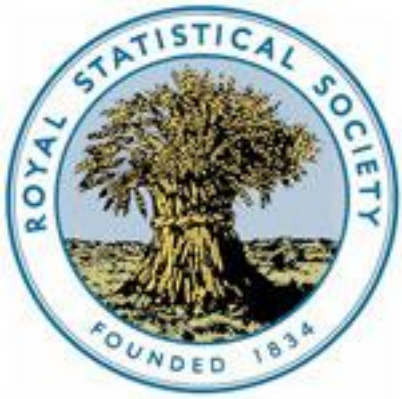

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Author(s): J. A. Baines
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On Census-Taking *and its* Limitations.

By J. A. Baines, C.S.I.

[Read before the Royal Statistical Society, 20th February, 1900.
Lesley C. Probyn, Esq., Vice-President, in the Chair.]

At a time like the present, when public attention is concentrated almost exclusively upon the promotion of the national interests at the other side of the world, it is scarcely in reason to expect that the current emanating from the well of statistics undefiled, at which we are accustomed at this season to quench our scientific thirst, should be allowed to pursue the noiseless tenour of its way uncontaminated by the cross currents of outside preoccupations. Among other lamentable results of the war is the postponement of our President's inaugural address, which had been fixed for to-day, but which we can only hope for at a subsequent meeting. The short time allowed by the change of programme admits of the production of nothing better than a makeshift paper; in fact, my position reminds me of the story told by Sir Algernon West, in his recent charming book of "Recollections," of Lord Granville, who, when called on to replace Mr. Gladstone at the Academy dinner, quoted an offer he had read in a ladies' paper of the exchange of "a singing bird for an old muff." Looking at the eminence of our President, and the attractive and important subject he has selected for his address, I feel I can confidently rely upon the recognised superiority of the pleasure of anticipation over other pleasures in consoling ourselves on having in reserve good wine not usually available to bring together a large company towards the end of the Society's session.

Admitting, then, that the paper is thin, and the treatment of the subject somewhat superficial, I may claim in compensation the full sympathy of Fellows of the Society with its general purport. There are, I think, few statistical questions of periodical recurrence the importance of which has been so fully recognised by us, and which have received accordingly such careful consideration at our hands, as that of how to promote the success and efficiency of our decennial census. The campaign was opened in 1840, and has since been continuously carried on whenever the operations have come under official discussion. Many Fellows of the Society will recollect the instructive paper read in 1889 by our esteemed colleague Dr. Longstaff, and the part taken by him and others of our

number before the Treasury Committee, the chair of which was taken by our immediate past President, Mr. Leonard Courtney. It must be admitted that our efforts have not met with the success they, in our opinion at least, deserved, and that many of the suggestions which were held by us to be of the highest practical value, have failed to commend themselves to the official bodies concerned. On the other hand, the attempt has not been in vain in that it has tended to concentrate the views of many cognate societies upon definite points, and to enlist alongside of us the aid and sympathy of many who have in view the same general object as ourselves, and who can bring to bear upon it, moreover, the weight of great and varied experience.

It was in no desponding spirit accordingly that the sub-committee appointed last year by the Society, and led, we hope to victory, by our distinguished friend, Sir Robert Giffen, considered afresh the situation, and launched the communications which have been laid before you. Some of our suggestions were new, others reiterated the old and cherished ideals. We hope to ultimately make an impression, *non vi, sed sæpe cadendo*, upon even the Local Government Board, which, after all, is, by its name, of wood only, and so more open to persistent instillation than the bed-rock of its neighbour, the Treasury, on which our late effort for a quinquennial enumeration was shattered, the impact being engineered by our errant colleague, Lord Welby, another "lost mind."

I propose now to review some of the principal factors that contribute to a successful census, from the point of view of one who has been obliged on more than one occasion to grapple with them from the inception even unto the bitter end of the operations. In the first place, it is essential in the highest degree to get an early start. If, as in this country, legislation is necessary before a single step can be taken, it is obvious that the statutory authority should be either permanent, to be used at definitely stated intervals, or at least that it should be conferred at a date sufficient to leave abundant time for the preliminary measures. Few people adequately realise the amount of preparation entailed by a general enumeration, the vast field, and the amount of detail to be covered. The usual conception seems to be that a rather seedy stranger drops a curiously complicated paper (which has to be read at various angles) containing certain foolish, certain other impertinent, and other again unintelligible and futile questions concerning one's maid servant and the stranger that happens to be within one's gates, and that the said paper is called for the next morning, your inmost family details unsympathetically perused, probably with the remark that your declaration of occupation indicates that you do not know your own business. The one

drop of comfort lies in the assurance that if you find that your wife's age has become the common property of your court or alley, you are at liberty to complain of a breach of official confidence, which, however, is not in England, I believe, punishable by law. What has to be really taken into account, however, is the difficulty of getting that seedy reprobate to one's door at all, and also to ensure that your neighbours one and all are subjected to his visitation equally with yourself, so that no one escapes the inquisition of that bit of paper, and further, that every bit is duly rendered to the proper authority and made available for use in the subsequent operations.

The actual time required for preparation differs, obviously, in every country; not only by reason of social and geographical features, but in proportion to the permanent provision made by the State for such statistical alarums and excursions as a census. As to the latter question, I fear that recommendations for the establishment of such a permanent agency, however sound in their merits, are not likely to be favourably received just now, in either this country or in India, where it is equally necessary. At the close of my term of office, I left to my successor, who was appointed last November, bound and indexed volumes of all rules, circulars, estimates, notes and other documents referring to the preparations and subsequent procedure at the last census of India, and I have since submitted to the Government a memorandum containing suggestions and warnings for use on this occasion. But in spite of all the pioneer work that had been done, I felt compelled to recommend a period of preparation only shorter than before by two or three months, and I am informed that the period has been found none too long. I speak now only of the central and controlling authority, by whom the whole procedure is regulated, and who is responsible for the general lines of the operations and for every form and register prescribed. The application of those rules to local conditions, the translation of schedules and instructions and the details of practice, which differ in each province, are entrusted to the provincial superintendents, who, the Census being late in February, do not, as a rule, take up their duties until the beginning of April. It must be remembered, moreover, that these officers are not generally men already experienced in census administration, but are selected on consideration of their reputation for general administrative ability and their knowledge of the people. They have therefore all their work to learn. In this country, as our colleague, Mr. Noel Humphreys, is perhaps regretfully aware, the word "go" has not yet been given, and the Bill which defines his course is still, apparently, in embryo. The Census Act is not of anything like

the same importance in India, and is anticipated by much of the preliminary work done through the permanent official channels, but as it regularises the position of the officers specially engaged, and affects financial arrangements, it is required before the operations bring the census into direct touch with the householder.

From the excellent description of the operations in India given by Mr. Reginald Hooker in his comprehensive review of the census operations of the British Empire, read before us early in 1894, it will have been seen that there is but little of the detail in our eastern dependency that runs parallel with the work that falls upon the census superintendents in the United Kingdom, and it is in this last that we are mainly interested at the present time. If, then, I make use of my Indian experience here, it is for the sake of illustration by contrast rather than by comparison, and as enforcing from a different standpoint the lesson of timely preparation. Each country has its own special difficulties and its own relative advantages in regard to the census. In the main, the difference is more prominent in the results than in the administration. Here we find a comparatively homogeneous social framework with a highly complex commercial and industrial development. In India, on the contrary, the industrial structure is of the simplest, whilst the social system and ethnic distribution is one of the most complicated, the most varied, and the most elaborate that the world presents. In the former, urban conditions, in the latter rural, are markedly predominant. Hence the enumerator's area in India is greater and his population smaller than here. The general illiteracy and narrow horizon of an agricultural population not only render the supply of enumerating agency less abundant in India, but also increases the work of enumerating, since it puts out of question the practice of leaving the responsibility of filling in the schedule to the householder. On the other hand, the work of everyday administration necessitates the presence in each village community of some one official responsible for the clerical work of the whole, and thoroughly acquainted, therefore, with every house and family in the place. Then, again, and in this respect I know that my statement will bring the tears of envy into the eyes of Mr. Humphreys, there is in India no overlapping of areas. From the village through the subdivision and district, to the province, there rules one series, the smaller units being multiples of that immediately above, and the same regularity is generally found to prevail in all the older cities and most of their suburbs. There are, of course, exceptional tracts, as in the mountainous country and in the comparatively recently colonised plain of Bengal, but,

for the most part, all that has to be done is the subdivision of the village and hamlet, and the separate numbering of the houses therein, by enumerators' blocks, and so registering them for census purposes. I shudder when I think of the London areas, as set forth in a document recently published by Mr. Gomme for the County Council: still more when there rises before me the thought of the pitchy day that is being sorted for the Census Authorities by the Commissioners under the London Government Act of last year. Then, again, there is the nightmare of Penge, possibly other examples of nearly the same sort. In that singularly fortunate locality, Mr. Bumble, when he existed, would have served Lewisham in his capacity of parish beadle, have voted at Dulwich, as a citizen of Camberwell in London, have paid his court to the matron he affected, in the Croydon Union, and have been registered on his lamented decease, in the county of Surrey. All of which would have to be taken into account in different sections of the census tables.

To establish order in this chaos, to demarcate and partition the areas into such blocks that they can be successively fitted into all the different divisions which have to be recognised in the returns, to define the limits of each, and ensure an accurate knowledge of them by the enumerator, all this seems to me to be of itself an amply sufficient reason for giving a year's start to the preparations. In India, no doubt, we have difficulties more or less geographical to overcome, such as the long railway leads, entailing special arrangements for counting all night passengers; the hill tracts and great deserts, and the large coasting trade, the hordes of vagrants and the vast concourse of visitors at shrines and fairs, not to mention popular local weddings, where it is "kept up" all night and over, by the neighbourhood, which will not return home in time to be "censed." Troops on the march, again, give trouble to an enumerator, so do plague and cholera camps, and the like, and boats heavily laden with goods and people, which come swinging down the great rivers by night at the rate of seven or eight miles an hour, defying the police craft, and entailing telegraphy and bad language at the next halt. But all these episodes are such as can be coped with by foresight and pre-arrangement. The difficulty, too, arising out of the enormous population is not, as I think I stated in the discussion on Mr. Hooker's paper, by any means as formidable as might be expected from a mere comparison with the conditions under which the census is taken in this country. The Indian authorities have of course to provide a huge mass of schedules, and to have them and the instructions translated into sixteen or seventeen languages, but the work is decentralised, and, with the actuals of the last census

as a basis, fairly accurate indents, erring on the right side, can be sent to press long before the time of distribution. Towards the critical time, as may be anticipated, panics arise, and have to be stayed by supplementary indents. Then, again, the large army of enumerators requires special supplies of inkstands, with black ink for the preliminaries and red for the final process made over to them. It is the red ink that breeds trouble; a little matter, it may be thought, but, as I hope to show, an important one.

Owing to the general illiteracy and the incapacity of more than some two persons in a hundred to understand and correctly fill up their schedule, the Indian census authorities must provide agency prepared to make all the inquiries and fill in the information. Not to create invidious distinctions, it was prescribed that only Europeans and native gentlemen of high rank should have schedules left to be filled in independently. The city of Bombay was an exception to this rule, though in practice, the same course was pursued there as elsewhere in regard to the lower classes. It is obviously impossible for a man to go his round filling in an elaborate form with information gleaned from an unwilling and obtuse subject, unless the round be a very small one. The supply of enumerators being inadequate to subdivide the rounds, we had recourse to what I venture to characterise as the most excellent device of a "preliminary record," which has been described by Mr. Hooker. The population usually resident in the house was entered on the schedule some days before the census, so that in the night itself the enumerator had only to bring it up to date in accordance with the actual facts. This, for purposes of check, he did in red ink. The interval between the two operations was purposely kept as short as possible, and just served for the schedules to be reviewed by the supervising officer of the circle.

The question often arises as to the respective efficacy of the enumeration by outside agency and that by the householder in person. To any one who has gained experience in the matter it is simply a question of habit and temperament. In India there is no alternative. On the continent of Europe and in the States there is general uniformity, but no doubt the prevalence of official action to a very wide extent allows of domiciliary inquiries in some countries which would be resented elsewhere, and which would be impracticable in Great Britain. In Ireland, however, the matter has been hitherto left to a great extent in the hands of the constabulary, who, when not preventing the masses from "wading "through blood to the independence of their counthry," seem to form a popular and admirable body of enumerators. There is, however, a considerable difference between the two systems in the matter of results; nevertheless, for the sake of uniformity, the

sub-committee of the Society has suggested the assimilation of the practice in Ireland to that in this country. Setting on one side this last consideration, I doubt if the change will prove of much moment. While I am on the subject of Ireland, I cannot refrain from referring to the loss sustained by the statistical world by the death of our distinguished colleague, Dr. Grimshaw, who was for so long at the head of Irish registration, and in whose hands the census of that country attained so high a reputation.

Before passing from the question of the enumerating agency, I ought to add a few lines on the question of its efficiency, under whichever system it works. The Indian census authorities can rely, as I have just pointed out, upon a large nucleus of permanent village accountants and registrars accustomed to handle forms and figures. Then again the unusual ramifications of State agency in a half-developed country like India provide a further supply of more or less responsible subordinates whose services are fortunately made available for three days or so by the simple expedient of decreeing a public holiday for the census, and turning every official thus set at liberty on to a block as near as possible to his ordinary residence. There is thus comparatively little need of outside agents, and such as are wanted can be got, on payment of out-of-pocket expenses, for the distinction of flourishing round with pen and ink and two or three torch bearers and attendants. In place of the imperial medal that our colleague, Dr. Troinitski, found advisable in Russia, a mere paper certificate of good work satisfies the mild Hindu. In the larger cities, however, a staff of stipendiaries has to be called in, but many of these are of a class that can be utilised in the later operations. Thus in India we have the great advantage of not only an adaptable body of men, but of the opportunity of drilling them well beforehand in census detail, a point to which I attach the highest importance, and which indeed has been found an absolute necessity. Shortly before the preliminary record is set in hand, each supervisor personally conducts a gang of enumerators round a block near the office, with a batch of spare schedules for experiment on actual facts. At odd times again during office hours, enumerators *in posse*, who chance to be in attendance on other business, are told off to fill up a form or two for a few applicants, witnesses, or other bystanders; these are all examined and corrected before being thrown away. It really seems to me, speaking with all deference to my fellow countrymen, that by the above means we succeeded in getting a higher degree of efficiency than seems to have been attained, judging from the evidence presented before the Courtney Committee, amongst the casuals recruited for the English census. We have more hold over them, a longer time

wherein to test and drill them, and generally more docility and conscience. I admit the greater difficulty of the task entrusted to the English enumerator. I also am bound to recognise that the average inaccuracy of record, especially in regard to matters which allow of alternative answers, such as occupation, being greater when the schedule is left to the discretion of the absent-minded householder, the duty of correction in those circumstances is one requiring tact and delicacy of approach. I make this comparison because next, of course, to the accuracy of the actual numbering of the people, that of the descriptive details constitutes the touchstone of the value of the census. The intelligence and good will of the enumerated on the one hand, and of the enumerator on the other, are the links therefore in the census chain upon which the success of the operations depends.

Assuming that the arrangements for enumeration are complete, though this is a hypothesis which no census superintendent will accept until the day preceding the fateful night, there still remains the onerous and responsible task of organising the agency and system through which the results are to be converted into statistics. The whole scheme, like that of enumeration, has to be thought out and laid down in detail some time before it is required to be set in motion. The actual printing of the numerous sheets and forms, not to mention the labour of devising them, is a considerable burden upon the superintendent, since an adequate supply must be ready for use almost immediately after the census has been taken. The provision of competent agency, again, is no light duty, especially where the work of abstraction is centralised. Mechanical quickness and accuracy of eye suffice for the large proportion of the work into which no question of classification involving the use of discretion enters, and for which, accordingly, a system of independent working combined with arithmetical checks provided by the sheets themselves supplies all that is wanted. For all beyond these comparatively rudimentary results a superior class of intelligence must be enlisted, forming a sort of *corps d'élite*, working on rules directly supervised by responsible control from head-quarters. How far the work of abstraction can safely be decentralised is a question to be decided by local circumstances. Speaking generally, it depends entirely upon the supply of suitable clerks, combined with the equally important supply of efficient supervision. In any case, the final processes of classification and compilation must usually be concentrated into a small compass. In connection with this part of the subject an interesting question arises as to the extent to which the enumerating agency can advantageously be utilised in the further handling of the schedules. In this country their employ-

ment is carried further than in India, but not so far, I believe, as it was in Russia. It will be gathered, no doubt, from my account of the sources of the aid we get in India, that the services of men otherwise engaged in official posts can only be allotted to census work for a short period, and as to the outsiders engaged, the quality was not, as a rule, up to the standard of continuous clerical labour of the nature of abstraction. The whole staff, therefore, was not employed beyond the preliminary totalling, though in some provinces, as in the Punjab, a large proportion was drafted into local centres, and there undertook, with admirable results, the whole of the tabulation.

The preliminary totalling was a job on which I hope to be pardoned if I reflect with considerable complacency, not so much on account of the results themselves, but because it illustrates the value of a scheme well thought out beforehand, and therefore on the lines of least friction. The ten or fifteen block-enumerators in a circle betook themselves early on the morning after the enumeration to the headquarters of their supervisor, and, sitting around him, totalled the blocks by sexes, handing up the result pencilled on a small form provided for the purpose. Each block was then made over to another enumerator, who re-totalled independently. The results were compared, and if they corresponded, were inked in until all were entered. The circle was then totalled, and the slip sent off to the subdivisional centre. Here the slips were totalled for that area, and transmitted to the district centre, where the process was completed for the provincial unit, and the result telegraphed to me and to the provincial superintendent simultaneously. As soon as the province was ready we compared notes. I should add that the large towns were dealt with on exactly the same principle, though by different areas. By the end of ten days I had the totals of two provinces, one of 46, the other of 18, millions, in my office, and within five weeks I was able to telegraph to the Secretary of State a complete figure, which differed from the final of over 287 millions by less than $\frac{1}{2}$ per cent. I ought to add that, apart from natural anxiety on my own part to see the general result, our efforts had been stimulated by a suggestion from this country that the preliminary results would be gratefully received by the census authorities then located in their corrugated iron palace in the shadow of the India Office.

Reverting to the general question of tabulation, I may add a line or two upon the machinery most suited to the almost mechanical processes with which the operations begin. Our sub-committee has recommended the omission from the coming Census Bill of the prescription of copying the schedules into enumeration books. That this practice has considerable advantages no one who

has had to handle the schedules will deny. On the other hand, it is equally within experience that, as most of the tables are based upon combinations of facts not drawn direct from each column of the schedule independently, the physical and mental strain and the chance of error are diminished by some preliminary process of analysis, such as is made possible by the collection of the schedule entries for each individual on to a separate card. Simple combinations are thus materially facilitated, whilst the more complex, in which the probability of error in using a much-subdivided abstraction-sheet is obviously very high, are brought down to a far more manageable level. In these circumstances, it seems obvious that a matter entirely dependent upon technical convenience should be left to the experience and discretion of the authorities in charge of the operations. One point in connection with the use of cards occurs to me, and this is, that the utmost care has to be taken in keeping the card-bundles complete for each block or other unit of tabulation, a difficulty from which the book-system is exempt.

Then, again, there is the question of the use of machinery, such as Mr. Hollerith's electric tabulator. We had the working of this ingenious instrument explained to us by the inventor some years ago, and it has been tested by wide employment in the States and in several important statistical offices in Europe. At the last International Statistical Congress illustrations of its utility, especially in the combination of several columns of the schedule, and in compiling railway traffic statistics from Russia and Austria, were given us. In the face of such evidence it would be ungrateful not to recognise the value of the machine. At the same time, there seem to me, perhaps wrongly, two chances of error, of which one, at least, can not be eliminated by mechanical contrivance. In the first place, the whole operation is dependent upon the punching of the cards used, and unless this be subjected to continuous test, either by re-doing or some other method, an initial error is established which vitiates the subsequent record throughout. Again, it has been stated to me that in feeding the machine very quickly there is the chance of missing connection in the current. Altogether, the machine, though evidently worth trying, is by no means infallible, and where clerical labour is cheap, I confess my personal preference for the "soaring human "boy," provided, of course, that the amount of supervision is such as will prevent his thoughts from straying into the fields of original research in his compilation, the latter not being a class of work which stimulates enthusiasm. This observation applies more especially to work in which various items have to be grouped under general heads, or brought into some other scheme of

classification. In this country the occupation column is the only one that needs special treatment. In India, unfortunately, religions, languages, and above all, castes, have to be added.

As an indication of the distinction between this class of tabulation and the rest, I may quote my own experience. I received from my provincial superintendents within between five and ten months of the census the whole series of what may be called the primary tables, including those of religions and languages, but the returns of occupation and caste were in several cases more than a year, and in one case more than eighteen months behind them, the cost of preparation being, of course, in proportion. And here I may remark in passing, that while in this country the cost of enumeration is the more serious consideration, in India it is the cost of working up the results that we have to take into account, this being the point in which the enormous population to be dealt with, as well as its complexity, overloads the census budget of the second year of operations. Here it seems one of the main causes of expense in tabulation is the great number of different areas for which totals of various returns have had to be prepared, and even now there is a not unreasonable demand for greater detail, geographically speaking, in regard to occupations. In India this would be met in the manner proposed by one of our numerous census sub-committees, by ascertaining beforehand the detail required by the local authority, and having it taken out, if not beyond the scope of the general operations, at the cost of the Oliver who has asked for more. The large supplementary volumes included in the reports of the more populous provinces indicate the need of this information. I can only hope that as regards London, at all events, the authorities will see their way to give opportunities for special tabulation of this sort, provided, of course, that the progress of the general operations is in no way impeded by the concession, and that the salutary rule of secrecy as to individual entries is duly enforced.

There are many other interesting and important topics connected with the taking of a census on which I might comment, but which are superfluous when the object is to give a general view of the difficulty and complexity of the task, and of the curiously varied administrative aspects of apparently so simple a process. I pass on, therefore, to what is more likely to commend itself to the majority of the members of our Society, the nature of the information which can be obtained through the medium of a census. Here I enter upon the chapter of limitations.

I have already remarked that the weak link in the census chain is the householder in this country, and the enumerator in India, and wherever the work is done by official agency; it follows

then that the first limitation imposed upon the census is that the information asked for should be no more than the person of whom it is asked may be reasonably assumed to be willing and competent to give. The second is, that at a synchronous inquiry, such as those I have been considering, no information should be sought which can possibly be obtained by other means. The census is, after all, but a rough-and-ready method of inquiry, its main object being to get a photograph of the population in some of its most general aspects at a given moment. If it be extended over several days, there is the probability that, whatever the precautions taken, a considerable number of individuals, especially in the busy life of Europe and the States, will be counted twice or even oftener, and in places far from each other. The shorter and simpler the schedule, therefore, the greater the chance of complete record. The enumeration of houses and rooms, and so on, being intimately and directly connected with that of the population inhabiting them at the time in question, is a fair addition to the return. The area and tenure of land, the number of cattle, the capital and staff of industrial undertakings, and the like, appear to lie outside the scope of the inquiry, and, as in America, should be relegated to subsidiary forms, filled in at greater leisure than is afforded by the hasty visit on the morning following the census. All of them, no doubt, must ultimately be correlated with the latter, but the same may be said of half the annual returns of the State.

I now return to the question of the personal equation of the householder, in which the leading factors are prejudice and ignorance. The latter, in relation to the object and methods of the census, accounts for the greater part of the former, leaving but a small residuum of reasoned mistrust and suspicion. Positive ignorance, or incapacity to grasp the meaning of the schedule heads and instructions, is an altogether different matter. The prejudice against the census which Dr. Longstaff has shown us prevailed in this country at the end of last century, has long since died out, at least in the virulent form which led an opponent of the measure to deem it incredible that any one could be found so presumptuous and abandoned as to initiate the proposal, which, again, was stigmatised as totally subversive of English liberty, &c., &c., terms which in our day are exclusively reserved, I believe, for proposals regarding denominational education. Nor, moreover, will the present Home Secretary think it worth his while to quote, as did his ancestor, a general expectation in Newcastle that the enumeration would be followed by dire pestilence and other misfortunes. In India, except among the wildest tribes, there has been a marked softening of public opinion even within my own recollection. Rumours, of course, there are, and always will be,

as to the cryptic but probably malignant intentions of the Government of making the census an approach to the pockets of the lieges, but the only well-founded prejudice I can call to mind is with reference to recording names and ages of the young women of the household among certain high classes, with whom domestic privacy is a matter of social honour. Our rules, of course, take this into consideration. Nevertheless, the formal asseveration that no use is made of the return of individuals, but only of the community in the mass, is not, any more than in Europe, quite sufficient guarantee. There is a suspicion in some continental countries that ages are connected with military service rosters, and that the return of business details is collated with that of the property tax. Even in England, minute details as to employment savours to the British workman of "poll-prying," whilst among the fair sex there is said to be a still extant prejudice against a too scrupulous handling of the truth in the matter of ages.

But perhaps the only real prejudice that remains relates to a question which has grown to be one of practical administration, and probably for this very reason the feeling has increased in strength. I refer, of course, to the return of religious denomination. This item has been for some time a feature in the Irish schedule, and though in 1891 the return was made optional, events showed that in a very small number of instances was the information withheld. It has been frequently suggested by this Society and by other authorities that the return would be useful in this country also, but Mr. Courtney's Committee of 1890 reported that though from a statistical point of view the information was desirable, the Committee, mainly for political reasons, found themselves not in a position to make any recommendation regarding it. Judging from what has since taken place, it seems as if the political opposition to giving a precise statistical form to what is now a matter of vague controversy, is increasing with the use that might be made of that information in solving admitted administrative difficulties. In few other countries does this objection exist, and in several the return, combined with a few other social facts, is evidently of considerable practical value. In India, where the great distinctions of creed are similarly of administrative moment, there is fortunately no prejudice against the return. On the contrary, I have often found a certain pride in nonconformity with a vulgar orthodoxy; while in certain towns in the north, where several forms of faith are at constant variance, occasionally finding vent in violent outbreaks, the representation on municipal bodies has been fixed, not by locality, but by creed. I am not in a position to set forth what may be the sentiments of the unorthodox in the south-east of Russia, but as the official

attitude towards the "come-outer" in those parts is, to put it mildly, discouraging, the return is likely to err on the side of understatement. Our colleague President Troinitski has not as yet, however, got beyond the letter A in the publication of his results, and Archangel and the Amur provinces are the only volumes we have had the opportunity of perusing. It occurs to me, also, in connection with the prejudice that may warp a census return from the strict truth, that the controversy as regards the return of language in Wales on the last occasion may have its counterpart in other countries where nationality has entered into an acutely political phase; especially if a less developed tongue be in danger of obliteration by one more suited to modern requirements, and has to rely for its literary support upon the products of the past, or the factitious and artificial use of it in the present day for the purpose of emphasising distinctions that are tending towards elimination.

As to the ignorance that either cannot appreciate what is wanted in the return, or does not possess the information, all that need be said is that "custom cannot stale its infinite variety." It crops up in the most unexpected way and from the least expected quarters. It may take the form, as in the record of age and occupation, of a tendency to generalise, favouring multiples of five in the one, and wide or comprehensive terms in the other. Or, again, it may enter into minute details which equally obscure the real fact, as where a village only is entered as the place of birth, or, in India, a purely local and colloquial title of a language, or, further, a qualifying and generally deprecatory remark against an entry of an infirmity. There are other notorious pitfalls in the path of the census, but those I have quoted are enough to illustrate my point, namely, the serious limitation which ignorance and prejudice place upon the scope of the inquiry as it is conducted here and in our colonies and dependencies.

Some people seem to think that you have only to ask a question on the schedule, and you will get the information. I doubt if you will even get an answer to any but the simplest in a sufficient proportion of cases to make the return of any good. I was myself asked by an enthusiastic champion of total abstinence to add a column at the end of the schedule (after or with infirmities), to the following effect:—"Are you in favour of the total prohibition "of the sale of intoxicating liquors? answer yes or no." A few weeks ago, too, I noticed in an evening paper the suggestion that four questions should be added to the British schedule, relating to one's proficiency as a shot or horseman, also that of one's male offspring. These suggestions manifest almost as optimistic a confidence in the plebiscite as M. Paul Deroulede professes. There is

no room for opinion in a properly drawn schedule, though unfortunately it has a tendency to intrude in a few particulars, and the question is how, in Mr. Kruger's classical phrase, to "damp "the trek."

Of the three main divisions into which the usual subjects for inquiry fall, vital, industrial, and economic statistics, the first named invariably yields the best results in point of accuracy, since the questions involved take into account none but immediately personal considerations. Setting aside house accommodation as partly recorded on the responsibility of the enumerator, we may consider sex, age, and civil condition as the primary facts to be ascertained, and on these rest our whole superstructure of vital returns. The addition of infirmities, to the extent adopted in this country and in India, is more a concession to precedent than evidence of absolute facts, since the results are used chiefly for comparison with those collected on the previous occasion, on the assumption that the inaccuracy is about the same in scope and character in both cases. The enumeration of those incapacitated temporarily by illness, carried out in Ireland, does not seem worth the trouble, although logically connected with a return of the occupied. Birthplace, too, especially in combination with age, has its place in sanitary analysis, but, on the whole, it may be considered to be rather of the economic class, as indicating migration. Unfortunately it is not infrequently mixed up with nationality, and this, however suitable for inquiry from an ethnic standpoint, has a background of political status about it which marks it suspect. Our sub-committee, however, have suggested an extension of the instructions which materially widens the scope of the results, though it fails to meet all the defects specified in the last census report.

In some enumerations a place is found for the record of the ability or otherwise to read and write more than one's own name. We adopted this course in India, with the somewhat unfortunate addition, as it turned out, of those under instruction. In this country there is no requisition for this fact, though in Ireland it is recorded and supplemented by subsidiary inquiry. The objection is the great probability of over-statement of the literate, especially among the elders, who will not acknowledge themselves in default before the rising generation. I agree with Dr. Longstaff that the information would be interesting if it could be obtained with approximate accuracy, but the contingency is remote.

Passing over social grades, which bulk largely in the Russian tables, and caste, which may be left to my successor in India, as it cannot be reproduced in a statistical form elsewhere, and

language, which is here only a bone of contention in parts of the Celtic fringe, I reach the main battlefield of the schedule, the question of occupation or means of subsistence. The leading point which the schedule-framer has to consider is whether the aim is simply industrial or also economic. Are only those who work or enjoy an income to be returned, or is the supporting power of the occupation or income to be recorded, and those who do not work or have no independent income be relegated, under the heading of dependent, to the occupation of the person who supports them. The elaborate attempts in 1891 to get a return of employers and employed by means of separate columns, to be filled by crosses (in ominous resemblance to a polling card), turned out so far a failure that no comment was made upon the results in the official report. The abuse of vague terms in filling up the occupation column has been already referred to by me, and, on the whole, the results justify the decision of Dr. Ogle, that detailed information as to the industrial organisation of the country cannot be obtained by the machinery of an ordinary census. My experience on the two last occasions in India has brought me to the same conclusion. It is on very broad lines only that the census can deal with this intricate subject. It may, however, form the base of further inquiries by subsidiary methods such as those followed with success by our colleagues, Miss Collet and Mr. Charles Booth, but the raw material contains but little ore for direct manipulation. I say nothing here on the still more controversial subject of classification, at which all of us who have had a hand in census taking have had their fling, I myself having been a frequent and vigorous offender. It is not the method of classifying alone, however, that is responsible for one of the most annoying defects in the results, namely, the want of distinction between maker and seller; nor, indeed, is it always the original record that is in fault, but the confusion of the two functions is an actual fact, and in the Indian census work we have had to recognise this, since it is one of the main features of the rural economy of the country. Then, too, the troublesome person with several means of subsistence, who will not record his view of their respective importance to his domestic economy, has yet to be satisfactorily tackled. This problem was simplified in India by only recognising occupations combined with agriculture, the enormous predominance of that mode of livelihood justifying the selection. This would not, of course, be the case in Europe.

I have now reached the end, I hope, of the list of questions that appear to me to be suitable for a strictly synchronous enumeration, and I have set forth, so far as my experience extends, the means which seem best adapted to getting them answered

correctly. The use to be made of them when garnered does not fall within the scope of my present subject, and, in any case, I should have awaited the final report of our sub-committee before expressing my own views on this matter. There is one collateral point, however, which I am reluctant to leave altogether unmentioned, and that is our persistently reiterated request for a quinquennial census. In our representations we have with us the leading actuarial associations, and that important body of energetic enthusiasts, the medical officers of health. Census after census has shown the inadequacy, in the case of small populations, of the most careful estimates and computations after the first two or three years of the decennial interval. I do not think our Society has ever pressed for an enumeration in the same detail as that required every ten years, but the minimum of sex and age would serve the purposes of stock taking, as Sir Edwin Chadwick used to call it; and the only addition which I have ever suggested, and then only tentatively, is that of birthplace, as a test of the drift of population to the towns, if such drift there be. I have never, moreover, advocated the intermediate enumeration of India, where progress is comparatively slow and regular, except when, as in the present intercensal period, famine has been unprecedently prevalent. Nor, again, does there appear sufficient reason for so frequent enumeration in the States, where vast stretches of country have still to be filled up. But here, as I say, experience shows us constant ferment, shifting of local centres of gravity in the population and changes in life values, all needing the definition afforded only by the simple enumeration I have specified. The obstacle, we recognise, is at present a serious one, more serious, indeed, than in 1890, when Lord Welby sate at the Treasury and cast forth his ice like morsels on us. Five years hence, however, the prospect may be more rosy, and hope springs eternal in the persistent breast of a scientific body.

A further topic, not far apart from the above, is the possibility of establishing a permanent census staff, since a general statistical office seems an ideal which is not likely to commend itself to our rulers, and the masses of valuable statistics that issue periodically from various sources must go un-coordinated to the end of time, except when some energetic Fellow of this Society takes off his coat to grapple with some special phase of statistical life, and gives us the result.

I have considered the census question as more or less a national one, using India only for illustration, and omitting reference to the question of international comparison, with which I dealt in the *Journal* of June, 1898. At the last Statistical Congress, however, I had the opportunity of crossing swords

again with our optimistic friend, Dr. Körösi, on his pet subject, and retired impenitent and unconvinced, even though several of our colleagues of repute declaimed against the ultra-conservatism of our statists, who, with the American census authorities constitute, I was told, the *bêtes noires* of science. Our conservatism, I gather, consists in the habit of looking first to the foundation, and only when we are satisfied with it do we launch into the showy superstructure on which the attention of too many of our continental fellow-workers is concentrated. At the same time it certainly can be brought against us that we have never yet worked up a general compilation of the results of the census in its various branches for the empire as a whole, reviewing the differences of the climatic and political sections, and bringing home to us another aspect of the Greater Britain of which the majority of us—I wish I could say all—are so proud.

Discussion *on* Mr. Baines's Paper.

The Chairman (Mr. L. C. Probyn) said he was not at all an expert on census matters, but he had some knowledge of India and could assure them that the task which Mr. Baines performed in India with such great success was a very heavy one. Mr. Baines had himself pointed out some of the difficulties which beset him, but had not dwelt on the wisdom with which he overcame them. It was not too much to say that if a census in India were not well managed it might be a source of great political danger, arousing distrust and suspicion among a people who were naturally distrustful and suspicious. So far as he knew, there had been nothing of that kind, and he believed that that fact was greatly due to the excellent men, amongst whom was Mr. Baines, who had been charged with the duty of carrying on the census. Though the paper did not, as the Society's papers generally did, bristle with statistics, it conveyed a lesson on what was, he thought, one of the most important branches of statistical knowledge, namely, the statistics of population. It came, too, from a man who had had such great experience of a country whose population was nearly eight times as large as the population of the British Isles, and, in fact, one-fifth of the whole population of the world.

Sir Robert Giffen said he was very much in agreement with Mr. Baines, and for that reason had not many remarks to make. He wished, however, to express to him the thanks of those present for the admirable paper which he had given them. The Society was much indebted to Mr. Baines for his services generally, partly as Honorary Secretary, and in other ways, and not least was it

indebted to him for the various papers which he had contributed to the proceedings of the Society, and amongst which the present would occupy a good place. This paper was full of information at first hand, for Mr. Baines spoke both from intimate experience in the actual taking of a census, and from long continued inquiries and study of census proceedings in different countries. The paper would consequently enlighten a great many students of statistics as to what a census means, how it is obtained, and how its results can be worked up and made use of. He desired especially to express agreement with what Mr. Baines had said as to the limitations of a census. He had had experience like Mr. Baines of the enthusiasm of their continental friends and others. Apparently the opinion was common among many statisticians, that one had simply to put questions in order to get answers as a matter of course. But the longer they had experience of statistical inquiries, the more convinced they were that nothing was more difficult in such inquiries than to prepare and select the proper questions to be put so as to obtain the information desired, and to consider the nature and capacities of the people from whom the answers were expected. When the answers were obtained, much work was still left for those who conducted the inquiry, in the way of comparing and sifting the answers so as to bring out the facts which were sought. In a census the questions had to be put to innumerable individuals, multitudes of them unfamiliar with the filling up of forms and schedules, and this was a final reason why too much should not be attempted, looking at all the difficulties of even the simplest inquiry. He would also like to express agreement with Mr. Baines in what he had said as to the need of special inquiries in the matter of occupations, and in favour of not attempting to do much regarding occupations in an ordinary census. It was quite right to have some sort of count of occupations when taking an ordinary census as to age and sex and civil condition of individuals, but it was not possible to take an elaborate industrial census, such as many people desired, along with an ordinary census. If they were going to make an elaborate inquiry as to industrial occupations, that could only be done by a separate proceeding quite outside the ordinary census and conducted by a different staff. The work here was extremely difficult, and rendered necessary a great deal of local knowledge and information, while too much, after all, must not be expected from the results. From what he had seen of censuses of industrial occupations in other countries, and the great expense that had been incurred, he was not sure that the results repaid the cost, but whether that was the case or not, there could be no question of the danger of mixing up the work with that of an ordinary census, which was essential and indispensable to every civilised community. Another point where he was cordially in agreement with Mr. Baines, and where the Society had frequently expressed itself in the same sense, was in regard to the expediency of a quinquennial census. On economic grounds he was by no means in favour of having a census too frequently, although there were abundant reasons why they might have a count of numbers

even in every year in certain localities. At the same time, for many purposes a census at distant intervals was all that was required, and the point was, that the objects to be attained should be carefully considered in fixing the intervals. When this was done, it was found that for such purposes, for instance, as health inquiries, in a country like England, where some localities changed their population in numbers and constitution in a very few years, there was great reason for a local census at least every five years. Otherwise in many cases they would have no sufficient data on which to calculate the percentages, and on which to ascertain what ought to be done in the way of administration. A quinquennial census was not perhaps so absolutely necessary for the country as a whole, because the numbers of the population could be calculated by reckoning the births and deaths from the last census, and allowing for emigration and immigration, but that did not give the local figures, which were so necessary for many purposes. For these they must depend upon a quinquennial census. The Government and Parliament as yet had shown an insufficient sense of the importance of this matter, but, as Mr. Baines had said, they must not be discouraged, and should continue to press their views. This led him to remark on another great defect in our census arrangements exhibited at the present time. We were now within twelve months of the new census, or very nearly so, yet there was no legal power in existence by which that census was being prepared for and arranged. Legally no preparations had been made for it. That was the state of things, which surely ought to be remedied in a great civilised country. If subjects of legislation were estimated at their due weight, surely this subject of the census would not be left uncared for, not merely till the eleventh hour, but almost to the last minute of the eleventh hour, when the work must be undertaken. This defect was connected with yet another defect of a very serious character in the census arrangements, namely, the want of a permanent census office. The census was an institution that had come to stay, and it ought to be provided for by a permanent census law, administered by a permanent census office. Surely it was ridiculous that there should be a permanent office in existence for taking what he might call an agricultural census, the count of the acreage under different crops, and the count of our cattle, sheep, and horses, and that there should be another permanent office for trade statistics, statistics of imports and exports and the like, from which they had returns not merely annually, but every month, and almost every week, and yet that there should be no permanent office for managing the important business of counting the numbers of the people. It was not as if really new arrangements were required to be made at the time of each census; the arrangements at such times must be and were substantially the same. If there were such a permanent office as he suggested, the preparations for taking the census could be begun in proper time with due legal authority, and there would also be time to make those studies of the subject by which the utility of the census itself would be very much enhanced. After the first results of the census were published,

the office would have ample leisure for making special inquiries and looking into many matters which were now passed over, and of which the material which had been accumulated was left undigested and unused. He would emphasise the need, therefore, for such an office, and he trusted before long that such an office would be established, with a permanent census law, so as to make it quite unnecessary to have a new enactment every ten years. In conclusion, he would again renew his thanks to Mr. Baines for his paper.

Mr. A. H. BAILEY entirely concurred in what Sir Robert Giffen had said as to the value of the paper, which divided itself into two parts, one dealing with the machinery for collecting material, and the other with the material itself. The former part, which had been most elaborately dealt with by Mr. Baines, was, he thought, outside the province of the Society. He agreed as to the importance of a quinquennial census for certain purposes, and was sorry to hear that the Bill introduced into the House of Commons the previous evening contained no provision whatever for it. One of the uses he had himself made of the census was for the comparison of vital statistics. Every week there was published in the newspapers what was called the rate of mortality in the large towns comprising upwards of 100,000 inhabitants, but the deductions from them were likely to be misleading in several cases. The number of deaths was no doubt recorded accurately enough, but the population was computed on the assumption that the rate of increase in one decennial period was the same as that in the previous one. This was by no means the case. Take for instance the suburbs of London and many seaside watering places. These had grown in a very remarkable manner and to an extent quite out of proportion to that of the main population. In respect of such matters as numbers, age, and sex, a quinquennial return would involve a comparatively small expense. The chief concern of the Society at the moment was the forthcoming census of Great Britain and Ireland. He quite agreed with what Sir Robert Giffen had said about occupation, and it would be a total mistake to attempt to do too much, but he thought that the description of occupation should be of some value. One matter which was particularly required was to distinguish between employer and employee, as for instance amongst builders, but it would be, in his opinion, impracticable to distinguish between skilled and unskilled labour. There should also be some clear understanding of the distinction between wholesale and retail pursuits. The term merchant, for instance, had a very different meaning in the city of London from what it had in the city of Edinburgh, where it was really the keeper of a small grocer's shop, the owner calling himself merchant, after the French "marchand." With regard to the census of religions, he thought if that could be included it would be very valuable indeed, even if the filling up of the column were allowed to be optional. He could not understand why people should object to it. The question as to the ages of the ladies was as old as the hills, and he was afraid that for obvious reasons it would never be rightly answered.

Mr. WILLIAM BUCHANAN (Registrar of the Kelvin District of Glasgow) said that the suggestions made in the paper had given them all much food for thought. Mr. Grime, who accompanied him, was Chairman of the Joint Census Committee of the Associated Registrars of Britain, and he himself had the honour of being the Honorary Secretary. In endeavouring to ascertain what hopes there might be for a better census this time, he was told by a member of Parliament who had been in close touch with the Treasury, that there was scarcely any hope of a more reasonable grant from that Department; the only hope was in the Statistical Society, and, if there was any improvement in the new census Bill, that would be due to its influence. His colleague and himself differed from most of the gentlemen present, inasmuch as they were actual census workers, and had quite a different experience from those who simply studied the results. If statisticians generally had more to do with the actual working of the census, he was sure they would have far more sympathy with all who had to tabulate and get up the statistics. There was first of all the trouble of getting together 40,000 odd men who, Micawber like, were always waiting for "something to turn up," and who, probably, were not in situations because they did not deserve to be. The difficulty was as to these men. Government wished as enumerators men of exceptional character, but would not give the necessary grant. Amongst the qualities required of enumerators was certainly courage. He gave several instances where personal violence had been offered to them. The difficulties of census taking were aggravated by the complexity of the areas, more particularly in England. Another drawback common to both countries was the want of a popular definition for the term "house." If a working man were asked, he would say that the room he paid for was his house or his castle, irrespective of its size, and irrespective of whether he entered from a front door or from a common stair, or from a lobby common to a dozen apartments. He was told that the Scotch medical officers of health had been discussing this point at a recent meeting, and they had found it far from easy. The difficulty of definition here was very great, especially if a word had to be used that would apply to both England and Scotland, and so allow of a national comparison. Some persons wanted to include in the census things which it was impossible to ascertain on anything like the present grant. One member of the General Medical Council had told him he wished most to know the amount of air space in each house and round each block, so as to get data regarding the breathing space allowed to each person. Such facts it would be next to impossible to get out of a national census.

Dr. R. DUDFIELD observed that the subject of census taking was looked at from many points of view, and that what the Government had to do was, if possible, to effect a compromise, which, while perhaps not pleasing all, would satisfy most statisticians. As a medical officer of health, he would like to

know at least the number of people living in every street in his parish or district, but he was afraid that was information which the census authorities would not give. Referring to the great confusion of areas now existing, he mentioned that he had recently had lent to him a reprint of a paper by Mr. Arthur Francis Burridge, of the Equity and Law Life Assurance Society. The list of districts tabulated by Mr. Burridge for which the Census (1881) returns had to be tabulated was simply appalling; beginning with "England and Wales," then "England" and "Wales" separately, "North Wales," "South Wales," 52 counties, 198 Parliamentary boroughs, 14,926 civil parishes, 9,107 separate constituent parts of ecclesiastical parishes, 6,958 ecclesiastical parishes and 2,175 registration sub-districts, not to mention many other areas of less importance. Then came divisions more important from the medical officer's point of view. These included 966 urban sanitary districts, 578 rural sanitary districts, and, in addition, 184 metropolitan areas. This confusion was unfortunate in two respects: it greatly increased the labour of tabulation and, he thought, the cost of the census. It ought to be possible to arrive at a unit of tabulation. The unit that he personally should like to see adopted was either the sanitary inspector's district, or at all events the wards of the sanitary area. If from that unit it were possible to gradually step up to the whole country, the work of the census would be greatly facilitated. He was afraid that was an ideal to which it was almost hopeless to attain, but there was a possibility at the present moment of simplifying one part of the country. The Local Government Act of 1899, which would transform the municipal life of London, afforded an opportunity for effecting a considerable simplification in the metropolis. He mentioned the village of Penge as probably the worst example of the existing confusion of areas. He believed that the Government had determined to give effect to the decisions of the Commissioners appointed under the Act of 1899 by a special Bill instead of by Orders in Council. This might afford an opportunity for securing a proper adjustment of the poor law districts, so as to make them coincide with municipal areas, and it might further be possible to secure the readjustment of registration sub-districts and districts, so as to make them coterminous with the municipal sanitary districts. Then there would only remain the parliamentary areas and ecclesiastical parishes. The former would have to be dealt with hereafter in a redistribution Bill. The survival of the ecclesiastical parishes seemed to be of no real utility. He would like to see that Society, in conjunction with other societies such as the Society of Medical Officers of Health, urging the Government to take steps to round off the poor law and registration districts so as to make them coincide with the municipal areas. Accuracy in stating ages could only be reached through the good sense of the population. All they could do was to insist on the national importance of the information, and explain that it would be treated as absolutely confidential. One point which greatly affected the interest of actuaries in the census report was the

custom, which he believed prevailed at Somerset House, of justifying the returns by correcting entries from one column into another. The actuaries, with a view to the improvement of the quality of the statistics collected, insisted that the census returns ought to be published exactly as they were collected from the enumerators. He agreed that the scale of remuneration of the enumerators required revision, but feared that the present was not an opportune time to ask Government to sanction increased expenditure. Mr. Baines also mentioned particularly the question of the training of enumerators. He (Dr. Dudfield) desired to call attention to a paper by Mr. Meriam, published in the January number of the "North American Review," which gave details as to the training of the staff employed by the United States for this work. The United States in this matter set an example upon which we might well try to improve. He dwelt upon the advantages of the card system, and cited his own experience to show that the danger of loss of cards was not sufficient to outweigh the undoubted advantages of the system. The card system was immensely useful and facilitated work greatly. Of course for census purposes there would be a question of distinguishing the various batches of cards, which would to a certain extent help classification. It had occurred to him that it would be possible to do that by cutting away the sides of the cards in various patterns. He was himself about to put this suggestion to a practical test. The London Medical Officers of Health had been especially badly served in the last census. In the provinces each township of 50,000 inhabitants had the honour of having a complete table of the occupations of the inhabitants, but in London, where the populations of the constituent districts varied from 120,000 to 180,000, they were tabulated in five groups of districts, north, south, east, west, and central. Paddington had a population of 118,000 at the last census, but no returns were available of the occupations of the inhabitants. He understood that it was not intended to perpetuate this blunder. Medical officers of health were interested in the census of occupations, but he personally inclined to the view that the occupation census should be taken apart. The value of the information as to the number of rooms in the dwelling house was minimised by the fact that nothing was said as to the size of the rooms, consequently a standard of overcrowding of more than two persons per room meant nothing. He thought a certain amount of information as to the housing of the people might be obtained from the landlords. The need for a quinquennial census was emphasised by the many cases of serious error which had arisen during the last decennium. Another source of error was no doubt due, especially in high class residential districts like South Kensington and South Paddington, to the fact that the last census was taken immediately after Easter. In South Paddington, according to the census returns, the population had decreased in the interval between 1881 and 1891 at the rate of 364 per annum. At the intermediate census of 1896, taken practically at the same time of the year but before Easter, the enumerated population, instead of showing a decrease

of 364 per annum, showed one of only 35 (for the five years 1891-96). He believed, therefore, that at the census of 1891 the population of South Paddington was considerably under-estimated. In conclusion, he stated that there was a reference in the last report of the Society dealing with the census of 1901, which he would like to have cleared up, touching the definition of "story" and "tenement." The reference, which he presumed was to the Act of 1890, mentioned a definition in "Section 3." Section 3 of the Act of 1890 did not contain any such definition. Presumably the reference to "Section 3," and another to "Section 5" in the succeeding paragraph of the Committee's Report should read "Sub-section 3" and "Sub-section 5" of the 5th Section.

Mr. NOEL A. HUMPHREYS remarked that statisticians were often accused of being more anxious to pile up figures than to assure themselves that their figures really represented facts. This tendency had a direct bearing upon the subject of census statistics now under discussion. He congratulated Mr. Baines on having had the courage to bring forward his views, in which he himself almost entirely concurred, as to the distinct limitations of a successful census. These limitations, of course, depended very much on the conditions under which the census was taken. The census in England was an attempt to count the population on a single night, and all the questions submitted in the schedule had to be answered by householders or occupiers, of whom a very large proportion were only half educated. The questions should, therefore, not only be limited in number, but should be of such a character that the average householder would be able, without much difficulty, to answer them correctly. Secondly, it was obviously necessary not to include any questions to which there might be a temptation to give a false answer. He would like to point out that it was not only the statistician who was at fault in trying to break through these limitations; the politician also yielded to the same temptation. At the time when the last census was being discussed, the questions relating to the language spoken in Wales and Monmouthshire were introduced on political considerations, and the natural result followed. Previous to the census, in many districts there was a systematic appeal to the patriotism of Welshmen, asking them to use the census as a means of declaring and proving their nationality. Consequently the figures when tabulated and published were obviously and entirely untrustworthy. In many cases that were investigated, people who habitually used the English language in their shops and market places, and who even preached in English, returned themselves as only speaking Welsh! This was but the natural result of bringing into the census, under the conditions which govern an English census, questions which invited false answers. He sincerely hoped that this experiment would not be repeated, and that no proposal would ever be seriously made to use the census in connection with any proposed scheme of old age pensions, for collecting information as to the amount and sources of income of the aged poor, or of their connection with

Poor Law relief. As to an intermediate census, he felt very strongly with Mr. Baines and Sir Robert Giffen the urgent need for the necessary provisions in the Census Act for a simple enumeration in 1906, dealing with population, sex, and age. This was the fourth time that a representation upon this subject had been made to the Government by this Society, three times without result, and he could not agree with the reader of the paper in his optimistic opinion that the proposal was likely to be more successful if again pressed in five years time. It seemed to him that if they failed now to secure provision for an intermediate census in the present Census Bill, it would be at least ten years before the question could again be brought forward with any chance of success. He hoped, therefore, that the Society would use all the influence it possessed—and he thought that the Society might claim great influence on such a point—in conjunction with county councils and other local authorities in urban and rural districts, including medical officers of health, to convince the House of Commons and the Government that an intermediate census was of real and vital public interest. He thought that if the Government could be convinced that there was a genuine demand for a quinquennial census, there was some chance that the necessary provision might be added to the Bill, even though it had not yet found a place therein. All who recognised the undoubtedly beneficial effect upon public health progress due to the national system of vital statistics inaugurated by their former distinguished president, Dr. William Farr, would also recognise that the value of statistics depended upon the accuracy of the basis upon which those statistics were tabulated; and looking forward they must acknowledge that without a trustworthy population basis they could not hope for the continuance of that satisfactory rate of progress which had prevailed during the past sixty years. One point in favour of this proposed addition to the Census Bill at the present time was that the provision for a simple census in 1906 would lead to no additional expense for five years. Moreover, the proposed simple intermediate census, judging from the cost of the London census in 1896, would probably not cost more than 60,000*l.* for the whole of England and Wales. That surely was not a large sum to set against the improvement in the value of the costly statistics published weekly, quarterly, and annually by the Registrar-General, to say nothing of the local statistics issued by medical officers of health throughout England and Wales.

Mr. Laurence Gomme said it appeared to him from the paper they had just heard that poor statisticians, who required so much, were met with the initial difficulty that the information they wanted could not in all cases be accurately obtained. Admitting that there was a great deal in the point, he thought that that difficulty might be minimised by the method of marking the results. He divided the census into two categories: there was the purely census information, which they were entitled to consider as being entirely and absolutely accurate, and there was what he might call the indicative information, which might not be accurate in

detail and which required to be supplemented. We were accustomed to do things in this country in a way which not only increased expenses, but was actually calculated to hinder the attainment of the full objects sought. To take the census, it created all sorts of curious things. It created a registration county and all sorts of other units, but it did not give what Dr. Dudfield had alluded to, namely, an initial "locus." There was a unit called, he believed, a "sub-registration district," whereas the old English word "tithing" would, he thought, be more appropriate. But if they had a sufficiently small unit to begin with, thoroughly well identified on our maps, the adding of the units together, in order to get the larger units of the country, would answer all practical purposes of statistics. With regard to what he had ventured to call indicative results, even if they did not get complete accuracy, if the imperial statistics were laid open to the localities, these latter would be enabled to supplement the information in any direction where it was faulty. But after the statistics had once been tabulated by the imperial authorities they were practically buried. After going to the expense of an enormous organisation for the purpose of creating a census, it seemed almost unpardonable to let the matter stop there, and to make no use of the local organisations. He urged the inclusion of more questions in the schedule, in order that certain valuable indications might be afforded. For example, the census told them the sleeping population of London, and the occupations of the people at their sleeping centres. If they had proper statistics of the occupation centres as well, they would be able to get the day as well as the night population. He suggested that such information should be collected, and believed that if collected the results would be sufficiently accurate to be valuable. Another extremely important matter to put in the census was length of residence. It would be extremely important for very many scientific reasons to know whether the ancient population of centres in England still remained on those ancient centres. Information as to ownership, or otherwise, of residence was another factor which they might fairly ask should be obtained, and in connection with occupation centres the means of getting to and from the place of occupation was another very important detail. His suggestion was not that the census authorities themselves should tabulate this information, but that they should, while taking the census, collect it on behalf of and at the expense of the local authorities and leave them to make use of it. He distinguished this information to be collected contemporaneously with the taking of the census from that which properly belonged to the census itself, and they could be always kept apart by the use of different forms of return. As Mr. Baines knew perfectly well, in the magnificent census of the Punjab even anthropological data were collected. He would hope that at some future time information under that head might be collected in this country. Statisticians were collecting such information in America and in Germany, and the census authorities were collecting it in India. That again could only be indicative, not

actual information. With reference to the religious census, he rather agreed with Dr. Dudfield that it would not be of much use in the present day, but on the other hand he did not altogether agree with Mr. Noel Humphreys in his remarks as to the language census. He admitted the failure of the inquiries as to the use of the Welsh language at the last census, but he maintained that as the public became used to the inquiry, the accuracy of the replies would become gradually greater. One of the things they would get if matters were elaborated in the way suggested, would be the separate census which Dr. Dudfield had asked for, and which would be of the greatest importance in very many ways. He wished to put himself forward as one who cried for more information as against those who spoke of limitations. In this era of civilization they should at least be able to collect information about the people, even if there were a difficulty in publishing all that information in one volume.

Mr. W. GRIME (Bury, Lancs.) said that, like Mr. Buchanan, he was very grateful indeed for the courteous invitation they had had to attend the meeting. Like the members of the Statistical Society, the Registrars were dissatisfied with the results of the census, and not only wanted more information, but wanted it recorded more accurately. They wished that the present conflicting and overlapping areas could be simplified, so that the enumerator and the registrar could work satisfactorily and produce better results. One difficulty had been fully recognised, namely, that the enumerator was a man casually picked up and only employed for three or four days at a very low remuneration. In America the enumerators were drilled previous to the census, but here they had no training or preparation. It was impossible for the Registrar to instruct his enumerators in the time at his disposal. A good enumerator must be something more than an intelligent man. He must be a man such as a public officer, whose ordinary duty was to visit the houses of the people, and therefore in touch with the people, and acquainted with the houses he went to enumerate. He concurred in the suggestion that a simple schedule and simple definitions were needed. They had not merely to draft a schedule which would suit the average mind, but such as would be understood by the least intelligent.

Mr. N. L. COHEN, referring to the demand of Mr. Gomme that better use should be made of the machinery of the census for statistical purposes, said he had been much impressed by the pregnant sentence in which Mr. Baines emphasised the great importance of a permanent provision for the collection of normal statistical information needed for State purposes. He was very glad to hear Sir Robert Giffen give the authority of his judgment and experience to the idea of a permanent central statistical office. But they needed not only a central office, but also a system of local record offices to focus the statutory statistics and data prescribed by existing Acts of Parliament. There were separate authorities for the record of births, deaths, and marriages, for

taking statistics relating to school attendance, of the facts and data bearing on the right to the three franchises, Parliamentary, Municipal, and for School Boards, for recording notifications of diseases, and for the assessment and collection of taxes. He believed there was also another authority which had cognisance of the registration of ownership of real estate. Sooner or later it would be realised that a resolute effort was needed to focus all these local authorities in each district at one local office, which would also provide the nucleus of the machinery for the decennial or quinquennial censuses. Further, it was probable that the suspension of the ballot year by year for service in the militia was not dictated by questions of policy alone, but also by the fact that there was absolutely no machinery in England by which the individuals composing any section of the population suitable to be called on for military training could be identified. He would venture to commend that fact to the Census Committee as an opportune argument when they were pressing for greater facilities than were now afforded for the collection of statistical information or for the organisation of a quinquennial census.

Mr. BAINES, in replying upon the discussion, said he was highly gratified by the cordiality and attention with which his paper had been received, and by the instructive discussion to which it had given rise. One of his main objects, indeed, had been to elicit the views of those who, like the visitors from the North, had taken actual part in the operations, and could appreciate accordingly the labour and trouble of preparation and of arranging the details of what followed the census. As he has drawn so largely upon his experiences of an Indian census, he was glad to see among the audience one of his most able colleagues in that operation, Mr. Harold Stuart, a Fellow of the Society. Nevertheless, he had used his illustrations from the East merely to bring home facts to be grappled with in this country. As Mr. Bailey had truly said, the machinery of a census was less interesting to statisticians than the results, but unless the former were adequately understood, the relation to it of the latter, which was as close as that of the output to the machine in industries, was almost certain to be overlooked. He must excuse his omission of any questions that might have been raised, on the score of want of time, not intentional discourtesy or wish to evade awkward corners, though he would answer all he could. As to the distinction between employers and employed, he fully agreed with those who insisted upon its importance, whether from the economical or the statistical standpoint, but after what Dr. Ogle had reported in 1891, he feared that the want of attention to the instructions, and the casual abuse of crosses, not unknown even in the ballot, would invalidate the return on this occasion also. Similar imperfection too would probably mar any return that was sought of religious denomination, even though the declaration were to be left to the option of the householder, since non-statistical considerations came into play and rendered the figures incomplete and misleading.

He could not agree with Mr. Gomme that it was the novelty of the inquiry that spoiled the return of Welsh in 1891, as from what had occurred beforehand, in Parliament and out, there was clearly a more or less intelligent anticipation of the use to which the return was to be put. Such considerations were not in operation in respect to Gaelic in Scotland or Erse in the sister kingdom. He was not sure, however, whether in 1901, judging from what he had heard in the House of Commons on a certain occasion, it might not be part of the plan of campaign to exaggerate the prevalence of Erse, for purposes similar to those in view in regard to Welsh ten years back. The Society would heartily appreciate what had fallen from Mr. Grime and Mr. Buchanan on matters with which their acquaintance had been so practical. He would only disabuse Mr. Buchanan of the idea that the three days for which the Indian officials were turned out for census, were in anything but name "holidays," since in that short period all the essence of three months' training had to be rubbed into them, at high pressure. Dr. Dudfield had referred with some rancour, which he (the speaker) shared, to the apparent loss of population in London owing to the census of 1891 being taken at Easter. This loss was made apparent at the 1896 census, and the date proposed by the Society, with other bodies, for 1901 being Palm Sunday, the enumeration had a better chance of turning out correct, since it would precede the holidays by several days. The question of getting the population of streets tabulated, also recommended by Dr. Dudfield, was not beyond the means at the disposal of the Census Office, provided the units of enumeration were small enough to be fitted, like mosaic, into any of the larger areas for which population figures were wanted. The accuracy of card tabulation was beyond doubt, if the clerks using the cards were part of a permanent office establishment. It was with regard to the casual boy employed for the few months of the operations that he feared the frequency of loss or misplacement of cards not passed about under receipt, or ringed up together at each remove. He now turned to the additional subjects on which information was suggested as obtainable from the schedule. As to this, the chief offender was his friend Mr. Gomme, who verged towards the type of continental statist of whom mention had been made in the paper. A little incomplete and imperfect information was not only of no use, except for imperfectly based inference, but was often misleading. He recalled attention to the two canons he had suggested as applicable to census work, viz., to avoid, like sin, all that could be got by other means, and all that the householder was likely to be unable or unwilling to answer correctly. Thus, the question as to the ownership or occupancy of the house was one which called up opinion, sentiment, interests, and, possibly, visions of litigation. The place of occupation, again, was, in London for instance, almost invariably outside the area of enumeration, but the return, besides being very complicated, would be, in the case of the masses, of little durable value. The length of residence or settlement in the place wherein enumerated, too, presented little difficulty in cases where the population was well established, and where, accordingly,

the information was of less importance. But there must be taken into account a large crowd of migratory householders and heads of families whose movements were impulsive and mysterious, so that the demand for a record of the sort proposed would doubtless raise in their mind an interminable vista of moonlight flittings, which, for personal and pecuniary reasons, it was desirous to keep veiled by mendacity or reticence. Lastly, there was the question of overcrowding, especially at night, and this, he thought, was undoubtedly a matter for special, rather than synchronous, investigation. Such inquiry had been undertaken by both the Dr. Dudfields, engaged in sanitary work in important London districts. Those responsible for the schedules in the worst houses of this class had an interest in understating the numbers of their lodgers. All these topics were of undeniable moment at the present time, and should be tackled in the most suitable manner. Similarly with the burning political question of old age pensions. He sincerely trusted, as a statist, that no connection would be hinted at between the census and any scheme of endowment of age of that sort, otherwise the return of ages of 60 and upwards would be scarcely worth having. He was delighted at the thoroughgoing support which had been given to the proposal for a quinquennial census, but it should be clearly understood that the society did not suggest that on such an occasion the full schedule should be used, but that sex and age only should be recorded and tabulated. This would be simple and proportionately cheap. Mr. Humphreys had referred to his (the speaker's) rosy optimism as regards the Census Bill. It must be remembered that the paper was written early in the month, and the Bill was only the product of the preceding night. He still hoped for the best, which was not yet in the Bill, he believed, though with the combined efforts of statists, actuaries, and medical officers of health it might soon be found there. His optimism was limited to such demands upon the public as experience had shown could be, not what might or ought to be, got with accuracy: this he considered a moderated optimism.