SECTION I.

GENERAL OBJECT AND METHOD.

The object of these notes is an examination of the recorded facts relating to wages in the United Kingdom during this century; it is not proposed to write the general history of wages, but to pass by questions of cause and effect, and of changes which appear to have resulted from specific events, and study only the numerical record of wages paid; in fact, underlying the purpose of these notes throughout are the purely arithmetical or statistical questions: What have been the total amounts and the averages of wages, and what the differences between trade and trade and from man to man, at the different epochs of this century, and what has been the progress of the wage-earning classes so far as it can be measured by the amounts of their earnings? Again, the object is not so much to give an ex cathedra estimate of these quantities, as to discuss the general nature of the problem, the material that exists for such estimates and its deficiencies, the various ways in which this material has been and can be handled, the exact meanings of the words—wages, earnings—and the special methods applicable for obtaining out of the scattered and vague data available accuracy and definiteness in the result. For the complete tabulation, classification and averaging of all the existing material the work of years would be necessary, and the results would be more suitable for a book of reference than for a student's manual; but it is hoped that a critical examination of the difficulties of investigations as to comparative wages, with tentative studies in some groups, together with a few

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more exhaustive calculations, will prove of more use to students than mere pages of figures.

The following are the chief subjects that will be dealt with:—

- the extent and nature of the material existing,
- and the chief authors and sources of information,
- with mention of some special difficulties in making general estimates; a general statistical history of the wages in groups of industries, such as agriculture, the building trades, mining, textiles, and mechanical engineering industries; the distinction between wages and earnings; the difficulties of conducting a wage census and former attempts to do so; and the special features of modern estimates; the more minute investigation of the wage-statistics of the building trades, illustrating the special difficulties which arise, and the methods of calculation applicable; the treatment of the statistics of a new and expanding trade, and of a decaying trade, the combination of these figures with the general average, and the difficulties in the way of a general comparison; and the reduction of all wage statistics to yearly averages referring to the whole sphere of industry.

The importance of wage-statistics can hardly be overestimated in relation to all investigations dealing with the welfare of the wage-earning classes, for, after all, the first thing to be determined in estimating the economic position of a working man, is the total amount of money he is able to earn during a year; and all other problems, such as the variation of the prices of commodities, the greater or less regularity of work, the amount of leisure, and the relative advantages of particular employments, though of very great importance, are still subsidiary, and their solution of little value till the money wage is known.

There are two general methods of dealing with wages *en masse*, which may be called respectively “stational” and “kinetic.” The “stational” is the method generally followed, and consists in making comprehensive estimates for given years, obtaining thus the average and distribution (i.e. the grouping of numbers of earners with respect to their wages at various distances from
the average) at those times, and finally comparing the results. This method is perfectly sound in theory, but is unfortunately difficult or impossible in practice. If we confined ourselves to it, we should only obtain three estimates, viz. those by Leone Levi, in 1866, 1878, and 1885, which we could compare with each other; and even modern material since 1886 would be difficult to handle. The other method, the “kinetic,” which it is proposed to follow almost exclusively here, consists in studying not wages themselves, but their rates of change, making no attempt to construct a wage census for former dates or at the present time, but to study the proportionate changes of wages period by period, wherever we can obtain a sequence of figures, and combine the figures which indicate these rates of change independently of the actual rate of wages at any time or place. This method has the double advantage of making it possible to use all the material we have, and so to obtain comprehensive results, and also of bringing into play special causes, tending to an accuracy which the statical method lacks.

Using the kinetic method we can sometimes make use even of piece-rates; for if we know the piece-rates for a series of years we only need to know the time-rates for one year to deduce them for all, if we are justified in assuming that there has been no change in the method of production. This assumption is sometimes justified; for instance, in the minutes of the Handloom Weavers’ Commissions we find statements of piece-rates for 30 years or more, accompanied by evidence showing that neither pace, skill, nor machinery had greatly changed. With power- weaving it is very different; there we find a continued fall of piece-rates, increase of speed, and improved machinery, so that with the same or less labour the output continually increases: and in this case the change of piece-rates gives us no clue to the change of time-rates. Another example is found in modern cotton-spinning; here the piece-rates are continually adjusted, so that a given expenditure of labour of a certain degree of skill shall obtain given earnings in spite of adjustments of the machinery; while general changes are decided by a general increase or decrease per cent. on the piece-list prices. The methods are so complicated
that the workmen have to employ skilled officials to estimate the rate of payment in conformity with the general agreement; but we cannot be certain that a general percentage increase or reduction, even when accepted by masters and workmen, and applying to all piece-rates, bears an exact proportion to the actual earnings; for the general process of development has been that machines are continually “speeded up” (needing more exertion on the part of the operative), or simplified and improved (needing less exertion), to manufacture the same product. The recognised principle is to divide the extra receipts due to these causes between men and masters, so that if, for instance, there has been an improvement in machinery increasing the output 10 per cent. for the same labour, we may find 5 per cent. reduction in piece-rates, leaving the men an increase of about 5 per cent. on their earnings; for the actual calculation, however, it is necessary to get an estimate from an expert thoroughly conversant with the trade. A confusion is easily made when time- and piece-rates are paid in the same trade, which is, indeed, the case in most trades where piece-rates are general; thus many printers’ compositors are paid by the piece, so much per thousand letters, or sometimes per hundred lines, but there are also many hands on the “‘stab,” i.e. with weekly wages. These two groups of wages may be very different from each other and change at different rates. In large iron-works some men will always be paid at time-rates, either because of special skill, as in the case of designers, or of responsibility, as in the case of foremen or enginemen; and even men doing work described under the same term may be in some cases paid by time and in others by the piece. In such cases it is never safe to assume that time- and piece-rates change together and at the same rate.

This brings us to the question of the general usefulness of different classes of information. Leaving aside questions of intentional bias, we may take it that the statements of a casual observer outside the trade are not of great value, for it can easily be discovered by experiment that questions addressed informally to either employers or workmen yield very vague results. Statements
of wages of an individual workman, of which many are extant, often show clearly his economic position and throw useful light on the influence of irregularity of employment, but it is more probable that individual peculiarities will be reflected than that any general information will be obtained; yet by combining a great many statements by workmen of the same class, such as are to be found in the earlier Commissions, we may obtain a fairly accurate average. We get on safer ground when there is a generally recognised scale of pay prevalent over a district, such as would be recognised in a law-court if no explicit contract had been made. This was commonly the case before the "industrial revolution," and owing to this fact it was possible for Thorold Rogers to collect sufficient material for *Six Centuries of Work and Wages*. It is still the case for many time-wages; for instance in the building trades the hourly rate is usually understood, in agriculture the customary rate of a district is easily found by local inquiry, and sailors are engaged at legally recognised rates. This fact adds value to the vast number of scattered statements found in books and reports of Commissions, when mention is made of rates prevalent in a trade with which they are not directly dealing. Again, we can often depend on the evidence of skilled observers who have made it their business to thoroughly understand all the circumstances of an industry, as for instance the agricultural sub-commissioners of the Labour Commission; and the summaries or reports of commissioners who have heard all there is to be said on all sides of the question have special value, except in the rare cases in which the evidence has been influenced by interested parties with a deliberate bias. Other series of trustworthy figures may be obtained from the records of institutions employing workmen occasionally, as for instance the celebrated list of wages paid at Greenwich Hospital, which has been quoted *ad nauseam* in default of any other series dealing with the same period.

The American method is to deal almost exclusively with records of wages paid to individual workers, which have been extracted from the books of manufacturers; the objections to this lie in the
immense labour involved in making extracts, which leads to carelessness or even falsification of statements, the incompleteness of the results obtained, and the impossibility of following an individual for any length of time, owing to frequent changes of employer. The English method adopted in the “Wage Census” appears more satisfactory; there the total wages paid in a given time are stated by manufacturers directly from their books, together with the number of employés and enough subsidiary information as to various rates of wages to make a satisfactory survey of complete averages and distribution possible. The objections to this method lie simply in its incompleteness; many manufacturers, presumably those who paid the worst wages, made no returns, and many occupations were omitted, while casual or unattached labour hardly came within the cognizance of the Census. The following rule is important in this connection: in every statement of wages, in addition to the place and date, the source of the information should be known, and also the object with which it was made, and the extent of the district and trade which it is intended to cover.

It is perhaps hardly necessary to mention that account must be taken of many additions to and deductions from wages, and that the effect of change of custom on the relation between gross and net earnings and on payments in kind must be borne in mind in comparative statements extending over a series of years. The deductions include necessary payments for assistance in work, rent of machinery, payment for light, tools, oil, gunpowder, &c.; fines for bad work or breach of rules—sometimes amounting to a regular tax—and expense of getting to work; there are others less easy to reckon, and theoretically, perhaps, not entering into the question, such as compulsory deduction for insurance, specially high house-rent due to the necessity of living in a special district, specially high prices of commodities, those concealed extortions which have been diminished by the Truck Acts, expense of special clothing or of an arbitrarily high standard of living, all of which come under the economic question of real income, rather than the statistical question of wages. The additions are:—payments in kind,
which have gradually diminished throughout the century, and vitiate simple comparisons of money wages; free board, free house or ground, free clothes, cheap coals or free haulage, special facilities for cheap purchase without middlemen’s profits, bonuses, or special opportunities for earning extra money for special tasks. One of the advantages of the “kinetic” method is that errors from such causes are diminished in comparison; if workmen state their earnings too low in one year, they may be expected to do so in another; if manufacturers give wages of their most skilled or steadiest workmen at one time, they will take the same optimistic view at another; if we have taken too limited a view and recorded the wages of a special instead of those of an average set of men, we are still likely to find the same rate of increase with them as with the general run of workmen; if we have omitted fines and necessary disbursements throughout, our ratio is only affected if they have, relatively to wages, increased or diminished; if we have not been able to estimate payment in kind, perquisites or valuable facilities, our omission has less effect in a comparison than in a single estimate and shows only an exaggerated increase, perhaps capable of correction, due to the substitution, always gradual, of money for kind. The effect, in fact, of all bias is diminished, and so long as we confine ourselves to estimates made on the same principle, not, for instance, comparing a workman’s statement for one year with an employer’s for another, by the use of the “kinetic” method we avoid very many of these errors.

It appears at first sight to be more logical to consider family earnings rather than the wage of single men: to imagine a typical family with a definite number of wage-earners of different ages and to calculate what they could jointly earn at different periods, places or trades; but, though many interesting estimates exist for special times and places, this is impracticable on any large scale. It is not evident, moreover, that this method gives a better criterion of the position of the working-classes than the simpler plan of estimating the earnings of an ordinary man in full work in the prime of life; for it is very difficult to balance the advantages of facilities for child labour
against the resulting lack of education and hindrance to natural development, and it is questionable on which side of the account the effect of work by married women should be placed; it is even doubtful whether the opportunities of earnings presented to boys in a large town are an advantage.

This brings us to the very difficult question of women’s wages—difficult because the conditions have changed immensely during the century; on the one hand the opportunities of fairly well-paid work having developed, on the other the available supply of labour having increased; difficult also because so great a mass of women’s wages are not paid according to the unrestricted action of the laws of supply and demand; and difficult, finally, because the records are so meagre. The difficulty of the whole problem is increased by the apprentice system, with the rapidly changing rates paid at different ages and the variations of the age at which full wages begin to be paid. For these reasons it seems desirable to confine our attention for the present to the wages of adult males, and to postpone the consideration of the more complex question of family earnings.

The question of hours of work is best treated separately from that of wages. For separate trades, indeed, the statement that in one year a certain amount was earned for so many hours’ work, in another a greater amount in fewer hours, may give complete information; but for a general estimate it is futile to try to work out the hourly rate in order to make comparisons year by year, if only because an hour’s work varies so much in intensity.

Another problem, fitted for separate investigation, is that of the amount of irregularity of employment. There is, perhaps, no good reason for thinking that this has changed much for better or for worse in any part of the century, apart from the general fluctuations due to inflation and depression of trade which affect in particular the coal and iron industries; at any rate, any attempt to apply a factor representing regularity of work to each separate statement of wages would be futile. It is preferable to aim at such a statement
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as the following:—since a certain date the average wage has increased 20 per cent., so that the average annual wage of fully employed adult male workmen in a normal season, then £50, is now £60, and in the same period the average duration of the week’s work has diminished from 65 to 57 hours.

To simplify the problem yet further, it is best to aim first at calculating the change in the average, and afterwards to consider the distribution of wage-earners according to their earnings about this average. It would, of course, be possible that the average should have risen through exceptionally high earnings on the part of a few highly skilled men, while a larger section was falling into poverty; but, if we attempt to pay attention to this in the course of our calculations, we shall only hopelessly complicate our working. Having found our average, which, as is always the case with averages, carries us only a little way, it is then time to study the distribution about it, to find how many men earn wages within a certain distance of the average, how many far below it, and how many are in receipt of really considerable wages; and, if we leave out of account paupers and casual workmen, as fitter subjects for special investigation, it will perhaps be possible to obtain ultimately at least a partial solution of this further problem.
SECTION II.

NATURE OF MATERIAL AND CHIEF AUTHORITIES.

It is commonly said that the material for wage-statistics is conspicuous by its absence, and most authors who need such figures to illustrate other subjects are content to quote one or two estimates covering a very small part of the field; even Mr Mulhall, who has found statistics of almost every measurable quantity, is obliged to give very few figures of wages.

It is not true, however, that wage-figures do not exist, even in the case of England; for since 1886 at least there has been a great abundance of official material, while there is no scarcity of books and reports throughout the century dealing with special parts of the subject, and a great number of shorter pamphlets and tracts and many books devoting a short section to wages are in existence; but above all there are official publications and reports of commissions for the past hundred years, very many dealing directly with the condition of the working classes, while others, dealing primarily with administrative or commercial subjects (for instance, factory inspectors' reports), contain wage-figures incidentally, and to complete the examination of these it would be necessary to overhaul some 5000 volumes, each of 500 to 1000 pages. Besides these there are the journals of economic societies, and a library of reports of Trade Unions and of working-class or other newspapers. The fact is that the material is superabundant, and it is scarcely possible to give even a cursory glance at it all in any reasonable time; but its usefulness is not commensurate with its magnitude, for it is discursive,