JOURNAL OF THE STATISTICAL SOCIETY,

SEPTEMBER, 1870.

OPENING ADDRESS *of the* PRESIDENT *of* SECTION F (ECONOMIC SCIENCE *and* STATISTICS), *of the* BRITISH ASSOCIATION *for the* ADVANCEMENT *of* SCIENCE, *at the* FORTIETH MEETING, *at* LIVERPOOL, *September*, 1870. *By* PROFESSOR W. STANLEY JEVONS, M.A., F.S.S.

THE field of knowledge which we cultivate in this Section is so wide, that it would be impossible, in any introductory remarks, to notice more than a few of the important questions which claim our attention at the present time.

The name Statistics, in its true meaning, denotes all knowledge relating to the condition of the State or people. I am sorry to observe, indeed, that many persons now use the word *statistical* as if it were synonymous with *numerical;* but it is a mere accident of the information with which we deal, that it is often expressed in a numerical or tabular form. As other sciences progress, they become more a matter of quantity and number, and so does our science; but we must not suppose that the occurrence of numerical statements is the mark of statistical information.

In order, however, that any subject can be fitly discussed by a Section of this Association, it should be capable of scientific treatment. We must not only have facts, numerical or otherwise, but those facts must be analysed, arranged and explained by inductive or deductive processes, as nearly as possible identical with those which have led to undoubted success in other branches of science. I have always felt great gratification that the founders of this Association did not in any narrow spirit restrict its inquiries and discussions to the domain of physical science. The existence of this Section is a standing recognition of the truth, that the condition of the people is governed by definite laws, however complicated and difficult of discovery they may be. It is no valid reproach against us that we cannot measure, and explain, and predict, with the accuracy of a chemist or an astronomer. Difficult as may be the problems presented to the experimentalist in his investigation of Material Nature, they are easy compared with the problems of Human

Nature, of which we must attempt the solution. I allow that our knowledge of the causes in action is seldom sure and accurate, so as to present the appearance of true science.

There is no one who occupies a less enviable position than the Political Economist. Cultivating the frontier regions between certain knowledge and conjecture, his efforts and advice are scorned and rejected on all hands. If he arrives at a sure law of human nature, and points out the evils which arise from its neglect, he is fallen upon by the large classes of people who think their own common sense sufficient; he is charged with being too abstract in his speculations; with overlooking the windings of the human heart; with undervaluing the affections. However humane his motives, he is lucky if he escape being set down on all sides as a heartless misanthrope. Such was actually the fate of one of the most humane and excellent of men, the late Mr. Malthus. On the other hand, it is only the enlightened and wide-minded scientific men who treat the political economist with any cordiality. I much fear that, as physical philosophers become more and more successful, they tend to become like other conquerors, arrogant and selfish; they forget the absurd theories, the incredible errors, the long enduring debates out of which their own knowledge has emerged, and look with scorn upon our economic science, our statistics, or our still more vague body of knowledge called social science, because we are still struggling to overcome difficulties far greater than ever they encountered. But, again, I regard the existence of this Section as a satisfactory recognition of the absolute necessity of doing our best to cultivate economic subjects in a scientific spirit.

The great and everlasting benefits which physical science has conferred upon the human race are on every side acknowledged; yet they are only the smaller half of what is wanted. It daily becomes more apparent that the highest successes in the scientific arts and manufactures are compatible with deep and almost hopeless poverty in the mass of the people. We subdue material nature; we spin and weave, and melt and forge with a minimum of labour and a maximum of result; but of what advantage is all this while human nature remains unsubdued, and a large part of the population are too ignorant, careless, improvident or vicious, to appreciate or accumulate the wealth which science brings. Chemistry cannot analyse the heart; it cannot show us how to temper the passions or mould the habits. The social sciences are the necessary complement to the physical sciences, for by their aid alone can the main body of the population be rendered honest, temperate, provident, and intelligent.

In this kingdom during the last thirty or forty years we have tried a mighty experiment, and to a great extent we have failed.

The growth of the arts and manufactures, and the establishment of free trade have opened the widest means of employment and brought an accession of wealth previously unknown; the frequent remission of taxes has left the working classes in fuller enjoyment of their wages; the poor laws have been reformed and administered with care, and the emigration of millions might well have been expected to leave room for those that remain. Nevertheless within the last few years we have seen pauperism almost as prevalent as ever, and the slightest relapse of trade throws whole towns and classes of people into a state of destitution little short of famine. Such a melancholy fact is not to be charged to the political economist; it is rather a verification of his unheeded warnings; it is precisely what Malthus would have predicted of a population which, while supplied with easily earned wealth, is deprived of education and bribed by the mistaken benevolence of the richer classes into a neglect of the future. What can we expect while many still believe the proverb, that "Where God sends mouths, He sends food," and while a great many more still act upon it?

I am glad to say that, in spite of all opponents, we have an education act. Three centuries ago the State recognised the principle that no person should be allowed to perish for want of bread; for three centuries the State has allowed the people to perish for want of mind and knowledge. Let us hope much from this tardy recognition of the greatest social need, but let us not withdraw our attention from many other causes of evil which still exist in full force. I wish especially to point out that the wise precautions of the present poor law are to a great extent counteracted by the mistaken humanity of charitable people. Could we sum up the amount of aid which is, in one way or other, extended by the upper to the lower classes, it would be almost of incredible amount, and would probably far exceed the cost of poor law relief. But I am sorry to believe that however great the good thus done the evil results are probably greater. Nothing so surely as indiscriminate charity tends to create and perpetuate a class living in hopeless poverty. It is well known that those towns where charitable institutions and charitable people most abound, are precisely those where the helpless poor are most numerous. It is even shown by Sir Charles Trevelyan, in a recent pamphlet, that the casual paupers have their London season and their country season, following the movements of those on whom they feed. Mr. Goschen and the poor law authorities have of late begun to perceive that all their care in the administration of relief is frustrated by the over-abundant charity of private persons, or religious societies. The same family often joins parish relief to the contributions of one or more lady visitors and missionaries. Not only improvidence but gross

fraud is thus promoted, and cases are known to occur where visitors of the poor are duped into assisting those who are secretly in possession of sufficient means of livelihood.

Far worse, however, than private charity are the innumerable small charities established by the bequests of mistaken testators. Almost every parish church has its tables of benefactions, holding up to everlasting gratitude those who have left a small patch of land, or an annual sum of money, to be devoted to pauperising the population of the parish throughout all time. Blankets, coals, loaves or money are doled out once or twice a-year, usually by the vicar and churchwardens. More or less these parish charities act as a decoy to keep the most helpless part of the population nominally within the fold of the Church. The Dissenters, where they are strong enough, retaliate by competing for the possession of the poor by their own missions, and thus the reproach of the Roman Catholic Church, that it fostered mendicancy, holds far too true of our present sects. With private charity no law can interfere, and we can do nothing but appeal to the discretion of individuals. With testamentary charities it is otherwise.

We are far yet from the time when so beneficial a measure will be possible, but I trust that we are rapidly approaching the time when the whole of these pernicious charities will be swept away. We have in this country carried respect to the wishes of past generations to an extent simply irrational. The laws of property are a purely human institution, and are just so far defensible as they conduce to the good of society. Yet we maintain them to the extent of wasting and misusing no inconsiderable fraction of the land and wealth of the country. It would be well worthy, I think, of Mr. Goschen's attention, whether all small parish charities might not be transferred to the care of the guardians of the poor, so as to be brought under the supervision of the Poor Law Board, and distributed in accordance with sound principle. I should refuse to see in all such public endowments any rights of private property, and the State which undertakes the ultimate support of the poor, is bound to prevent its own efforts to reduce pauperism from being frustrated, as they are at present.

And while speaking of charities, it is impossible to avoid noticing the influence of medical charities. No one could for a moment propose to abolish hospitals and numerous institutions which are absolutely necessary for the relief of accidental suffering. But there is a great difference between severe accidental disease or injury, and the ordinary illnesses which almost every one will suffer from at various periods of his life. No working man is solvent unless he lay by so much of his wages as will meet the average amount of sickness falling to the lot of the man or his family. If

it be not easy to determine this amount, there are, or may be, sick clubs which will average the inequalities of life. In so far as trades unions favour the formation of such clubs, they manifest that spirit of self-reliance which is the true remedy of pauperism.

But the wealthy classes are, with the best motives, doing all they can to counteract the healthy tendencies of the artisans. They are continually increasing the number and resources of the hospitals, which compete with each other in offering the freest possible medical aid to all who come. The claims of each hospital for public support is measured by the number of patients it has attracted, so that, without some general arrangement, a more sound system is impossible. Hospitals need not be self-supporting, and in cases of really severe and unforeseen suffering, they may give the most lavish aid; but I conceive that they should not relieve slight and ordinary disease without a contribution from those benefited. As children are expected to bring their school pence, though it be insufficient to support the school, and as Government has wisely refused to sanction the general establishment of free schools, so I think that every medical institution should receive small periodical contributions from the persons benefited. Arrangements of the kind are far from uncommon, and there are many self-supporting dispensaries, but the competition of free medical charities has, to a great extent, broken them down.

The importance of the subject with which I am dealing, can only be estimated by those who have studied the statistics of London charities, prepared by Mr. Hicks and published in the "Times" of 11th February, 1869. It is much to be desired that Mr. Hicks, or some other statistician, would extend a like inquiry to all parts of the United Kingdom, and give us some notion of the amount of money expended in the free relief of the poor.

Closely connected with this subject is that of the poor law medical service. Admirable efforts are being made to improve the quality of the medical aid which all persons sufficiently poor can demand, and some unions have already erected hospitals almost perfect in their comfort and salubrity. It will be conceded by every one, that those sick persons, whose charge is undertaken by the public, ought to be treated with care and humanity. Where medical aid is given at all, it ought to be good and sufficient. But the subject seems to me to be surrounded with difficulties, out of which I cannot find my way. The better we make the poor law medical service, the more we shall extend and deepen the conviction, already too prevalent, that the poor may make merry with their wages when well and strong, because other people will take care of them when sick and old. We thus tend to increase and perpetuate that want of self-reliance and providence which is the

crowning defect of the poorer classes. In this and many other cases it seems as necessary as ever that our humane impulses should be guided by a stern regard to the real results of our actions.

I now turn to a subject which must come prominently before our Section. I mean the future financial policy of the kingdom. We are now at a most peculiar and happy epoch in our financial history. For thirty years or more a reform of the tariff has been in progress, and it is only a year since the last relic of the protective system was removed by Mr. Lowe's repeal of the small corn duty. One great scheme is thus worked out and completed. Henceforth, if duties are remitted, it must be on a wholly different ground—as simple remission of revenue—not as the removal of protective duties which benefit some to the injury of others. It might well be thought difficult to overlook the difference between a tax for revenue purposes and one for protective purposes; and yet there are not a few who seem not to see the difference. We are still told that there is no such thing as free trade, and that we shall not have it until all custom houses are swept away. This doctrine rests, however, upon a new interpretation of the expression free trade, which is quietly substituted for the old meaning. Cobden, however much he might be in favour of direct taxation, took care to define exactly what he meant by free trade. He said:—

"What is free trade? Not the pulling down of all custom "houses, as some of our opponents try to persuade the agricultural "labourers. Our children, or their offspring, may be wise enough "to dispense with custom house duties; they may think it prudent "and economical to raise revenue by direct taxation; we do not "propose to do that.

"By free trade we mean the abolition of all protective duties.

"We do not want to touch duties simply for revenue, but we "want to prevent certain parties from having a revenue which is "to benefit themselves, but advantage none else; we seek the "improvement of Her Majesty's revenue."

Let us, then, candidly acknowledge that in Cobden's sense free trade is actually achieved. Any one the least acquainted with our revenue system, knows with what skill our tariff has been adjusted by Peel, Gladstone, and Lowe, so that the articles taxed should be of entirely foreign production, or else the customs duty should be exactly balanced by an excise duty. We have now a very large revenue of about forty millions, raised by customs or excise duty on a small number of articles, with the least possible interference with the trade of the country. A very large part, too, is raised upon spirituous liquors, the consumption of which we desire, on other grounds, to reduce rather than encourage.

For the future, then, the remission of customs duties will be

grounded on other motives than it has often been in the past, and it becomes an open question whether there are not other branches of revenue far more deserving attention. It must not be supposed that foreign trade is to be encouraged before everything else. The internal trade and industry of the country is at least equally deserving of attention, and it may be that there are stamp duties, licence duties, rates, or other taxes which, in proportion to the revenue they return, do far more injury than any customs duties now remaining. It is impossible, for instance, to defend the heavy stamp duty paid by the articled clerks of attorneys on their admission; and, if I went into detail, it would be easy to point out scores of cases where the attention of the Chancellor of the Exchequer is needed.

I may point to local taxation especially as a subject requiring attention, even more than any branch of the general revenue. Until within the last few years the importance of the local rates was to a great extent overlooked, because there were no adequate accounts of their amount. The returns recently obtained by the Government are even now far from complete, but it becomes apparent that at least one-fourth part of the whole revenue of the kingdom is raised by these neglected rates and tolls. Their amount is more than equal to the whole of the customs duties, upon the reform of which we have been engaged for thirty years. Nevertheless we continue to allow those rates to be levied substantially according to an act passed in the reign of Queen Elizabeth. The recent partial inquiry by a select committee has chiefly served to prove the extent and difficulty of the reform which is needed. Whole classes of property which were unrated three centuries ago are unrated now, and it will be a matter of great difficulty to redress in an equitable manner inequalities which have been so long tolerated. The subject is of the more importance because there is sure to be a continuous increase of local taxation. We may hope for a reduction of the general expenditure, and we shall expect rather to reduce than raise the weight of duties. But all the more immediate needs of society, boards of health, medical officers, public schools, reformatories, free libraries, highway boards, main drainage schemes, water supplies, purification of rivers, improved police, better poor law medical service;—these, and a score of other costly reforms, must be supported mainly out of the local rates. Before the difficulties of the subject become even greater than they now are, I think that the principles and machinery of local taxation should receive thorough consideration. At present the complexity of the laws relating to poor rates is something quite appalling, and it is the herculean nature of the reform required which perhaps disinclines financial reformers from attacking it. Several most able members of the Statistical

Society have, however, treated the subject, especially Mr. Frederick Purdy, Professor J. E. T. Rogers, and Mr. Dudley Baxter.

I am glad to be able to draw the attention of the Section to the fact that the Statistical Society of London have received from Mr. William Tayler, one of the members, the sum of fifty guineas, to be awarded by the Society, to the author of the best essay on the Local Taxation of the United Kingdom.

We have considerable opposition raised to customs and excise duties, because they are indirect taxes, but the fact is, that direct taxation is practically impossible. Careful examination shows that it is difficult to draw any clear distinction between taxes in this respect. There are few or no direct taxes borne only by those who pay them. The incidence of the local rates, for instance, is an undecided question, but I do not doubt that they fall to a considerable extent indirectly. The incidence of the stamp duties is almost wholly indirect, but defies investigation. The income tax no doubt approaches closely to the character of a direct tax, but it has the insuperable inconvenience of being paid by the honest people and escaped by the rogues. I am inclined to look upon schemes of universal direct taxation as affording much scope for interesting speculation, but as being, in practice, simply impossible.

I have another point to urge. Is not the time come when the remission of taxes, whether of one kind or another, may properly cease to be a main object? The surplus revenue of future years will doubtless be more than sufficient to enable the Chancellor of the Exchequer to reform or abolish those small branches of internal revenue which occasion far more inconvenience and injury than they are worth. There will still, should war be happily avoided, remain a considerable surplus, and the question presses upon us, Shall this revenue be relinquished, or shall it be applied to the reduction of the national debt?

In considering this subject, I may first point out that there probably exists no grievous pressure of taxation, and no considerable inequality as regards the several classes of the people. We are now able to estimate, with some approach to accuracy, the actual proportion of income which is paid by persons of different incomes. The accounts now published by Government, and the labours of several eminent statisticians, especially Professor Leone Levi and Mr. Dudley Baxter, permit us to make this calculation. The most recent addition to our information is contained in an elaborate paper read by Mr. Baxter before the Statistical Society in January, 1869, and since published in the form of a volume. Mr. Baxter has, with great industry and skill, collected a mass of information concerning the habits of persons in different classes of society, which he combines with the published accounts of the revenue, and with the

statistics of income previously estimated by himself and Mr. Leone Levi. Both he and Professor Levi come to the conclusion that the working classes, so long as they make a temperate use of spirituous liquors and tobacco, pay a distinctly less proportion of their income to the State, and even intemperance does not make their contribution proportionally greater than those of more wealthy persons.

It happens that, before I was aware of Mr. Baxter's elaborate inquiries, I undertook a similar inquiry on a much more limited scale, by investigating the taxes paid by average families spending 40*l.*, 85*l.*, and 500*l.* a-year. My conclusions, as might be expected, were not exactly coincident with those either of Mr. Baxter or Professor Levi; yet there was no great discrepancy. I conceive that families of the classes mentioned, consuming moderate quantities of tobacco and spirituous liquors, all pay about 10 per cent. of their income in general or local taxation, allowance being made for the recent reduction of the sugar duty and the repeal of the corn duty.* But there is this distinction to be noticed, that the taxation of the middle classes is mostly unavoidable, whereas at least half the taxation of the poorer classes depends upon the amount of tobacco and spirituous liquors which they consume. Families of artisans or labourers, abstaining from the use of these stimulants, are taxed very lightly, probably not paying more than 4 or 5 per cent. of their income. Now, while many men are total abstainers, and many are intemperate, I think we cannot regard the taxes upon stimulants as we do other taxes. The payment of the tax is voluntary, and is, I believe, paid without reluctance. The more we thus investigate the present incidence of taxation, the more it seems inexpedient to proceed further in the reduction of the customs and excise duties. The result would be to leave by far the larger mass of the people almost free from anything but local taxes, and to throw the whole cost of Government upon the wealthier classes, and especially those who have tangible property.

But I venture to raise another question. I doubt whether the remission of taxation does as much good at the present day as it would at a future time. There are comparatively few signs that the wages of the working classes, even when sufficient, are saved and applied really to advance the condition of the recipients. All is expended in a higher scale of living, so that little permanent benefit results; and when bad trade comes again, there is as much distress as ever. It is only with the increase of education and temperance, that the increase of wages will prove a solid advantage. Thus, when the really hurtful taxes are removed, it by no means follows that the further remission of taxes leads to the profitable

* See Appendix A, p. 323.

expenditure of income. The money may be spent in a way far more profitable to the whole nation than it will be spent by those whose taxes are remitted.

I am glad on this and many other accounts, that the propriety of reducing the national debt is beginning to be very generally recognised. The question was ably raised by Mr. Lambert during the recent session, and both in the House of Commons and in the newspaper press, many strong opinions were expressed in favour of reduction. In fact, there was almost a general feeling that Mr. Lowe's small measure of reduction was altogether inconsiderable compared with our opportunities and the greatness of the task before us. During every interval of peace we ought to clear off the charges incurred during the previous war, otherwise we commit the serious error of charging to capital that which should be borne by income. If a railway company needs periodically to renew its works, and charges all the cost to capital, it must eventually become insolvent; so if at intervals we require to maintain the safety and independence of this country or its possessions by war, and do it all by borrowed money, we throw the whole cost of our advantage upon posterity. If, indeed, one great war could free us from all futured anger we might capitalise the cost and leave it as a perpetual mortgage upon the property of the country; but if the effect of any war wears out, and we are liable to be involved in new wars at intervals, then we cannot fairly or safely go adding perpetually to the mortgage upon the national property. The wars at the commencement of this century have secured for us fifty years or more of nearly unbroken peace, and yet at the end of this period of ever-advancing wealth, the great debt stands almost at the same figure as at the commencement. We enjoy the peace and leave our descendants to pay its cost.

If it be said, that this country is now far wealthier and more able to endure the annual charge of the debt than ever before, I would point out that the expense of war is also greatly increased. If we consider the cost of the Abyssinian Expedition, or the vast debts which other nations have lately or are now incurring, it is evident that we may have in a great war to incur hundreds of millions of debt, or else relinquish our prominent position. Let us hope that such calamities will be spared to us, but let us not suppose that we may avoid them by being negligent and unprepared. It is not many months since Mr. Lowe declared that we must maintain our system of taxation substantially as it is, in order to supply revenue adequate to possible emergencies. The wisdom of his view is already apparent, but I hold that he should have gone further, and strengthened our hands by a measure for the reduction of the debt worthy of his boldness and the surplus at his command. But the

fact is that little can be done in such a matter by any minister unless he be supported by a strong public opinion.

The remarks which I most wished to make are now completed, and there only remain one or two minor topics to which I will more briefly allude.

The excessive mortality in great towns seems to demand more close attention than it has received. For many years Liverpool stood at or near the top of the list as regards mortality, but by strenuous efforts it has been rendered more healthy. Manchester, on the other hand, although often considered the best paved, best watered, and in some other respects the best managed town in the country, has lately taken a very high or even the highest place as regards mortality. In Salford, too, the death-rate has steadily grown in recent years. It would seem as if we were entirely at fault, and that all our officers of health, sanitary commissioners, and the improvements of science and civilisation, cannot prevent nearly twice as many people from dying as would die in a healthy and natural state of things.

Within the last few months attention has been drawn to this subject by a prolonged discussion in the "Manchester Guardian." It was occasioned by Mr. Baxendell, who brought before the Manchester Literary and Philosophical Society certain statistics tending to show that the mortality of Manchester was not due to any peculiar excess in the rate of infantile mortality. It was an old opinion that in a manufacturing town like Manchester, the children are neglected, while the mothers are employed at the mills; but Mr. Baxendell showed that the deaths of infants under five years actually bear a less proportion to the whole number of deaths than in any other of the large towns. This conclusion was somewhat severely criticised by the Medical Officer of Health for Salford, and by Dr. Ransome and Mr. Royston, of the Manchester Sanitary Association. The latter gentlemen pointed out that the true mode of computation is to compare the deaths of infants with the number of infants living, and the deaths of adults with the number of adults. But even when calculations are made in this manner it still turns out that the adult mortality of Manchester is as excessive as the infantile mortality. Manchester mothers are thus exonerated from the charge of neglect, but at the same time a most important and mysterious problem is left wholly unsolved.

Our perplexity must be increased when we consider that Liverpool and Manchester, though both very unhealthy towns, are quite contrasted as regards situation and the kinds of employment they present. If we compare Liverpool with other seaports, such as Bristol, Hull, and London, it is found to exceed them all considerably in mortality. Bolton, Bury, Preston, Stockport and other towns

have more women employed than Manchester, comparatively speaking, yet they are more healthy. The size of the town, again, is not the chief cause, for London, though many times more populous than any other town, is decidedly healthy. The sites of the towns do not give any better solution of the difficulty, London having probably as unhealthy a site as any of the other large towns.

I am surprised that more attention has not been drawn to the probable influence of a poor Irish population in raising the death-rate. It occurred to me that the great towns which are most unhealthy agree in containing a large proportion of Irish, and agree in nothing else which I can discover. To test this notion I have calculated, from the census returns of 1861, the ratio of the Irish-born adult population in all the larger towns of Great Britain.* It then becomes apparent at once that the unhealthy towns of Liverpool, Manchester, Salford, Glasgow, Dundee, &c., are all distinguished by possessing a large population of Irish, whereas the healthy towns of London, Birmingham, Bristol, Hull, Aberdeen, &c., have less than $7\frac{1}{2}$ per cent. of adult Irish residents. Sheffield is the only remarkable exception to this induction. It might seem that, in order to confirm this conclusion, I should show the death-rate in Dublin to be very high. On turning to the accounts of the Irish Registrar-General, we find the Dublin rate to be low, but then we find that the Dublin birth-rate is even lower in proportion. In fact the registry system in Ireland gives results so much lower in every respect than those of Great Britain, that we must either conclude the state of population to be utterly different there from what it is here, or we must suppose the registration to be very incomplete. If after further investigation this suggestion should be found to explain the high and mysterious mortality of many towns, it will, I think, relieve us from some perplexity, give us more confidence in sanitary measures, and point out exactly where most attention is needed.

The next two or three years will be a time of great interest to statisticians on account of the approaching census of 1871. We shall soon possess data which will assist us in many investigations, and enable us surely to estimate many of the changes in progress.

There is only one suggestion concerning the census which it occurs to me to make, namely, that it ought to be taken in as nearly as possible a uniform manner in all the three parts of the United Kingdom. It need hardly be pointed out that the value of statistics almost entirely depends upon the accuracy and facility with which comparisons can be made between different groups of facts, and a very slight variation in the mode of making the enumerations or the census or tabulating the results, will lead to error, or else render comparison impossible.

* See Appendix B, p. 323.

Reasons, the force of which I cannot estimate, have led to the establishment of distinct registry offices in Edinburgh and Dublin. Not only are the ordinary reports concerning births, deaths, and marriages drawn up independently in the several offices for England, Scotland, and Ireland, but even the census is performed by the separate authorities in the three kingdoms. Consequently we have really three censuses and three reports, and at least in 1861 the tables were constructed to a great extent in different modes in these reports. Thus there is a total want of that unity and uniformity which, in a scientific point of view, is indispensable. If there is one thing more than another which demands perfect unity and centralisation, it is the work of the census and the Register Office; but if we cannot have one central office, let us hope that the several Registrar-Generals will co-operate so as to produce the nearest approach to uniformity in the census. The different territorial divisions and arrangements may require some modifications in the mode of enumeration, but except in this respect, there should be perfect identity.

I should like to direct your attention for a moment to the very copious and excellent statistical publications with which we are now furnished by Government. Owing partly to the prejudice against blue books, and partly probably to the ineffective mode of publication, the public generally are not aware that for the sum of 8*d.* any person can obtain the Statistical Abstract of the Board of Trade, containing an admirable selection from the principal statistics of the country during the preceding fifteen years. For a few shillings, again, may be had the "Miscellaneous Statistics" of the Board of Trade, furnishing a wonderful compilation of facts concerning three recent years, though I wish that this information could be brought more nearly up to the time of publication.

By degrees a considerable amount of system has been introduced into our parliamentary papers. They have always been sufficiently copious—rather too copious in fact—but until the last twenty years they consisted mainly of disconnected and accidental accounts, which were exceedingly troublesome to statisticians, and often of no use whatever. It is from regular annual publications, carried on in a uniform manner, that we derive the most useful information, that which is capable of comparison and digestion. The annual reports which have for some years been issued from various Government departments, are the best source of statistics; and I may suggest that there are several public departments, for instance the Mint, which do not yet give any regular annual reports.

I would especially point again to the last report of the Inland Revenue Department as a model of what we might desire from other departments. In addition to the usual annual report, it con-

tains an abstract of the previous reports for ten years back, and, what is still more valuable, complete tables of all inland duties from their first establishment, some of the tables going back to the beginning of last century. We are thus provided with a complete history of the inland revenue. I cannot but believe that in many other departments is much valuable information which might be furnished to the public in like manner at a very slight cost.

Under other circumstances I should have had something to say to you concerning international money. Just before the present unhappy war broke out, a commission in Paris had reported in a manner greatly facilitating the adoption of an international money in the British Empire and in America; at the same time a conference was about to be held in Berlin, which would probably have resulted in some important measures as regards Prussia. Everything, in short, was favourable to the early adoption of a common money. But it need hardly be said, that all hope of such a great reform must be deferred until peace is once again firmly established.

Since this Association last met, the great experiment of transferring the telegraphs to Government control has been carried out. The result has been to some extent disappointing. The proprietors of the telegraphs, when negotiating with Government, discovered that their property was about twice as valuable as they had before considered it. The enormous profits which they made out of the sale, seem to me to throw immense difficulty in the way of any similar transfer in the future. It becomes, for instance, simply chimerical to suppose that the Government can purchase the railways, which are about two hundred and fifty times as valuable as the telegraphs, and which, if purchased in the same way, would cost considerably more than the whole national debt. The working of the telegraphic department, again, confirms the anticipation that we must not expect from it any such results as followed the establishment of the penny post. Many people already look forward to the time when the uniform cost of a telegram will be 6*d.*, but I believe that they will be disappointed. They overlook the essential difference that a great number of letters may be conveyed almost as cheaply as one letter, whereas every telegram occupies the wires for a definite time, and requires to be delivered, generally speaking, by a special messenger. Thus, if we are to have the rapid delivery without which telegrams seem to me nearly valueless, the property and staff, and, of course, the expenses of the department, must expand nearly proportionally to the business. A reduction of the rate to 6*d.*, by bringing a great increase of work, would greatly augment the expenses of the department, and inflict a loss upon the nation.

Appendix A.

Estimate of the proportion of expenditure (see p. 317) paid as taxes, general or local, by average families of man and wife, with one child over 10 years of age, and one child under 10 years. The families are supposed to expend respectively the total amounts of 40*l.*, 85*l.*, and 500*l.* a-year, and to represent the classes of labourers, artisans, and middle class persons. The family expending 500*l.* a-year, is supposed to maintain three servants.

	Family Spending per Annum.		
	£40.	£85.	£500.
	Per cnt.	Per cnt.	Per cnt.
Taxes on necessaries—Tea, sugar, coffee, fruit	1·0	1·1	0·6
Local taxes	2·5	2·4	1·9
Income tax, house, and legacy duty	—	—	3·4
Stimulants—Beer, spirits, wine, tobacco	5·5	4·1	1·8
Total per cent. of income	9·0	7·6	7·7

In the above statement no allowance is made for many of the stamp, licence, and minor customs duties, or the net revenue of the post office, so that six or seven millions of revenue remain unaccounted for. These duties fall mainly upon the wealthier classes, and if they could be apportioned, would probably raise the payments of the middle class and labourers' families to 10 per cent., the artisan's payment remaining somewhat less than 10 per cent. No account is taken of intemperate consumption of spirituous liquors and tobacco. Many of the licence duties are taken into account in calculating the effect of the customs duties, and an allowance of 20 per cent. is added to the duties on commodities to cover the interest charged by the dealers who advance the duties.

Appendix B.

On the Connection between the Irish Population and the Rate of Mortality in Towns.

I have tested the suggestion made in the text (see p. 320) in a variety of ways, and have, in almost every case, met with confirmatory evidence.

In calculating the percentage of Irish population in any town, I have taken the numbers only of the population of 20 years of age and upwards, for the obvious reason that if an Irish family live for

a few years in England, they may have children registered as English born, although they live under the same sanitary conditions as their Irish parents.

The following statement compares the proportion of Irish population with the mortality in some of the principal towns:—

	Proportion of Irish Population, Census of 1861.	Rate of Mortality per 1,000, on the Average of 1851-60.
Liverpool	34·9	33·3
Manchester	20·6	31·6
Salford	12·7	26·1
Newcastle	9·0	27·4
Bradford	8·6	25·7
Leeds	7·5	27·8
Birmingham	7·3	26·5
London	5·7	23·6
Sheffield	5·2	28·5

The high mortality of Liverpool and Manchester is here in striking conformity with the large Irish population, and more recent returns of the Salford mortality would also exhibit conformity. Sheffield is the only serious exception.

In another calculation, I took a list of the mortality of eighteen English towns in the year of the census of 1861. I separated the towns into three groups, according as the mortality was—

1. At the rate of 28 or more per 1,000.
2. Between the rates of 24 and 28.
3. At the rate of 24 or less.

The percentage of Irish population *in the aggregate* of each group, and the average mortality was then found to be as follows:—

	Percentage of Irish Population.	Average Mortality.
Towns of High Mortality— Liverpool, Manchester, Newcastle, Preston, and Bolton	21·9	29·8
Towns of Medium Mortality— Leicester, Ashton, Oldham, Blackburn, Sheffield, Leeds	7·0	26·0
Towns of Least Mortality— Bradford, Nottingham, Birmingham, Dudley, Stoke, Wolverhampton, Stourbridge	5·6	22·9

With the above we may compare London, which has an Irish population of 5·7 per cent., and a mortality of 23·6, on the average of the years 1851-60.

Observing in another list that Altrincham, Bakewell, and War-

wick were districts of low mortality, the rate scarcely exceeding 20 in 1,000, I calculated the Irish percentage as follows:—

	Per Cent.
Altrincham	6·0
Bakewell	2·2
Warwick	2·0

Or aggregating the three towns together, we find the Irish population to be on the whole 2·2 per cent., or less than half the average proportion of Irish throughout England and Wales, which is 4·52 per cent.

These facts appeared to me to be almost of a conclusive character by themselves, but in extending the comparison to the Scotch towns, we meet with the strongest possible corroboration. The eight principal Scotch towns happen to fall apart into two very distinct groups, the particulars of which are shown in the following table:—

	Proportion of Irish Population, Census of 1861.	Rate of Mortality per 1,000, on the Average of 1855-63.
Towns of Large Irish Population—		
Dundee	23·8	27·3
Glasgow	23·0	29·8
Greenock	22·0	31·1
Paisley	18·1	26·5
Towns of Small Irish Population—		
Edinburgh	7·4	24·7
Leith	6·6	22·6
Perth	6·4	24·9
Aberdeen	1·8	23·1

Forming averages of the above numbers, we have—

	Average Proportion of Irish Population.	Average Mortality
Towns of large Irish population	21·7	28·7
„ small „	5·5	23·8

It may not be unworthy of remark, that in the most unhealthy towns—Liverpool, Manchester, Salford, &c.—the Irish women are in excess of the men; whereas in the most healthy towns—such as Hull, Leith, and Aberdeen, the women are even fewer than the men. The following is the proportion of Irish women to the whole number of women in the healthy places:—

	Per Cent.
Leith	5·3
Aberdeen	1·5
Bakewell	1·4
Warwick	1·9
Altrincham	4·7

We should naturally turn to ascertain whether the mortality in Ireland at all bears out the apparent effect of Irish immigration in England. Taking the average of a few years of the returns of births and deaths in Dublin, I find that the rates are in both cases almost exactly the same, namely, 26·1 per 1,000. In one return the deaths were 33·6, while the births were only 24·7. As the birth-rate much exceeds the death-rate in England and other progressive countries, we must either regard the population of Ireland as being in a very abnormal state, or we must reject the returns as wholly unworthy of confidence.

The Editor of the *Statistical Journal* has often appended a note to the Irish returns, calling attention to their apparent untrustworthiness. Until we know to what extent the returns are defective, they are simply misleading and mischievous; but if they at all approximate to the truth, they lend strong support to the supposition that English mortality is greatly influenced by Irish immigrants.