Consequently when the net immigration of foreigners is stated at a certain figure, the emigration figures give no assistance in showing whether it is composed of Americans or Russians.

Even therefore when we realise the full meaning of such a confession when coming from a government department, I think we need not hesitate to agree with the Board of Trade that the condition of things "is, of course, not altogether satisfactory." Before considering how to amend it, we must look at the census returns. Here we find in the English householders' schedule the following instruction:—

Opposite the Names of those born in ENGLAND
and WALES, write the COUNTY, and TOWN
or PARISH.

If born in SCOTLAND, IRELAND, the BRITISH
COLONIES or the EAST INDIES, state the
Country or Colony,

If BORN IN FOREIGN PARTS, write the
particular *State or Country*, and if also a
BRITISH SUBJECT, add "*British Subject*," or
"*Naturalized British Subject*,"
as the case may be.

The ordinary householder's mind is probably confused by the not very perspicuous phrase, "British subject or naturalised "British subject, as the case may be." He asks his wife, "Is that "the same as *natural-born*, now?" And in any case it is more trouble to write "British subject" than to omit it, and so it is supposed a considerable number of the natives of foreign countries who are really British subjects are not so returned. But down to and including the census of 1881, the census authority took upon itself, without giving any warning to the public, to alter the returns by adding to the British subjects all foreign born persons with British looking names. What a difference this outrageous and I hope unexampled proceeding made, is indicated roughly by the fact that the published number of British subjects fell from 56,373 in 1881 to 34,895 in 1891, though the real number probably did not diminish. Perhaps greater accuracy might be obtained if entry of the nationality was required after the name of every country, as, *e.g.*, "France, French subject;" "Madeira, Portuguese "subject," and so on, as that would make the alien as troublesome to the householder as the British subject.

On the whole, if we look at the census and the immigration and emigration figures together, it would appear desirable to substitute country of birth for nationality in immigration and emigration statistics. Even where independent States only are concerned, the nationality of a person who is in the habit of crossing the ocean is surrounded by more or less doubt, and where the same language is spoken it is certainly not always obvious to the ordinary ship's purser. If the purser is to inquire, there seems greater likelihood

of his getting a correct answer to the question, "what country "were you born in?" than to, "what State are you a subject of." Where different parts of the same empire are concerned, it is in the highest degree ridiculous to ask for nationality statistics from persons travelling from one part to another. Whether a British subject is Canadian or English is purely a matter of domicile, and when he is moving from one to the other country, is just the time when his domicile is likely to be most doubtful. How is a ship's purser to know whether Pat O'Farrel and Molly M'Neill have the *animus revertendi* or the *animus manendi*? As a matter of fact, if we are to judge from the Board of Trade's statement about "ancestry," the ordinary purser considers English to mean born in England or descended from persons born in England, which of course is absurd.

If the Board of Trade obtained, under proper legal sanction, the country or colony of birth of all the trans-oceanic passengers, and of all the European passengers with whom it is supposed to be worth while to deal; and if the census returns would give as much attention to the 111,627 persons born in British colonies and dependencies as they did to the 11 Servians who happened to be in England in April, 1891, our knowledge of migration into and out of the country would be both greater and more accurate than it is now. The attempt to collect useless particulars of occupation and condition as to marriage from trans-oceanic passengers ought to be abandoned, and the "naturalised British subject" ought no longer to appear in the census schedule to confuse the mind of the householder.

III. We now come to the third and last inquiry—that relating to internal migration. Here I am afraid I must confine myself to England and Wales. It is not given to any man to carry three kingdoms in his head. Like the Board of Trade statistics of external immigration and emigration, the statistics of internal migration are "not altogether satisfactory." The simplest and most obvious requirement for the purpose of acquiring information about internal migration is that the area used in recording births and deaths should be the same as that used in enumerating the birth-places of inhabitants and the habitation of natives. By comparing the difference between the births and deaths with the increase or decrease of population, we get the net migration from or to this area; and by examining the statistics of the birth-places of its inhabitants, and the distribution over the whole country of its natives, we get a view of the volume of migration in both directions. As to what the area should be, we can only say at this stage of the inquiry that it coincides with the area which ought to be the most important unit for local government pur-

poses affecting public works and the administration of the laws which promote the health and wealth of the people.

But our statistics as to births and deaths do not apply to the same area as our statistics of birth-places, and neither of them ordinarily apply to any important area of local government. The returns of the last two censuses give the distribution over England of the natives of each of the old counties and the new County of London, and give the birth-places of the inhabitants of each of these counties and of each urban sanitary district with more than 50,000 inhabitants. But the Reports of the Registrar-General, and the decennial summary of births and deaths in the census, use quite different areas, namely, the poor law unions and the groups of unions which the Registrar-Generals have christened "registration counties." [I use the term union rather than the more technically correct "registration district," because everyone knows what a union is; and I have some reason to believe, though I have not been able to discover any government or other publication which gives the constitution of unions, that 621 of the registration districts coincide with single unions, and the other 12 with two or more unions.] Urban sanitary districts and the County of London are important areas of local government, but the old counties are not now local government areas, except in a small proportion of cases; the poor law unions are only local government areas for a few and not very distinguished purposes; and the "registration counties" are not local government areas at all, and, so far as I know, have never been recognised by the legislature in any way.

If it were possible to start afresh, I suppose no one would now dream of selecting the poor law union as the area for the registration of births and deaths. That it is the area has, like everything else, an historical explanation, which must not be mistaken for a justification.

When the reform of the old poor law was in contemplation, the most pressing need appeared to be to find or, if necessary, to create areas which would be big enough to support an efficient workhouse without compelling either the paupers or the guardians to travel too far or to an inconvenient place. For this purpose the parishes were too small, except in London and a few of the other great towns. The counties on the other hand were too large. The hundreds were quite useless owing to their want of compactness: they were often not only straggling, but made up of numerous detached portions. The boroughs were not to be thought of, since many of the most important towns were not boroughs, and the more flourishing towns which were boroughs had outgrown their municipal limits and were mostly governed by corrupt oligarchies. It is easy to say now that the proper way to

proceed would have been to create county divisions something like the present parliamentary divisions, but with greater regard to area and less to population. But at that time the doctrine of parish responsibility for the poor was more powerful than it is now, and it was determined to proceed by federating parishes. Parliament left it to the Commissioners' unfettered discretion to determine what parishes should be federated, and I do not know that they have left any record of the principles which guided them. There is a defence of their method in the Census Report for 1851 (p. lxxix), which doubtless gives the traditional view:—

“For the hundreds, districts have been substituted; and the “groups of complete districts—called for the sake of distinction “‘Registration Counties’—differ little in extent or area from the “ancient counties, with which, wherever it was practicable, their “boundaries are made conterminous. The cause of the discrepancy “between the ‘registration counties’ and the other counties arises “from the circumstance that, in many cases, the boundaries of the “old counties were rivers; on which subsequently at fords and “bridges important towns arose—the markets and centres of “meeting for the people of all the surrounding parishes. These “towns have been made the centres of the new districts, as at “them it is most convenient for the guardians to meet and the “officers to reside. Thus Wallingford in Berkshire is the natural “centre of the district, which is nearly equally divided by the “Thames; and the Thames is here, as it is in a lower part of its “course, the county boundary separating Oxfordshire from Berk- “shire. The people of the parishes of Bensington, Ewelme, “Crowmarsh, North Stoke, Berrick Prior, Warborough, and “Dorchester, on the north side of the river in Oxfordshire, meet “at Wallingford market, and are in many ways intimately “associated with the people on the south side of the river in “Berkshire; hence it was quite justifiable to unite the parishes so “related on both sides of the Thames in the Wallingford Union— “the Wallingford District.”

Whatever the principles of the Commissioners may have been, their practice was probably considerably modified by the pressure of local interests. It is worth noticing that the Census Report just quoted carefully abstains from mentioning South Stoke as one of the parishes in Oxfordshire which it was right to put in the Wallingford Union. Anyone going from South Stoke to Wallingford goes through Ipsden and Checkendon, which are in the Henley Union, and yet the Commissioners included it in the Wallingford Union.

The new poor law authorities when brought into existence became at once by far the most complete governmental organisa-

tion in the country, so that it was only to be expected that they should be made use of when the central government desired to introduce a proper system of registration of births and deaths. Accordingly in 1836 we find the State requiring every board of guardians to appoint a superintendent registrar and registrars, and to divide its district into convenient divisions for facilitating registration. Now when these divisions, which were then called registration districts, but are now called sub-districts (the union having changed its name from "superintendent registrar's district" to "registration district") were mapped out, they might conceivably have been arranged so that every ancient county should consist of a group of them, though it did not coincide with a group of whole unions or superintendent registrar's districts, but this does not seem to have been even thought of. The first Registrar-General addressed a circular letter to the guardians, in which he said :—

"With respect to boundaries it is desirable, both with the view
 "to facilitate the knowledge of the limits of the new districts and
 "to avoid a multiplicity and intermixture of divisions, that the
 "boundaries of registrars' districts shall (when it is practicable,
 "consistently with the attainment of other objects) be identical
 "with ancient recognised boundaries such as township or parish,
 "and shall not unnecessarily intersect them; but it is not desired
 "that the limits of the district should be much extended in order
 "to make it coincident with any ancient boundary. Facility of
 "communication is of still greater importance than adherence to
 "ancient boundaries, and compactness and connexion of territory
 "must not be sacrificed for the sake of such adherence."

The desirability of not creating unnecessarily overlapping areas is here recognised somewhat grudgingly, and the county boundary is not considered worth mentioning as an example. The consequence is that the sub-districts overlap county boundaries just as much as the unions themselves. Not a single one of the Oxfordshire parts of unions which chiefly belong to other counties is a complete sub-district; nor is a single one of the parts of other counties which are included in unions chiefly belonging to Oxfordshire a complete sub-district.

But how the districts and sub-districts are arranged is merely a matter of administration: it need not in the least affect the statistics published. There was nothing to prevent the Registrar-General from arranging the births and deaths according to ancient counties, though they were collected by unions. It is merely a matter of easy book-keeping. But it has never been done. The groups of unions, which soon became known as registration counties, made their appearance in the very first Annual Report of the Registrar-General in 1839. The census return of 1841 adhered to the old

divisions of counties, hundreds, and parishes, but the much more elaborate census of 1851 adopted the whole familiar arrangement by registration districts, registration counties, and registration divisions, and that more thoroughly than it has ever been adopted since. The old counties, the hundreds and boroughs, were dealt with in a perfunctory manner in forty pages of the preliminary tables, and the whole of the details are arranged under the "registration" counties and divisions.

The people however had not been asked, and if they had been asked, would have been both unwilling and unable to declare their birth-places by registration counties. Consequently the migration statistics of the 1851 census, elaborate as they may be, are the product of a most extraordinary jumble. The birth-places of the inhabitants of registration counties are classified by counties proper, so that instead of being told, let us say, how many inhabitants of Oxfordshire proper were born in Oxfordshire proper, we are told how many inhabitants of the "registration" Oxfordshire were born in Oxfordshire proper, and the report gravely deduces from these statistics general inferences about migration, without giving any warning that they exaggerate very seriously the amount of migration.

In 1861 this indefensible plan was abandoned, without remark, and the counties proper are used on both sides of the account, with the result of disturbing enormously the apparent amount of migration, as is shown in the table on p. 66.

It will be seen that, in spite of the steady decrease of native inhabitants of counties shown between 1861, 1881, and 1891 (the census returns of 1871 do not give the required information), the comparison of the figures for 1851 and 1861 would require us to believe that the increases during the decade 1851-61 greatly preponderated over the decreases. A comparison of the table with Table 26 to Appendix C in the Report on the census of 1871 will show that the counties in which large increases appear are mostly counties which differ largely from the registration county.

This return to the true counties in 1861 replaced the census migration figures on a proper basis so far as the counties were concerned. But the registration figures of births and deaths have continued to be collected and published without reference to the true counties, so that the census of birth-places and the statistics of births and deaths remain out of any exact relationship. According to the table already quoted in the Census Report of 1871, the number of acres severed by the Registrar-General's arrangement from the counties to which they belong was 3,147,772 out of a total of 37,319,221, and the number of persons attributed to counties which they did not really inhabit was 1,053,423, out of a total of

22,712,266. The acreage in 1891 was of course the same, except for the trifling alterations which may have been made in border union boundaries, and the proportion of population misplaced must be nearly the same.

Percentage of Inhabitants of certain Counties who were Born in the County in which they were Enumerated.*

	1851.	1861.	1881.	1891.
Sussex	80·76	77·63	69·7	66·6
Hants	77·51	71·03	68·3	65·0
Berks	65·12	71·40	65·1	63·0
Herts	69·86	74·70	68·4	65·2
Bucks	78·85	78·08	74·3	72·2
Oxford	73·36	78·06	74·1	73·0
Northants	75·86	80·45	75·9	74·5
Hunts.	69·94	77·16	74·0	71·3
Beds.	75·77	79·80	76·7	73·5
Cambs.	71·55	80·45	78·2	76·5
Essex	84·20	78·27	64·8	57·6
Suffolk	86·39	87·27	83·5	82·3
Norfolk	89·94	90·55	88·0	86·9
Wilts	86·75	85·31	79·4	77·2
Dorset	86·01	83·46	79·5	77·0
Devon	85·92	84·83	82·0	80·2
Cornwall	93·22	91·94	89·4	88·3
Somerset	79·77	81·15	77·2	74·7
Gloucester	75·73	75·06	73·6	73·8
Hereford	80·75	75·74	72·4	70·0
Salop	76·69	80·53	78·3	76·9
Staffs	70·62	74·92	76·9	78·0
Worcester	64·66	72·42	69·2	66·7
Warwick	69·20	69·88	70·3	71·3
Leicester	77·62	82·77	76·9	74·9
Rutland	62·87	75·05	67·5	63·8
Lincoln	83·98	86·38	82·2	81·9
Notts	71·71	78·93	72·5	71·6
Derby	75·10	75·58	71·3	70·5
Cheshire	68·55	68·18	67·1	65·9
Lancashire	73·03	73·63	74·1	75·9
Yorkshire	87·83	86·58	81·7	81·9
Durham	67·93	67·58	67·8	71·1
Northumberland	76·69	74·82	73·7	71·8
Cumberland	82·91	81·26	76·4	78·0
Westmoreland	76·53	73·85	73·4	71·3
Monmouth	54·65	62·76	65·9	64·5

In regard to areas smaller than counties, the continuance of the classification of births and deaths by unions is productive of grave practical inconveniences. If a citizen of Oxford desires to compare the mortality statistics of his town with those of other towns of the same character, and is infatuated enough to turn to the Registrar-General's Decennial Report for the purpose, what

* Middlesex, Surrey, Kent, and the Welsh counties are omitted, the materials for comparison not being complete.

will he find? Elaborate statistics about the Oxford union and the Headington union. The Oxford union comprises the southern and western half of the town, with a little hole in the middle. The Headington union includes the northern and eastern parts, and the hole in the middle of the Oxford union. The citizen will not be able to find out much about the whole town even if he takes the trouble to add the figures for the two unions together, for the Headington union stretches seven miles into the country. For urban comparisons the registration district figures are nearly useless. The smaller towns are generally included in large country unions, and the larger towns are almost invariably cut up between several unions. I hope there are not many towns so absurdly divided as Oxford, where a population of over 12,000 is cut off from its registrar's office by the intervention of a mile of town situated in another union, but most of the divisions are altogether unsuitable for statistical purposes.

The remedy for this chaotic state of affairs is very simple. It consists merely in recognising for registration purposes and for the census of birth-places the existing local government divisions of the country. These divisions have almost entirely ceased to overlap. There may perhaps be half a dozen cases, for which the Local Government Board is responsible, but I do not know of more than one. The whole country is divided into administrative counties and county boroughs, between which there is no overlapping. Every administrative county is divided into urban and rural districts, each of which is wholly within the administrative county. Every county borough and every urban and rural district is divided into parishes, each of which is wholly within the county borough or the urban or rural district. Every administrative county, every county borough, every urban and rural district, and every rural parish has its own council or assembly, and has or may have its own rates.

It seems evident that the proper areas to take for recording birth-places and births and deaths are the administrative county and its subdivisions, the urban and rural districts—of course grouping two or more contiguous districts together when they are too small or too much intermixed to give statistical results of value.

If anyone sees any valid objections to this plan, I hope he will bring them forward, and I will endeavour to deal with them. I only see three, none of which are of much account.

First, it may be objected that after all there is something to be said for the plan of grouping round a market town, regardless of the traditional boundaries of counties. It is quite true; but if that was really the plan of the Poor Law Commissioners they did

not carry it out with thoroughness, and if they had carried it out with thoroughness and success, their mapping out of the country would have ceased to be a good one in the course of the sixty years of change which have since elapsed. No delimitation will be absolutely free from inconveniences, and the best possible now will not be the best possible next year. The counties and county districts form by far the best existing local government areas for statistical purposes, and the fact that they are not the best conceivable for statistical purposes arises very largely from the fact that they are not the best conceivable for local government purposes. As time goes on they will probably be improved for local government purposes, and that will improve them also for statistical purposes.

This naturally brings us to the second obvious objection. It will be said that we want our statistical areas to remain the same, and our local government areas to be altered when required. This I simply deny. Few causes have brought about more erroneous statistical deductions than the refusal to extend our statistical areas as the population of towns increased, and an area which once included the whole of a town came gradually to include only the centre of it. Difficulties arising from alteration of areas must be dealt with by the formation of sub-divisions and other obvious methods.

A third objection which will perhaps be suggested is that administrative counties cannot be taken as the area for birth-places, because people will persist in regarding the ancient county as the real county. Now, as a matter of fact, a generation is growing up which, except when it votes in parliamentary elections, and looks at out of date maps, knows very little of the ancient county. The boundary of the county to the ordinary map-less being is the place where the county or border-borough police patrol ceases, and where the main road comes under the control or supervision of a different county surveyor. Athletic clubs, it is true, took the advice of Lord Harris, and refused to recognise the changes, but the ancient counties are being forgotten for all that. In the "Cyclists' Touring Club Gazette" I constantly see candidates who live in the ancient Berkshire part of the city of Oxford set down under Oxfordshire. Is it likely that anyone will give his address as Oxford, Berks? Is it likely that many an artisan who married, and went to live in the parish of Grimsbury, in the Oxfordshire borough of Banbury, in 1895, and has been an elector for the county council of Oxfordshire, will describe his children in the census schedule of 1901 as having been born in Northamptonshire, simply because he happens to have a parliamentary vote for South Northamptonshire? Some temporary

confusion there must necessarily be, but surely the probability is that the administrative county will generally win the day in the mind of the householder.

To get rid of all confusion by making the administrative county the only county, three things are required besides time. The first is that the parliamentary areas should undergo the very slight readjustment requisite to make them correspond with administrative counties, or at any rate with the groups of administrative counties and county boroughs into which the old counties have been divided. The second is that the Agricultural Department should instruct the ordnance survey to recognise frankly the administrative counties and county boroughs, to leave out the completely obsolete and absolutely useless hundreds, and to insert instead the urban and rural districts. When a Government changes the system of weights and measures it proscribes the use of the old standards. When our Government changes local government boundaries, so far from forbidding the sale of maps showing the old boundaries, it goes on for years itself selling maps showing the old boundaries and no trace of the new boundaries. The Ordnance Survey has never, I believe, shown a union or a sanitary district other than a borough on any map, except rough sixpenny county diagrams. The latest edition of that diagram for Oxfordshire was photozincographed in 1888, that is to say before the great remodelling of 1888, to say nothing of that of 1894.

The third thing requisite for preventing confusion about county boundaries is that the registration county, which never got into the maps, should disappear from other government publications.

The reform which I advocate would of course evict it from the Registrar-General's reports and the census returns, and it would appear to the ordinary mind that nothing more is required. But the inability of Government departments to recognise changes is phenomenal. The report of the Census of 1891, which was conducted under the authority of the Local Government Board, deplores the existence or supposed existence of two counties, the "ancient" and the "registration" county, and says, "when the Local Government Boundaries Commission of 1888 was appointed, it was hoped that some way would be found of causing one or other of these two counties to disappear, so that the various subordinate local administrative areas might all be subdivisions of a single larger unit. But it has turned out otherwise. The ancient county and the registration county both remain, and a third county, called the administrative county, has been added to them differing from each." As I have said before, the ancient county has ceased to be a local government area, except where it coincides

with the administrative county, and the registration county never was any county or local government division at all, but a collection of poor law unions made by a Government department. The Local Government Acts of 1888 and 1894 have caused "the various subordinate local administrative areas to be all subdivisions of a "larger unit," viz., the administrative county or county borough. Yet in the "Annual Local Taxation Returns"⁷ the Local Government Board continues to endeavour to fit the subordinate local administrative areas into the scheme of an arrangement by registration counties. The grotesque effect is to create a fourth county, which we may call the "urban and rural district county." To take an example, Oxfordshire, in the last Local Government returns of urban and rural district receipts and expenditure, differs from the "registration county" by excluding the Warwickshire part of the Chipping Norton union, and by including Mixbury, Finmere, Chinnor, Binsey, and the Oxfordshire part of the Faringdon union. It differs from the administrative county only by *including* four rural districts with an area of 56,133 acres and a population of 11,206, which are *wholly outside* the administrative county, and by *excluding* three other rural districts with an area of 43,166 acres and population of 10,677, which are *wholly inside* the administrative county. Oxfordshire is not peculiar; it is an absolute rule that the "urban and rural district county" in the Local Government Board returns, when it differs from the administrative county, differs by containing rural districts wholly outside, and excluding rural districts which are wholly inside the administrative county.

⁷ For 1894-95, Part III. No. 9A, Rural District Accounts, and No. 10, Parish Council and Parish Meeting Accounts, and the same Returns for 1895-96, Part III, Nos. 9 and 10.

DISCUSSION *on* MR. CANNAN'S PAPER.

MR. A. E. BATEMAN, C.M.G., said they first had to thank Mr. Cannan for an excellent paper, which he was very glad to have, because it was sometimes said the management of the Society rather tended to fall into the hands of the permanent officials of the Civil Service. At any rate the Government department members of the Society could not be accused of being anxious to stifle discussion when they admitted such a paper as the one just read, because they had there present that evening three representatives, including himself, of the various departments, who might almost be considered as three prisoners in the dock.

There were a few points concerning his own department which he would like to explain. In the first place, Mr. Cannan said there was in Ireland special machinery for collecting emigration returns. He did not think that was quite so. The police counted the passengers when they embarked and disembarked, and put questions which people might answer or not as they liked; there was no special machinery. Then on p. 56 he found a reference to the difficulty of obtaining full particulars of all passengers entering or leaving this country. It was not difficult to count them, and the figures which were obtained from the different shipping companies and from the Belgian government were doubtless substantially accurate as to the numbers; but people who were in a hurry to get on board a steamer say at Dover, or land at Newhaven, would not stand, simply in the cause of statistics, to be examined as to their nationality, occupation, and various other things. Statistics were made for man, not men and women for statistics. Although he should like to have greater power to make those statistics of all incomers and outgoers more complete, they must allow for human nature, and especially British nature. They already got very full returns of the numbers in and out. The Board of Trade had a great deal to do with the railway and shipping companies, and usually found them very reasonable. Parliament had given them various duties to perform, and he did not think they were likely to refuse the returns required of the yearly movement of passengers. On p. 56, again, Mr. Cannan said, "if he finds that there has been a net immigration of foreigners to the number of say 10,000, the editor invariably proceeds to remark that the number or population of foreigners in the United Kingdom has been increased by 10,000, as if the foreigner received immortality from the health-giving air of our islands." They did not say the population had increased by 10,000, but that there had been an addition to the foreign population of that number, which was quite a different thing. They did not attempt to go into the question whether there had been mortality or births among those 10,000.

Mr. CANNAN said that those who were born in this country were not foreigners.

Mr. BATEMAN, continuing, said that as to the complaint on p. 57, that the Board of Trade did not compare the census account of the foreigners in England with its own account of foreign immigration, and show how far the two agreed, this had been done in a memorandum on the immigration of foreigners into the United Kingdom in 1887, and, so lately as in a well known report on the volume and effect of Russian immigration, figures had been compared. Then they came to a great grievance, namely, as regarded Mr. Cannan's own voyage to America. The authorities had given no trouble by asking questions on board, and yet they got accurate particulars which they had ascertained before the ship was allowed to sail. As a fact, before the ship received her clearance papers the list of emigrants had to be deposited with the customs. Again, on p. 59, he said, "whether a through ticket includes a return ticket I have not discovered." On that he (Mr. Bateman) would only say, that the people who came with through tickets were mostly Russian Jews, who were passing through, and the question did not arise. They had barely money enough to get one through ticket; they did not think of returning. On p. 61, respecting the nationalities of those born in various parts of the British Empire, he agreed with Mr. Cannan that the returns were not quite satisfactory, but the remedy would be very difficult. In the case of the colonial born, those figures of nationality were not strictly accurate. He did not know that it was very important, because colonials did not come here in large numbers as immigrants, they came and went, and there was perhaps a balance, but not a very large one. The great mass of the figures they wanted to have was the steerage passengers, immigrants and emigrants; the saloon passengers and people who went across to Paris were rather beside the mark.

Mr. N. A. HUMPHREYS protested against the absence of any recognition of the fact that the Registrar-General's Office had the strongest possible interest in the adoption of the soundest estimate of population, and that this desideratum had been again and again discussed by successive superintendents of the Statistical Department. Dr. William Farr, one of the most eminent Presidents of the Society, had recommended and adopted the system which Mr. Cannan condemned. He was succeeded by Dr. William Ogle, also an able Fellow of the Society, who, after careful consideration and discussion of the subject, had not felt justified in adopting any other method of estimate, although he had on many occasions discussed and critically examined the Board of Trade returns of emigration and immigration, and had the advantage of considering these returns in consultation with Sir Robert Giffen, an eminent public official and past President of this Society. It was a fact that Dr. Longstaff made an estimate before the census in 1891, which was remarkably near the truth, but bearing in mind the various assumptions on which it was based, the estimate was little more than

a clever and fortunate guess, and one which a Government department would scarcely be justified in adopting as an official estimate. At any rate there was no assurance that another attempt on the same basis would turn out as well. With regard to the large error resulting in 1891 from Dr. Farr's method, it was true that the enumerated number was 700,000 less than the estimate, but this error did not exceed $2\frac{1}{2}$ per cent. on the enumerated population of 29 millions. Why did they need estimates at all? It was to serve as the basis for marriage, birth and death-rates, and it was clearly stated in all the Registrar-General's publications that the adopted estimate was based upon a simple hypothesis. It was pointed out by Dr. Ogle in his Census Report, that the maximum error at the end of the ten years 1881-90 only affected the annual English death-rate by 0.22 per 1,000, an extent of error that might well be disregarded, especially as there were other disturbing influences, which all accustomed to deal with birth and death-rates were aware of. The estimate for England and Wales was, however, only a very small part of the question. The most perfect statistics of emigration would be absolutely useless for the calculation of local death-rates, although no local death-rates could be calculated without some system for estimating population in intercensal years, and to give up local death-rates because it was difficult to estimate population accurately, would be fatal to sanitary progress.

In one part of the paper the author said, "moreover, they ask us to believe that the later years of a decade are necessarily more favourable to the growth of population than the earlier." Did Mr. Cannan really suppose that the increase in the population of 29 millions enumerated in 1891 was not really greater than the increase in the population of 26 millions enumerated in 1881? The Registrar-General would be delighted if the Board of Trade would furnish migration statistics and vouch for their approximate accuracy; but to be useful those statistics should be issued sooner after the close of each year than was now the case. The migration statistics for 1897 had not yet been issued, while the Registrar-General's estimates for the year 1898 had already been published.

Passing on to the London census, he was sorry to find that the reader of the paper refused to recognise any value in the next quinquennial census in London. Speaking with an intimate knowledge of the census process and its results, he attached no importance to the slight verbal differences in the directions given in schedules pointed out by Mr. Cannan. It was possible that the objection taken to the London census with regard to persons away from home on Sunday might have some validity, but he felt confident that the result could not have been affected to any material extent. The London census in 1896 showed a population just 14,000 less than the number estimated by the rate of increase in the preceding ten years. Mr. Cannan thought that the population was considerably overstated, but there did not appear to be any tangible ground for the asserted inaccuracy of the return, and this quinquennial census was, he (Mr. Humphreys) hoped, the thin end of the wedge, and when the Census Act for 1901 was passed, it might be possible to convince the Government

of the desirability of having a quinquennial census for the whole of England and Wales. Nothing short of that would be satisfactory, and if the period of guessing could thus be reduced from ten years to five, it would largely add to the value of all vital statistics.

A serious complaint was made that the union was still practically the registration area. Unfortunately this was inevitable under the provisions of the Act which established civil registration in 1837. As to the suggestion that by a little book keeping the facts registered in unions could be tabulated in other areas, Mr. Cannan could not seriously have considered the enormous difficulty of thus dealing with about 900,000 births and 500,000 deaths per annum. The General Register Office was however doing all that was possible, as opportunity occurred, to get rid of overlapping boundaries, which were an intolerable trouble and difficulty to the Department, and which undoubtedly, to a certain extent, depreciated the value of local statistics. He would refer to the case of Bristol, which was now partly in two counties, partly in two registration divisions, and partly in four unions. Changes were in progress which would consolidate the enlarged city into one registration district, co-extensive with the new Poor Law Union. Many of the county boroughs were moving, by Act of Parliament or by Local Government Board Order, to make their boroughs the unit for Poor Law purposes. When that was done the registration district would correspond not only with the Poor Law Union but also with the borough boundary. These changes were also more nearly assimilating the boundaries of the administrative county and the registration county. As to the ancient county, he quite agreed it was practically dead and gone.

There was a charge made of corruption with regard to the London census which he hoped that Mr. Cannan would, on consideration, see fit to withdraw. He was mistaken in assuming that the enumerators were appointed by the local authorities. They were appointed by the local registrars, and while it was true that the registrars were in the first instance appointed by boards of guardians, they ceased on appointment to have any real connection with the local authorities, except to receive from them their registration fees. They became simply registration officers under the Registrar-General, and therefore had no interest whatever in the distribution of the fund for the equalisation of rates. It was highly desirable that Mr. Cannan should withdraw this charge of corruption, which was entirely unfounded, and might be accepted elsewhere by people who had no means of ascertaining whether the charge was justifiable.

Mr. G. W. B. McLEOD said that the figures in the local taxation returns relating to rural districts were not now arranged according to "union counties." Arrangement according to "administrative" counties had not been possible until, under the Local Government Act of 1894, the changes of area had been made which led to every rural district, with a few exceptions, being wholly comprised

within one "administrative" county. Before those changes, many rural districts were in two, three, or more administrative counties, but none were in more than one "union" county. In the Local Taxation Returns for 1896-97, which were at present passing through the press, the urban and rural districts were arranged according to "administrative" counties.

Mr. W. M. ACWORTH said that he had a personal connection not long ago with what he thought was the champion illustration of our demographic statistics as at present existing. Some eight or nine years ago he was living in Dulwich. There he found himself as a matter of fact in a small portion of Streatham, and accordingly became a member of the Wandsworth and Clapham Board of Guardians. He was then elected by his neighbours as their representative on the first County Council for the Dulwich division of the parish of Camberwell. Part of that division was constituted by Penge, which Mr. Cannan had passed over in a manner which he ventured to think was not in proportion to its real importance, because Penge was in the cricket county of Kent, in the registration county of Surrey, and in the administrative county of London. As a Local Government unit dealing with areas smaller than counties, Penge was for Parliamentary and also County Council purposes in Camberwell; for the purpose of the Metropolitan Management Act it was in Lewisham; for the purpose of the Poor Law, Penge was in Croydon; for the purpose of Police and the County Court, Penge was in Lambeth; for the purpose of the School Board, it was in Greenwich; and he believed, though he was not absolutely certain, the Post Office put it in Norwood. He was far from suggesting that it was altogether typical, but he did think anyone who had to do with Local Government statistics must have constantly wished that he could impress the House of Commons with the fact that the reconstruction of areas was a point of real primary importance in the economy and efficiency of the Local Government. Mr. Humphreys had just spoken about Bristol. The Bedminster Union having been taken into Bristol, he trusted it would be possible in future for people interested in poor law statistics to have some idea of the state of pauperism in Bristol. No one knew, for example, anything about the pauperism statistics of Liverpool unless they had local knowledge which told them what portion of the city population was in Liverpool and what portion in West Derby. Nobody knew anything about the statistics of Manchester unless they happened to know about Chorlton and other places, and so it went on with every important town in the United Kingdom. As he listened to Mr. Humphreys's explanation, he could not help thinking of the old German saying, "*Das Beste ist der Feind des gutes*." They could see there was a risk of error in estimates, and they knew also that Government departments very naturally objected to any responsibility which was avoidable, but Government returns would really be more valuable if somebody would sometimes take the responsibility of making an estimate, and publishing it as an estimate. Statisticians would then know that it had been made by the most competent authorities

with access to the best sources of information, and that it could be relied on, not for complete accuracy, but as being the nearest approach to it available.

Major CRAIGIE said that they were all very much obliged to Mr. Cannan for the paper which he had brought before the meeting, and which, even if it took more or less the form of an attack on several official departments, was a very legitimate criticism, which they were always ready to welcome, in order that they might hear these questions threshed out. It was an advantage to those who were dealing with official statistics, to hear the views of those who looked at them with absolute freedom, and with no hampering responsibility, from another and an outside point of view. It was now a quarter of a century since he himself had first written and spoken on one of the particular points of this paper, the co-ordination and amalgamation of our confused local areas. Therefore, when he heard Mr. Cannan, he did so with a little feeling of despair, because there was a time, many years ago, when he had hoped that a great simplification in existing areas would be effected in connection with the changes in county government, but the local interests which had grown up round the union areas retarded any thorough settlement, and although a good deal had been done, old reformers could hardly be expected to be quite satisfied with the progress made in the direction of unity. It was unfortunate again, as had been often before shown, that the occupation statistics of our census did not show the occupations of the people in the areas in which other important statistics were grouped. That subject had been lately brought before two Royal Commissions, first the Labour Commission, and secondly, the Commission on Agriculture. Mr. Little's instructive tables in the Labour Commission Report showed how widely different were the areas of the counties in which the distribution of land with the different crops, was shown from the other counties bearing identical names wherein the census numbers of farmers or labourers were grouped. It was thus difficult, if not impossible, to compare the number of labourers or of farmers in any given county or area with the acreage of grass or arable land, or to discover the relation of the aggregate agricultural population to the number of individual holdings. Of course the crux of the situation was the rejection or acceptance of the union as the governing area, with the groups called union or registration counties. As Mr. Humphreys pointed out, the complication of areas was the result of legislative enactment, not administrative perversity. The union was by Act of Parliament made the basis of population returns, so that the Registrar-General's department had no option in the matter. The meeting probably hardly realised the extent to which since 1894 the parish and sanitary areas were gradually being altered. Voluminous notices of these changes were recorded in the Survey Branch of the Board of Agriculture. He would like to say on behalf of his own department, that some of Mr. Cannan's strictures hardly applied, as the maps prepared by the Ordnance Survey were really not quite so defective in the matter of boundaries as

Mr. Cannan imagined. He was not quite certain which series of maps he referred to, but if he alluded to the 6-inch or to the 25-inch map he thought he would find there the boundaries to which he referred fully laid down. The author probably relied on the 1-inch.

Mr. CANNAN said he specially referred to the 1-inch map, but also to an index map of Oxfordshire of the 6-inch map which he had recently bought, and which gave none of the boundaries he had mentioned. Thirdly, he referred to the 6*d.* diagrams, which had not been altered.

Major CRAIGIE said the new 6-inch map contained the boundaries of the urban sanitary districts, in every case showing the administrative county. The older maps were now being revised, but this was an operation which could not proceed very rapidly. The Survey Department introduced corrections in the maps from time to time as revision was carried out, but this could only be done slowly, and it was obvious existing maps could not be called in and cancelled on the occurrence of every change of boundary.

Mr. R. PRICE-WILLIAMS had heard with great regret the allusion to the existence of bias on the part of the enumerators in the recent census of London, and as Mr. Noel Humphreys had clearly explained that there were no grounds for such a statement, he hoped the writer of the paper would withdraw it. He also regretted to find that the recent census of 1896 did not meet with the approval of the writer of the paper, whereas he (Mr. Price-Williams) hoped it was the prelude to a quinquennial census of the Kingdom. With regard to the constant changes in the areas, he must admit that that of the rural and urban districts constituted a great source of complexity and difficulty in continuing his investigations in relation to the growth of population in different districts, during the last decade of 1891, in connection with previous papers he had read on the population of England and Wales and the population of London.

Sir ROBERT GIFFEN recognised the importance of the criticisms which Mr. Cannan had made, but he thought, at the same time, that the value of a good many of his observations lay in this: that he had called attention to the real difficulties in getting official statistics put in quite as ship-shape a form as a student would like to see them. A great many of the alterations which seemed desirable could not be effected without legislation, whilst legislation on these subjects was practically impossible. He was led to think of that a good deal in connection with the statistics of emigration and immigration. Like Mr. Cannan, he had been a traveller between this country and the United States, and the same kind of observation had occurred to him as had occurred to Mr. Cannan, namely, where did the people who made the returns to the Government get their information with regard to the passengers? He was not surprised at all with reference to our

own returns as to outward passengers given to the Government, because he knew that the information was obtained before the passengers went on board the ship at all. He was surprised, however, at the elaborate returns made to the United States Government, for he thought a good deal of the information which the Government professed to obtain was certainly not obtained in former years at least, whatever might be the case now, from the passengers themselves, and nobody else could have given it. As regards our own emigration statistics, one chief part of them was made up from returns which were not required by the Government for the purpose of statistics. They were the returns required by the Passenger Acts, and were primarily required for administrative purposes. That they had been adopted in some degree for statistical purposes, in his opinion, was really a credit to the statistical work of the Board of Trade which had to do with them, and not a discredit, because they were using the best materials at their command. In addition they had supplemented that information by getting a great deal of additional information from merchants and shipowners. How to improve that without legislation was really the problem, and he thought Mr. Cannan must admit that, legislation being practically impossible, the remarkable thing was that the statistics could be used for so many purposes as they were now used for. When it was a question of legislation again, another point had to be considered: it was quite possible to have a great many elaborate statistics on a great many subjects if expense was no object, but if, for all reasonable purposes, the requisite information was obtained, was it worth going to that expense? They must all remember what Quetelet said long ago about superfluous and unnecessary statistics, about making statistics of such facts as the relative number of people stepping out in the morning with the right or the left foot first! The same thing applied in a greater or less degree to all statistics, and it was not of much use to point out that in certain things greater accuracy might be obtained, when in fact the statistics were already sufficiently accurate for all the purposes for which they were required, and to obtain a greater degree of accuracy would cost a great deal of money.

Mr. COHEN said that when Parliament came to closer quarters, if it ever did, with many of the sociological questions chattered about at the last general election, questions relating to the cheapening of deferred annuities for our labouring population, questions relating to unemployed persons and to regularity of school attendance, and even in certain contingencies to national defence, &c., it would discover the absolute necessity of reviewing the whole machinery in England for collecting statistics of the movement and particulars of population. He thought he was correct in saying our country was alone in Europe in having very incomplete records in regard to its population. He felt sure that whenever they came to deal with any of these sociological problems to which he referred, there would be needed arrangements for the better identification and more complete enumeration of our

population. Probably the very first thing that would be found to be necessary would be a scheme for setting up not merely fuller or more inquisitorial inquiries at the port of arrival, but a system of local record offices throughout the country, which he hoped would not be connected in England with police agencies. He joined in urging Mr. Cannan to reconsider his comments as to the liability to error with regard to the enumeration of the London quinquennial census; he did not think it was customary in the paper of a scientific society to suggest corruption with no other justification than the hypothesis that it might be perhaps remotely to the interest of the enumerators to be corrupted.

Mr. H. F. T. BURGESS said that the author apparently wished to see the statistical areas increased as the population of the towns increased. He did not know whether that would entail a continual moving or shifting of boundaries, but this point must be looked at from a geographical point of view, so that the geographical student of the future might be able to trace the movement of population from one place to another. During the past hundred years the distribution of population in the country had been greatly altered by the growth of manufactures. The formation of subdivisions was also a very important point.

The CHAIRMAN (Mr. C. S. LOCH) said he was much interested in this subject from the point of view of poor law relief, and he thought it would be of great service if they had various groupings of unions which would really represent what might be called populous areas. It had been admitted that they ought to work towards accepted single areas and subdivisions, and it was rather discouraging to be told that nothing was possible in the way of legislation; but he certainly did not think it would be right to adopt that position. If it were not impossible, but only difficult, that Society, and students of statistics generally, should use their utmost endeavours to get the necessary alterations made. The demand for statistical information might originally have been due to the requirements of local administration. Now, however, the *data* were of value from the point of view of statistics generally, over and above any service that they might render to local administrators. The discussion might well have some practical outcome. He could not help thinking that it would be well if the Council of the Society were to consider whether steps could not be taken to make such changes as would, in the eyes of the authorities, seem really desirable.

Mr. CANNAN, in reply, said he thought the mere numbers of immigrants and emigrants given by the Board of Trade were correct enough for all practical purposes, and had said as much in the paper. He did not propose that they should have any special arrangement for counting ship passengers; what he meant was that Parliament ought to put the law under which the Board of Trade worked into what Sir Robert Giffen called ship-shape form, and enable the Board to be reasonably secure of getting the

information desired without being so dependent on the courtesy of private persons. Considering the actual state of the law, as described in the paper, he thought great credit was due to the Board of Trade for its statistics as to the mere numbers of immigrants and emigrants, but he did not think a good case was made out for the nationalities as collected by the Board. He scarcely understood Mr. Bateman's view as to what constituted nationality. He had said that the Board of Trade was correct in describing him as an Englishman, and he still thought so, as he was a British subject domiciled in England. But in Mr. Bateman's view the Board of Trade was wrong, inasmuch as he was the son of a native of Scotland and born in Portuguese territory. It was said by Sir Robert Giffen, as well as by Mr. Bateman, that the passenger lists were made before the people went on board. But did that apply to immigrants as well as emigrants? The particulars with regard to nationalities, conjugal condition, and occupations of both immigrants and emigrants were, he maintained, imaginary. The shipping agents had no means of knowing anything about himself except what was put on his ticket, viz., his address, whether adult or child, and probably his sex. The ticket might easily be made to give more information, but at present, if the information in question was not obtained on board ship, it was certain they could not possess it.

He agreed with Sir Robert Giffen, it was a mistake to ask for too many particulars. The only additional thing he asked for was the collection of separate nationality (or, preferably, country of birth) statistics in regard to the migration to and from non-European countries, as well as in regard to poor European immigrants. In return for this very small addition he proposed that a good many of the columns in the schedule of the Merchant Shipping Act should be left out as useless, so that he was really asking for less rather than more. No one had defended, or could possibly defend, the division of all passengers into English, Scotch, Irish, and foreign. With regard to the rejection of the Board of Trade figures by the Registrar-General, it was said that the Registrar-General had gone into the subject with Sir Robert Giffen, who admitted these figures were not sufficiently trustworthy to base an estimate upon. He gathered that was some time ago. The figures had certainly been enormously improved in recent years, and he should think that opinion might have been perfectly correct at the time but not correct now. Statistics as to the nationality of migrants, whether correct or incorrect, obviously had nothing to do with an estimate of the population of the United Kingdom, or even its distribution between England, Scotland, and Ireland. A genuine estimate for Ireland was already made by the Irish, and accepted by the English Registrar-General, and the distribution of the population of Great Britain between England and Scotland offered no greater difficulty than the distribution of the population of England between different English counties. He was surprised at the objection that the information about the population of the whole country would not tell the population of the localities. This was

obviously true, but the estimates of the population of the localities had to be made up from the estimate of the population of the whole country somehow, and the method adopted need not be affected in the least by the proposed change. However, as a matter of fact, it was notorious that the present system was very inaccurate as regarded localities. He would give one instance of this inaccuracy, for which he had reason to be thankful. Oxford was a county borough, although it was not in the Local Government Act, 1888, and had a population of under 50,000 at the census of 1891. The estimate of population approved by the Registrar-General and accepted by the Local Government Board and Parliament, put the population at 53,000, although it turned out to be only 45,742 two years after.

Mr. Humphreys objected to his saying that the system made the increase of population greater in the last five years than in the first five years of each decade, and suggested it was absolutely necessary that it should be so. He could not see any necessity for it at all. If the increase of population in each of two decades was 3,000,000, he could not conceive why they should suppose that the increases in the second halves of the decades were greater than those in the first halves.

Mr. HUMPHREYS said, if there was an increase of 3,000,000 during a decade, it seemed obvious that the annual increase must be greater in the later than in the earlier years of such period.

Mr. CANNAN said that it was so, but the assumption of a uniform annual percentage of increase was wrong. The absolute increase between 1881 and 1891 was actually rather less than the absolute increase between 1871 and 1881, and that being so it was obvious they could not suppose the increase in the second five years of each decade to be greater than in the first. If the rate of increase happened to be decreasing, the increase in the second five years might be equal to or less than that in the first five years. He had been accused of not giving Government departments the credit of being engaged in consideration of these questions. He had no doubt they were being considered, and he had hopes of seeing some results of that consideration. It had been suggested that various local authorities were moving in favour of unification of areas, but he did not think it ought to be left to local authorities; if it were, they would never arrive at it. He was sorry that he had made one or two statements with regard to the Ordnance Survey which were out of date, but was glad to hear from Major Craigie that his suggestion had been to a great extent already adopted. At the same time he would not pretend to be satisfied till all the administrative counties (from the Soke of Peterborough upwards), the county boroughs, and the urban and rural districts appeared on the 1-inch map, which might be called the map of the people, as all other common maps were copied from it. He was also glad to hear that the Local Government Board did not intend to adhere to the curious arrangement of rural districts adopted for the first quarter of 1895. It had occurred to him

that the arrangement might be temporary, but he had been unable to find any reason whatever for its temporary adoption. Lastly, as to the London census, several speakers had asked him to withdraw the charge of corruption, but it was perfectly well known that a census in which the returns of the population had some influence on grants from the central government to the localities would be corrupt.

Mr. HUMPHREYS said the enumerators were not always local people, and there was no connection between them and the local authorities which could influence them to give corrupt returns.

Mr. CANNAN said it was quite sufficient if the enumerators were generally local people, and often persons ordinarily in the employment of local authorities. He had no doubt that a great many people had been incorrectly entered owing to the doubtful clause on the top of the schedules. When a man had an interest in counting a person about whom there was some doubt, he would do so unless he belonged to the abnormally conscientious minority.

Note subsequently added by Mr. Cannan.

The question raised as to the accuracy of the London Census of 1896 is not of much importance in relation to the general purpose of the paper, and it is therefore natural that some speakers in the discussion which followed should have been surprised that I insisted on pressing my point against it. Perhaps I may be allowed to explain here that under the Equalisation of Rates Act the same incentive, whatever its force, to reckoning as large a population as possible will be brought into play in every London district, not only at every intermediate London census, but also at every general census. Moreover, it is possible that, unless a timely protest is made, the system of distributing common funds according to population may be extended from London to the country, where local feeling is more highly developed than in London. The genuine alarm which I feel at this prospect must be my excuse, if I am really to be held to have libelled human nature by the suggestion that on the whole enumerators will be likely to give their own localities the preference in all doubtful cases.

How unjust and inexpedient inequality of rates should be removed, is a political rather than a statistical question, but it is, I hope, permissible to express my hope that the influence of all Fellows of the Society will be used against a method which throws suspicion on the most important of all statistical data, the census enumeration.