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SOCIAL SURVEYS

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ECONOMICS

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SOCIAL SURVEYS

by

D. CARADOG JONES

FORMERLY READER IN SOCIAL STATISTICS
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PREFACE

THIS is not a Survey of Social Surveys, intended for experts. Its more modest purpose is to serve as a simple text-book for students with no special knowledge of the subject. It was therefore inevitable that much of the available space should be given to pioneers like Booth, Rowntree, and Bowley. My definition of a Social Survey, implied if not precisely formulated in the Introduction, ruled out Opinion Surveys such as those conducted by the British Institute of Public Opinion and Mass Observation; also fact-finding surveys which lay the major stress on regional planning, on locality rather than community, or on trade and industry.

The thread which strings the several chapters together is a developing technique. Many surveys of high quality have been made during the last twenty years, but of the more recent it can be said that in general it is the material, not the method, that is new. Chapter VII is introduced because it shows how, slowly but surely, belief in the validity of the sampling process grew in official circles. I have no excuse to offer for including Chapters X and XI, except that I could write with more confidence on the Merseyside Survey than on many others which it might have been more seemly to include. The justification for the next two chapters is that they not only provide instructive examples of method, but they treat of outstanding subjects, nutrition and the standard of living, both matters of vital concern to the people and closely linked with poverty surveys.

Facility in handling statistical material can only come with practice. The student should form a habit of checking numerical statements and of going to the original sources when possible. A few examples to be worked, and illustrative examples, are to be found in the Appendix.

For kind permission to quote from various works I have to thank Professor A. L. Bowley and Mr. Seebohm Rowntree; also the publishers of *Poverty: A Study of Town Life*, Life

and Labour of the People in London, and *Food, Health and Income* (Macmillan & Co.); *The New Survey of London Life and Labour* (Staples Press, formerly P. S. King & Son); *Livelihood and Poverty* and *Has Poverty Diminished?* (G. Bell & Sons and P. S. King & Son, for the Ratan Tata Foundation, London School of Economics); *Poverty and Progress* (Longmans, Green & Co.); *The Social Survey of Merseyside* (Liverpool University Press); and the Editors of the *Journal of the Royal Statistical Society*. I am also much indebted to the Director of the Social Survey for allowing me to make free use of material issued by his department, including a most serviceable *Handbook for Interviewers*. The last three chapters of the book are based on this material.

D. CARADOG JONES.

INTRODUCTION

IN his short account of the subject, Mr. A. F. Wells defines a Social Survey as "a fact-finding study, dealing chiefly with working-class poverty and with the nature and problems of the community"¹. This may seem unduly to limit the bounds of the subject; but, if properly interpreted, one need not quarrel with the description. In so far as precedence is permitted to decide the use of the term, it will be agreed that the definition brings into prominence the appropriate points. It emphasizes, first, the fact-finding nature of the study: it is not to be a dissertation in the air but a digging into the bed-rock of fact. Secondly, it is concerned chiefly with the condition of the working class, not with the class that has been labelled economically 'comfortable'.

But concern cannot be confined to the working class, because we are all members one of another. Hence, any one class can only be rightly viewed within the wider setting of the general social community. If any class gives rise to a problem, not only is the problem one for which the whole community must accept responsibility, but the way of life of other classes has a bearing on and relation to the origin and growth of the problem. Because of this intimate relationship and the danger of viewing the abnormal and the subnormal out of perspective, there is much to be said for defining the Social Survey in terms of the normal, while agreeing that special attention must be directed to those elements within the community which generate social problems; because here, if anywhere, there is urgent need for action, to prevent a sapping of the strength of the whole body politic.

The advantage gained by stressing the need first to examine the normal is that we cannot otherwise fully understand what is not normal. The normal serves as a standard of reference, a control group, alongside which subnormal and abnormal groups can be set for comparison. A Social Survey, in this wider sense, would call for a description, in more or less

detail, of the whole structure of the community selected for investigation, not merely the problem part of it.

To describe the structure of a community demands a close study of the people who compose it, and of the environment in which they work and spend their free time. No part of a community functions in a vacuum. People are born, grow up, and die in company with others. By this contact, active or passive, with people and things their lives are shaped. It is thus, in their day to day relations with one another, that they express their individuality and develop their character, making much or little of the talents with which they are endowed at birth. By observing their behaviour we judge their standard of living in the highest sense of the term.

While the environment is to be studied in its effect upon the community, the main interest is focused on the community. That is where the Social Survey differs from the type of Regional Survey associated in this country with the names of Patrick Geddes and Victor Branford. Their emphasis is on the locality, their aim to make a comprehensive study of all its features as they have developed, and the interaction of these features with the life of the inhabitants.

There is a still greater difference between the Social Survey and the Regional Planning Survey, where the stress is on the planning. Regional planners are concerned with the best use of the land and the most efficient means of transport in the region investigated. They determine what parts of it should be allocated to industry, to housing, and to general amenities.

An Industrial or Economic Survey is different again. Its function is to analyse the state of industry and commerce in a selected area, and the factors affecting the growth or decay of particular industries. Among these factors, clearly, management and labour are the most important.

A good case can be made for each type of survey. If competently carried out, on a co-ordinated plan to prevent overlapping, they would supplement one another. The social surveyor is certainly interested in all these other approaches, since all have a bearing upon the structure of the community which he seeks to describe. If some of his work is done for

him by surveyors of a more specialized type, he has no hesitation in making use of their facts and figures in so far as they appear to be reliable.

While the primary aim in a Social Survey is to make an accurate and impartial collection and presentation of facts, the results of careful observation not of hearsay, it is not a collection made merely to satisfy a collector's whim, a picture painted to please only the eye of the imagination: there is a definite purpose always in view. The administration of government, the development of new ideas to be translated into action, the reform of evils, all depend upon accurate knowledge of existing conditions: otherwise we work in the dark. The medical officer who is responsible for the health of the people, must be able to make a reliable estimate of the size of the population under his care, and of the number of births and deaths which occur in the course of the year, in order to calculate and trace the trends of birth rates, sickness rates, and mortality rates. He must know much more, but these are indispensable basic facts. In the past it was customary to act largely by trial and error, or on traditional beliefs which may or may not have had some foundation of practical experience to support them. But the scientific method is to test beliefs by observation before deciding whether or not they are trustworthy. In short, in dealing with phenomena in the natural world, the appeal to facts and figures, whether to support old theories or as a basis for new ones, is the final appeal.

But it is one thing to compile a correct record of facts: it is another and far more difficult thing to interpret these facts and their relation to one another correctly. Even in the natural sciences, where the conditions of experimental work are subject to a high degree of control, interpretation of results is difficult enough. The difficulties are considerably greater in the social sciences, where events have to be observed just as they happen, subject to a large number of uncontrolled factors, and where the human element is so uncertain and often seemingly capricious in its reaction to these factors.

'A further difficulty is experienced because social science is

much younger than natural science. Its technique is still in process of being developed. If the influence of one factor is to be adequately compared with that of another, it must be possible to measure the effect each produces. The estimates of different observers in the field of social science sometimes differ widely, because personal or subjective elements enter into the estimates. In order to conform to the standards set in the natural sciences, all measurements should be as objective as possible: the personal element must be reduced to a minimum, so slight indeed as to be negligible. This implies that different observers, following the same directions in making their observations, should reach broadly the same conclusions.

In the social sciences we cannot yet conduct all our experiments on these strict principles. The instruments to our hand are too rough to give satisfactory results. For instance, we can measure the height and weight of a school-child with scientific precision. By means of intelligence tests we can determine what is termed an intelligence quotient for the child, and two equally capable people using the same type of test should reach much the same result. On the other hand, two school doctors might independently assess the nutritional condition of children on an adjectival basis, placing each child into one of, say, four categories—excellent, normal, slightly subnormal, bad—and, while generally they would agree in their judgment, occasionally there would be remarkable divergences in their classification.² The differences between different observers would be found to be still more frequent and more pronounced if they were attempting to assess temperamental or moral characteristics, such as sociability or conscientiousness. Our definition of personality and character traits is not yet precise enough to permit of refined measurement. Indeed, we cannot hope to measure such abstract qualities directly: we must look instead for some way of correlating them as clearly as possible with actions to which they give rise.

There is evidently wide scope for original enquiry along these lines. Some will no doubt regard the search for even an indirect

measuring gauge of temperamental and moral qualities as a hopeless quest from the outset. But the success that has been already achieved in the measurement of heat, light, and radio-active emanations, and in the testing of intelligence and other intangible human characteristics—all of which at one time would have been regarded as beyond belief—does not warrant so pessimistic an outlook. Certain it is that, until an objective assessment of such qualities becomes possible, we are prevented from taking adequate stock of the most significant part of our assets in any selected area—namely, the human beings inhabiting the area—and from deciding whether their value is increasing or deteriorating.

In this volume an attempt will be made to trace the growth of the application of scientific method in social surveying, from the dawn of English History, when Domesday Book was compiled, to the present day. It is hoped that such a study may encourage the belief that more rapid progress should be possible in the near future now that our technique has been so greatly improved.

REFERENCES

¹ *The Local Social Survey in Great Britain*, p. 13 (published for the Sir Halley Stewart Trust by Allen and Unwin, 1935). Though the treatment is slight, this monograph is a useful introduction to the subject.

² See a paper by R. Huws Jones in *Jnl. Roy. Stat. Soc.*, Vol. CI, Pt. I, 1938, on *Physical Indices and Clinical Assessments of the Nutrition of School Children*, which revealed not only surprising differences between different School Medical Officers in assessing the same children, but differences also in assessments by the same doctor of the same children after only a short lapse of time.

CHAPTER I

DOMESDAY BOOK

Origin of Domesday—The first great English Survey was ordered by William the Conqueror and was completed in 1086. It was said to be known as Domesday because it was accepted as a faithful record of facts as they were when it was compiled, and no appeal was allowed against its witness in a court of law in subsequent times. Even to-day we sometimes have to turn to Domesday Book, because it supplies the only existing direct factual evidence concerning social conditions at this early period of our history, a striking illustration of one important use to which such a survey can be put.

But the main purpose of nearly all, if not all, nation-wide surveys, undertaken by official direction in different parts of the world in early times, has been to ascertain man-power for waging war and to make an assessment of other resources, in cash or kind, available to fill the coffers of the ruling Sovereign and his Government or those dependent upon them.

This was true of the Domesday Survey. Weak kings had collected tribute (Danegeld) from their people to bribe the Danes from attacking their realms. Others had used the money they collected to arm their soldiers to defend themselves against attack. The more systematic William the Conqueror determined to make a thorough examination of his resources, and to discover incidentally what taxes he could exact from his estates for his own ends.

Rudiments of Surveying—It will be well to make a brief digression here to draw attention to certain fundamental questions which are common to all surveys. What information is the survey expected to produce? What questions must be asked to provide the information? Who is to ask these questions and who is to answer them? Care must be taken by those responsible for the design of the survey to see that

the questions are rightly understood by the questioned as well as the questioner. There may be some element of doubt in what looks like a simple and straightforward question. For instance, if we ask a person's age, do we mean his age last birthday? If so, then presumably he should answer 20 to-day even though he may be 21 to-morrow. Clearly there must be agreement beforehand as to the precise interpretation of each question. It is customary, therefore, for present-day investigators to 'try-out' all the questions they propose to ask on a small sample of the class of people to be investigated, in order to be quite sure that they contain no hidden obscurities or ambiguities.

The essence of good surveying consists in sparing no pains to make the first stage of the enquiry as perfect as possible. Obvious as this seems, it is not infrequently overlooked. Yet, no matter how elaborate the subsequent analysis of the data collected may be, and with what good judgment conclusions are drawn from the analysis, the results will be worthless if they are based on unreliable material.

Questioners and Questioned—Under the feudal system which then prevailed King William made the officers of each Shire or County responsible for collecting its allotted tax from the lords of the manors situated in the several Counties. These lords in their turn collected the tax from all their tenants. To determine the total amount of tribute to be paid by each County and by each Hundred was one of the chief aims of the Domesday Survey. The Hundreds were administrative units into which the Counties were subdivided. It is possible that each Hundred contained about that number of manors, and it was evidently both tactful and convenient for the king to deal with the manor lords rather than with their tenants directly. He had early discovered that the secret of good government was to delegate responsibility and to chose the responsible officers wisely.

Travelling Commissioners were appointed to carry out the Domesday Survey. The nearest modern parallel to them would be the Judges who travel about England to conduct Assizes. These Royal Commissioners questioned, on oath in public

court, panels of twelve jurors, priest, steward, and villeins, English and Norman, representing each township and lords of the neighbouring manors.

The Questions asked—The greater part of the country at this period was of course rural, and that accounts for the nature of the questions asked. They related to the assessment of each manor; the amount of arable land associated with it; the number of oxen available for the plough and the number which might be so used; the amount also of pasture-land, common land for cattle, woodland for pigs, and river meadow; the number of fisheries, water-mills, salt-pans; the number of peasants according to class; the estimated annual value of the whole, past, and present; records of military service due; markets, mints, etc.

Although these particulars were assembled according to Hundreds and townships, they were subsequently classified in Domesday Book for each Shire according to holdings: first, that of the king; then those of various religious houses; then those of other chief tenants; and finally those held by such as women, English thegns, etc. Thus the book contained in effect a record of the greater part of the country's resources. In it the king had fairly complete information as to who was liable for taxation throughout his kingdom, and an estimate could be made in each case of the extent of the liability. The information was not complete because the survey did not cover quite the whole country. For instance, the counties of Northumberland and Durham, and such important towns as London and Winchester, were omitted.

How far the record was an accurate one it is not easy, at this distance of time, to say. But the problem of collecting such statistics would be much simpler then than it would be to-day, because the population was so very much smaller. Trevelyan estimates that it did not number more than $1\frac{1}{4}$ or $1\frac{1}{2}$ million and that it rose to perhaps $3\frac{1}{2}$ or 4 millions by 1349, when the increase received a temporary check by the Black Death.¹ Life, too, was much simpler, the industries being few and well marked, and the authority of questioner over questioned was much greater then than it would be now.

Examination shows that the questions asked were reasonably straightforward, being of a factual or numerical type which should have presented no serious difficulty to responsible practical people living on the spot.

REFERENCES

- ¹ *History of England*, G. M. Trevelyan, p. 148 (seventh impression, 1929).

CHAPTER II

STOCK-TAKING

BETWEEN Domesday and the events which led to the taking of the first decennial census there was a lapse of roughly seven centuries. Strange that there should be so great a gap! The manager of every well-conducted business takes stock of his goods and makes a valuation of them at least once a year. How much more important it is for the Government to take stock of the nation's resources at regular intervals. The Chancellor of the Exchequer does, in fact, to-day present an annual budget of national income and expenditure. Estimates are also made of the distribution of private incomes at the disposal of individuals. He brings before Parliament proposals for taxation in order to meet the estimated cost of administration, at home and abroad, during the ensuing twelve months. Annual returns are issued of the output of mines, the acreage of land under different crops and the totals of various live-stock in the country. The Board of Trade reports frequently upon the output of important industries and conducts periodically a comprehensive Census of Industrial Production; and statistics are published by other Government Departments of houses and factories built or under construction. This by no means exhausts the present-day account of official stock-taking.

Difficulties in Valuing Wealth—Valuable as all this is, more is needed in order to produce a complete and co-ordinated picture. An attempt should be made every few years to estimate not only the income, and output, in real terms such as those listed above, but also the aggregate wealth of the nation. This is not a simple matter, because agreement must first be reached as to what constitutes wealth, for there are many different types. The common basis for valuing things which are very different in character is money. But different countries have different currencies or money systems. Moreover, the value of the English pound, for instance, does not bear an invariable

relation to the value of the American dollar; and neither pound nor dollar bears an invariable relation in value to other commodities. The prices of commodities in general move in fact up and down, which is only another way of saying that simultaneously the value of the pound and the dollar move down and up. In other words, the pound sterling is not, like the standard foot-rule, a fixed and infallible measuring instrument.

There is another difficulty which must be faced. The most important form of wealth which any nation possesses, as we have already seen, is its people. Indeed, nothing has any value until men and women give value to it, a value governed—in a free market—by the keenness of their desire for it, which can only be measured by comparison with their desire for other things. Not only would things have no value, the term wealth itself would have no meaning apart from human need and consequent demand. Demand is affected also by sentiment and by fashion. The pictures of a famous painter and the books of a popular writer may go quite out of favour, and the singing of a music-hall artiste may command a high price only for a short time. It is this personal or subjective element in valuation that, because of its inconstancy, makes the wealth of nations so difficult to measure.

Human beings, by their demand as consumers, thus give value to things material, like food and clothing, cars and wireless sets; and to things immaterial, like the manipulative skill of the surgeon or engineer, the administrative experience of the civil servant, the didactic power of the teacher, or the personal service of the home help. As producers also, they add considerably to the value of the raw materials and food which are extracted from the earth or grown upon its surface. They turn the raw materials into finished products for use or ornament. By the invention of machinery and the subdivision of labour, they are able to produce a far greater quantity and variety of serviceable commodities. It follows that those countries which are most advanced industrially are, as a general rule, the wealthiest. Their wealth depends on their productive man-power, their natural resources, and what they are able to make out of these resources by their accumulations of capital

and skill, which are the product of past years of experience and industry. Other countries, like China and India, which have a very low standard of life at present, may yet be potentially wealthy.

Valuation of Human Wealth—In making a systematic survey of the resources of any country, therefore, it is clear that first place ought to be given to the people. It is also clear that our concern would not be only with the number of the people, but also with their quality. Since man must be viewed in his dual capacity, as both producer and consumer, an assessment of his value would have to take into account his expectation of life in years, and his estimated production and consumption during those years. The net balance struck between the two would give his estimated present value.

In estimating production we ought to bear in mind also that a full life is made up of much more than eating, drinking, clothing ourselves, and keeping ourselves housed in tolerable warmth and comfort. These are the means, not the ends of life. Far too many people in the past in this country, and a majority in some parts of the world to-day, are driven by the force of economic circumstances to spend most of their thought and energy upon the means alone. But there is a wide difference between mere existence, under haphazard and maybe unpleasant conditions, and living an orderly, happy, and cultured life. Moreover, the qualities which make a dexterous dock labourer, a clever mechanic, a good social worker, or a successful business man are not the same as those which make a strong leader, a fine artist, or an original thinker. In different occupations different stress is laid on physical, mental, temperamental and moral qualities. How then are we to evaluate services rendered to the community of a non-material kind? Even if such services are paid for, to capitalize an income which is dependent upon fickle public taste is hazardous. The whole subject bristles with difficulties which have not been satisfactorily solved.

But because we cannot yet make, with our present instruments, a precise assessment of many forms of national wealth, that is no reason for neglecting to make the best estimates we

can of those forms of wealth which are subject in some degree to qualitative formulation. We have at least made a good start in the periodical census of the people, mainly¹ quantitative though it is in character, for it now reaches a very high standard in accuracy—within its predetermined limits—and in the value of the information it yields. Some account will be given of it in the next chapter.

REFERENCES

¹ Not entirely; age, for instance, is one aspect of quality and a detailed analysis of the population is made by age.

CHAPTER III

THE CENSUS

Census Proposals in Parliament—The first Bill, for “taking and registering an annual account of the total number of the people, and of the total number of marriages, births and deaths . . . in Great Britain”, had influential backing. It was introduced in parliament in 1753 by a son of the Archbishop of Canterbury and was carried by a large majority. But several speakers condemned it in terms which to-day sound absurdly extravagant. The fear was even expressed that “some public misfortune or an epidemical distemper should follow the numbering”. Here is an extract from one of the speeches: “I did not believe that there was any set of men, or indeed, any individual of the human species, so presumptuous and so abandoned as to make the proposal we have just heard. . . . I hold this project to be totally subversive of the last remains of English liberty. . . . The new Bill will direct the imposition of new taxes, and, indeed, the addition of a very few words will make it the most effectual engine of rapacity and oppression that was ever waged against an innocent people.” Apart from these extreme outbursts, the main criticisms against it were that it would be very costly, the results could not be trusted, and it would be used as an instrument for additional taxation and for conscription. These objections evidently found strong support in the House of Lords, for there it was thrown out at the second reading.

A Survey of Scotland—No fresh proposal for a census came before the House of Commons until half a century had elapsed, and by this time a remarkable change had taken place in public opinion. For this change some credit must be given to the example set by Sir John Sinclair, first President of the Board of Agriculture, who, during the last decade of the eighteenth century, had compiled and published *The Statistical Account of Scotland*, a comprehensive record in twenty-one

volumes of the natural history, population, and productions of the country. For his information he went to the ministers resident in the several parishes of Scotland, so that his work contains a first-hand account of conditions in each parish, varying naturally in quality with the ability to observe and report on the part of more than nine hundred clergymen upon whom the author depended. The work is a survey of the political, ecclesiastical, and agricultural divisions of the country; its climate, its population by sex and marriage state, the healthiness, fertility, and longevity of the people: their occupation, whether on the land or in manufacture and commerce. For his personal initiative and persistence in bringing so big an undertaking to a successful conclusion Sir John Sinclair must certainly be classed as a pioneer in the collection of social statistics. Tributes to the value of his work were paid by Jeremy Bentham and Lord Colchester among others, and the latter's knowledge of what the zeal of one man had accomplished in Scotland no doubt encouraged him to bring forward in parliament in 1800 a new plan for taking a British census.

A Population Scare—Fifty years earlier alarm had been felt lest a decline in population should be revealed and so betray the country's weakness to its enemies. But the pendulum had now swung in the opposite direction, and the factor chiefly responsible for the change was the anonymous publication in 1798 of the well-known work on *Population* by Thomas Malthus. It so scared members of parliament and the public that they began seriously to believe that the population would very soon be increasing at such a rate as to outstrip the means of subsistence.

Malthus had received his early education from his father, who was a quiet studious man, a friend of Rousseau and a fervent disciple of Godwin. After a distinguished career at Cambridge, he entered the Church. It was at this period of his life that Godwin's work on *Political Justice* and his Utopian dream of universal prosperity set the young man thinking. He held long discussions with his father on the subject. Especially was he struck by the observation that a brake is automatically applied

to prosperity as a consequence of the stimulus it immediately gives to population to expand unduly. A crude quantitative formulation of the theory was expressed in terms which have become familiar: *While the means of subsistence increase in arithmetical progression, population tends to increase in geometrical progression unless it is held in check—as it is bound to be—by the effects of vice and misery.* His more considered views, expounded in later editions of his book, were that 'prudential' checks on the growth of population—restraint in marriage and in the production of children—can take the place of 'natural' checks, the consequence of vice and squalor, thus leaving open the way to social improvement.

The First Census—Under the altered conditions, produced by these ideas, aggravated as they were by dearth and the rising cost of food, a Bill, for "taking an account of the population of Great Britain, and of the increase or decrease thereof", passed all its stages without opposition in the House of Commons and the first census followed in 1801.

In order to be in a position to judge the value of the results obtained, it is necessary to look into the method of collecting the original returns. The responsibility for making the count of the population was laid upon the overseers of the poor or, in default of them, "some substantial householder in each parish, township, or place". But the task of collecting the returns was given to the Justices of the Peace. They delivered them to the High Constables, who were to pass them on by a certain date to the Clerks of the Peace or Town Clerks, and they in turn forwarded them to the Home Secretary. Clearly the key-men in this process were the overseers or householders who made the preliminary count.

But this count was only half the matter. The other half concerned the increase or diminution of the population, which was also to be measured. This duty was entrusted to the clergy and ministers of each parish, who transmitted the particulars they collected to their bishops, and they sent them on to the archbishops.

Questions put to Overseers—The precise wording of the questions addressed to overseers and parish priests, respec-

tively, is to be noted so that the reader may see for himself what they involve. Three questions were put to overseers as follows:

(1) How many inhabited houses are there in your parish, township, or place; by how many families are they occupied; and how many houses therein are uninhabited?

(2) How many persons (including children of whatever age) are there actually found within the limits of your parish, township, or place, at the time of taking this account, distinguishing males and females, and exclusive of men actually serving in H.M. regular forces or militia, and exclusive of seamen either in H.M. service or belonging to registered vessels?

(3) What number of persons in your parish, township, or place are chiefly employed in agriculture; how many in trade, manufactures, or handicraft; and how many are not comprised in any of the preceding classes?

Put briefly in tabular form, these questions become:

(1) <i>Houses</i> No. Empty? No. Occupied? <i>Families</i> No. Occupying Houses?	(2) No. of Males*? No. of Females? (*excluding soldiers and sailors)	(3) No. chiefly employed in Agriculture? No. employed in Trade, Manufactures, or Handicraft? No. not comprised in the above classes?
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The overseers were required to obtain this information "by proceeding together or separately from house to house or otherwise" as they might judge expedient.

Difficulties Encountered—At first sight the questions asked seemed perfectly clear. But often in such cases it is only when the returns are examined that doubt begins to arise as to the possibility of misunderstanding. That such doubt did arise on this occasion under certain heads is indicated by amended-

ments and additions introduced in the framing of the questions when the next census took place in 1811. For instance, this addition was made to the first question, namely: How many houses are now building and therefore not yet inhabited? Houses nearly complete and so almost ready to be occupied may have been counted among the empty houses, or they may have been omitted from the reckoning altogether, at the first census. The addition to the question in 1811 thus made for greater accuracy and a more complete record of houses already, or about to be, available.

Difficulties were experienced also in answering the third question. Some overseers appear to have been doubtful as to whether the intention was to discover only the number of persons *actively engaged in* the two principle classes of industry distinguished, or whether they ought to include also those *dependent upon* them. Some interpreted the question one way and some the other. The failure here was not so much in the wording of the question as in the lack of clear instructions to overseers concerning them. The consequence was, as we read in the Report on the Census for 1811, that the "Question regarding Occupation may be said to have produced no result in 1801, if indeed an incorrect result be not worse than none, as giving colour to unfounded speculations". And the authors point to this as an early example of the difficulty of deciding (1) what are suitable subjects for enquiry by questions submitted generally for answer to persons, a large proportion of whom are imperfectly educated; and (2) how such questions should be worded and explained, having regard to the deficiency of education referred to.

Questions put to Clergy—The remaining two questions in the first census, addressed to clergy and ministers, were as follows:

(4) What was the number of baptisms and burials in your parish, township, or place in the several years,

1700, 1710, 1720, 1730, 1740, 1750, 1760, 1770, 1780, and each subsequent year to the 31st December, 1800, distinguishing males from females?

(5) What was the number of marriages in your parish,

township, or place in each year from the year 1754 inclusive to the end of the year 1800?

These questions were asked of the parish priests, because only they kept any systematic record of baptisms (which were a good guide to the number of births in so far as it could be assumed that most infants were baptized), marriages, and deaths. The changing numbers over the period of years selected would throw some light on the question posed by Parliament to the local Census Authorities, whether the population was tending to increase or diminish.

After the labour of collecting and assembling all the answers to the five questions was completed, the next stage was to sift the material carefully and put it into a fit state for publication. This work was entrusted to one John Rickman, a friend of Charles Lamb. He was responsible in fact for writing the first three Census Reports, and their quality show him to have been a man of insight and sound judgment. This was fortunate, because the interpretation of results is one of the most difficult parts of survey work.

Two Great Acts—Since 1801 a census has been conducted in this country every tenth year without a break up to 1931, but it would be tedious to trace in detail the additions and improvements introduced at each census. There was in fact no significant change in the scope or the method of taking the census in the years 1821 and 1831. But between 1831 and 1841 two Acts of Parliament came into operation, the Poor Law Act of 1834 and the Registration Act of 1836, which materially altered the machinery of the next and all subsequent censuses. They are landmarks in social legislation and they deserve special notice.

In early times, under the monastic system, charity had been regarded as so much a Christian duty that it was given often with little discrimination, thereby creating beggars in the readiness to relieve all who pleaded want! But after the dissolution of the monasteries, in the reign of Queen Elizabeth and during the Stuart period, each parish became responsible for its own poor, and a poor rate was levied to relieve distress and to provide the able-bodied with work. This system was

superior to any which continental countries could boast and on the whole it served its purpose well for several generations. The chief defect associated with it was the Act of Settlement of Charles II, which severely restricted the flow of labour, because it encouraged local authorities to send back to their original parishes new-comers, however capable, from fear lest they might later become a burden on the rates.

Towards the close of the eighteenth century a change in conditions came. The cumulative effects on employment and wages of the enclosure of common lands and the loss of home industries, following the attraction of labour into factories, coupled with the rise in prices due to the Napoleonic wars, made the poor—especially the agricultural poor—feel the hard pinch of poverty. It was in these conditions that certain magistrates in the Speenhamland district of Berkshire hit upon the expedient of raising wages above starvation level by means of a subsidy out of the rates. This suited employers well, for they could get their labour cheap at the expense of the community, and the Speenhamland example was followed in other counties, causing widespread demoralization. The vicious system was only ended by a radical reconstruction of Poor Law Administration with the Act of 1834.

This Act created a network of Poor Law unions throughout the country. Two years later the civil registration of births, deaths, and marriages in England and Wales was introduced by the Registration Act, and the new Poor Law unions were adopted as registration districts, the local cost of registration to be met out of the poor rates levied by boards of guardians elected by the ratepayers. By a natural development the district superintendent registrars were appointed as controlling agents for census purposes in 1841, and the planning and direction of the census as a co-ordinated whole was placed in the hands of the Registrar-General of births, deaths, and marriages stationed in London.

Advance in Census Procedure—Under this scheme registration subdistricts were divided into a number of enumeration districts, for each of which an enumerator was appointed. He or his assistants left with each occupier of a dwelling in his

district during the week ending Saturday, 5th June, 1841, a schedule of questions relating to all persons who slept in the said dwelling on the night of 6th June. It was the statutory duty of the occupier to answer the questions in the schedule, and it was the responsibility of the enumerator or his assistants to correct or complete any defective schedule when calling for it on, or soon after, 7th June.

The 1931 Census—The method of collecting the census raw material introduced in 1841 has remained substantially unaltered ever since, although the questionnaire has been extended and improved. For a full appreciation of the nature of the improvements made decade by decade, the fruit of ripening experience, the comments made concerning the census forms in successive decennial Reports should be studied. An abbreviated copy of the form of questions used in 1931 is appended for comparison with the questions asked in 1801.

Duplications and omissions in counting are, as nearly as possible, prevented now by confining the count to people who sleep in each dwelling on census night. It has been customary also, before recent counts, to instruct older children attending schools under Local Education Authorities as to the proper way of filling in the census forms. The children have then been able to help the less intelligent parents in poor districts. The explanatory notes accompanying the actual form were fuller than those reproduced here, and any normally intelligent person should in fact have had little difficulty in answering the questions with their aid. Appeal could be made to the enumerator in the event of doubt about any point.

In the United States census—and the same applies to certain other countries—the count is of the *de jure*, or normally resident, population, not of the *de facto*, or actual, population present on the census date. It is possible to distinguish residents from visitors at the 1931 English census by the answers to question 3.

The most complicated questions in 1931, if any can be so described, were the last three. Question 10 distinguishes the industry in which a person is engaged from his occupation,

1931 CENSUS

1	2	3	4	5	6	7	8	9	10	11
Name	Relation- ship to Head of House- hold	Usual Resi- dence	Sex	Age	Condi- tion as to Mar- riage	Birth- place	Nation- ality	Per- sonal Occu- pation	Em- ploy- and Em- ployer's Business	For persons 14+, neither usually fol- lowing an occupa- tion for profit or payment nor re- tired from such occupation

NOTES

1. To include all alive, at midnight of Sunday, 26th April, 1931, who passed the night in this establishment or arrived here before the collection of the schedule and were not already enumerated elsewhere.
2. State whether Head, or Wife, Son, Mother . . . Visitor, Boarder, or Servant.
3. For persons who usually reside here, write *Here*; for those who have a more usual residence elsewhere, give full postal address; for those with no settled residence, write *None*.
4. *M* or *F*.
5. In years and months; for infants under 1 month old, write *under 1 month*.
6. For persons aged 16+, state whether single, married, or widowed; if marriage dissolved by divorce, write *D*.
7. If born in the U.K., write name of county and town or parish; if born outside the U.K., write name of the country, and of the State, province, or district; if born at sea, write *at sea*.
8. If born in a foreign country or at sea, state nationality, *e.g.* French, Polish, British born, naturalized British subject, etc.
9. For persons of 14+ following some occupation for payment or profit (whether working or out of work at the time of the census) or who formerly followed such occupation and is now retired. If out of work or wholly retired, that should be stated. If more than one occupation, state only that by which the living is mainly earned. Apprentices and article clerks should be included. The particular kind of work done, material worked in, or article made should be stated.
10. For domestic servants and others in private personal service, write only *private*. An occupied person who employs others and who works on his own account should say so.
11. Write *private means*; *home duties*; *school*; *law student*; etc.

which is dealt with in question 9. For instance, a man may be a clerk in a bank, in a railway booking office, in an engineering works, in a sweet factory, or in a retail store, all representing different industries. By the answers to questions 3 and 10 it was possible to get some idea as to the distance people had to travel to their work in 1931. If proper attention was paid to the instruction in the note on question 9, the answers would provide a check on other, but incomplete, Government records relating to unemployed persons and retired persons. The purpose of question 11 was to close any gaps left concerning persons over 14: if neither gainfully occupied nor retired, such persons would not be covered by questions 9 and 10.

Introduction of National Registration—A break occurred for the first time in the decennial census series in 1941, owing to the war. Anticipating this, and the need for up-to-date statistics of the population for rationing, civil defence, and military purposes, the Government compiled a Register of the people on 29th September, 1939, collecting particulars of every individual by sex, date of birth, condition as to marriage, occupation and membership of the Services. Since that date everyone in the country has, or should have, an identity card issued by the National Registration Office.

Great Britain was then divided, for various administrative purposes connected with civil defence, into twelve separate regions. These regions were also used for the administration of food rationing. Since old ration books are replaced each year by new ones, a check is provided on the population by sex and age in each region, and this information is supplemented by the record of births and deaths which have taken place between the dates of issue of the old and the new books. Each insured person possesses in addition a 'book' containing his employment record. By the exchange of these national unemployment insurance books, which usually takes place in July of each year¹, a similar check is provided on the insured occupied population.

It is clear that the raw material of the census, covering as it does the whole nation, provides a mass of information concerning individuals and households, which can be analysed by

sex, age, marriage, distribution by size of household, and occupation in a variety of ways. It was supplemented by a Survey of Overcrowding in England and Wales, undertaken for the first time in 1936. Reference will be made to this in a later chapter.²

REFERENCES

¹ Under the new National Insurance Act which came into force in July, 1948, a quarter of the books will be exchanged at one date in each quarter.

² See Chapter IX, pp. 115, 116. The student is recommended to examine the various census volumes for himself. They should be available in the central Reference Library of any large town. Only thus will he get a sure grasp of the large field they cover.

CHAPTER IV

LONDON SURVEY

Charles Booth—Up to this point discussion has been confined to surveys of an official character and of national scope. We turn now to consider the classic work of Charles Booth, pioneer in local social surveys of the best accepted type carried out by private enterprise.

We get an insight into the character of the man and the motives which inspired him to undertake his great task in a brief anonymous but intimate record of his life published a year after he died.¹ He came of good stock. Both his grandfathers, Thomas Booth and Thomas Fletcher, were prominent Liverpool Unitarians. Sir Henry Roscoc, the distinguished chemist, was another grandson on the Fletcher side. Thomas Booth had come to Liverpool from the country as a young man with his brother and had prospered there in business. One of his sons had inventive genius and collaborated with George Stephenson in developing the use of steam for road traction; a second became chief of the permanent staff in the Board of Trade. The third son, father of Charles, though considered less able, was said to be "possessed of a sweet disposition and most lovable character". After his mother's early death Charles drew closer to his father. He used to "tell of how his father would listen indulgently to all his crude ideas and schemes, putting in, now and then, a word of criticism, but ever ready to hear him, and never belittling his plans or snubbing him."²

Charles and his brother Alfred were the founders of what developed from small beginnings into the great Booth Steamship Company. Apart from his business, in which he could become passionately absorbed, his chief interest was in working people, and the conditions under which they lived and worked. He was largely instrumental, against a good deal of opposition at the start, in arousing public concern in the plight of the

aged poor which eventually bore fruit nearly twenty years later in the Pensions Act of 1908. As a young man we read that he ever more earnestly sought answers to the questions: "Who are the people of England? How do they really live? What do they really want? Do they want what is good, and if so, how is it to be given to them?"³ As he pondered over these questions, a new thought came to his mind. Why not make an attempt to discover, by patient observation and the collection of facts, how the people of London do, in fact, live and work? So began a laborious sequence of researches, continued for fifteen years and taking final shape in seventeen volumes published in 1902. So big an undertaking could not have been accomplished by the efforts of one man. Booth had the gifts of sympathy, leadership, and scholarship, rare in combination, which attracted to his aid people who later achieved distinction in other ways. Among them were two outstanding women, Beatrice Webb (then Beatrice Potter) and Clara Collet.

First Fruits of the Survey—The first account of Booth's researches is to be found in two papers he contributed to the *Journal of the Royal Statistical Society*.⁴ These are well worth reading, because they contain a clear explanation of the ground-work of the survey as envisaged by its author, and his original methods are illustrated and tested by means of what we should now term a 'pilot survey', which is described in the earlier of the two published papers.

A distinctly modern note is to be found in one passage of this first paper. It is worth quoting, for one is disposed to question whether we have yet emerged into clear daylight out of the fog which Booth describes. He feels oppressed by

the sense of helplessness that tries everyone; the wage-earners . . . are helpless to regulate or obtain the value of their work; the manufacturer or dealer can only work within the limits of competition; the rich are helpless to relieve want without stimulating its sources; the legislature is helpless because the limits of successful interference by change of law are closely circumscribed. From the nelpless feelings spring socialistic theories, passionate sugges-

tions of ignorance, setting at naught the nature of man and neglecting all the fundamental facts of human existence.⁵

Had Booth been writing to-day, when socialism is the accepted creed of many, he might perhaps have replaced the word 'socialistic' by 'communistic' in the passage quoted. However that may be, he does not face the situation he describes in a mood of fatalism. His outlook is decidedly constructive, for he goes on to say:

To relieve this sense of helplessness, the problems of human life must be better stated. The *a priori* reasoning of political economy, orthodox and unorthodox alike, fails from want of reality. At its base are a series of assumptions very imperfectly connected with the observed facts of life. We need to begin with a true picture of the modern industrial organism, the interchange of service, the exercise of faculty, the demands and satisfaction of desire. It is the possibility of such a picture as this that I wish to suggest, and it is as a contribution to it that I have written this paper. . . . I have had no foregone conclusions, and it is rather to the method here employed than to the results yet shown that I pin my faith.⁶

Attack on Two Fronts—The general plan which Booth had in mind was to make a twofold approach to the people he wished to investigate. His intention was, by district enquiries, to show the conditions under which they lived and, by trade enquiries, to show the conditions under which they worked. Like trades were to be grouped together as in the Census classification. He hoped, by this dual approach, to be able to check his results, since the local enquiries would indirectly throw light on the manner of employment and the trade enquiries on the way of life.

Use of School Board Visitors—To get the basic material of the local enquiries Booth made use of School Board visitors.⁷ He adopted for this purpose the convenient division of London into parishes, to fit in with the statistical records of the 1881 Census, a division which could be suitably related also to the districts served by the School Board visitors. The information they were able to supply was taken as the framework of the

picture of the life and labour of the people. Their routine duties brought them into close natural touch with the class of people in whom he was interested. In the course of several years' work in the same districts, calling from house to house, many of them had accumulated an extensive store of information about the families they visited.

In a later account of his work Booth says:

No one can go, as I have done, over the description of the inhabitants of street after street in this huge district, taken house by house and family by family—full as it is of picturesque details noted down from the lips of the visitor to whose mind they have been recalled by the open pages of his own schedules—and doubt the genuine character of the information and its truth. Of the wealth of the material I have no doubt. I am indeed embarrassed by its mass, and by my resolution to make use of no fact to which I cannot give a quantitative value.⁸

It should be observed at this point that the School Board visitors could have no detailed information concerning particular families other than those in which there were children of school age, because their official duties had only to do with school children. It is necessary, therefore, to bear in mind that the material on which Booth relied for this part of his survey came from that part of the population alone which was made up of families containing school children. In order to draw conclusions about the rest of the population he had to make certain important assumptions. Also, it must be noted that the School Board visitors were not asked to collect information specially for the purposes of the survey. Only such information was used as came to them in the normal discharge of their duties. Judgment of the economic position of the family, upon which so much depended as is clear from Booth's definition of poverty, must have been somewhat variable. Some visitors were more trustworthy than others, because some must have had more ability and some longer experience than others at their work.

An Occupational and Means Classification—The heads of families—those of them with school children—were all classi-

fied according to the nature of their employment. A further division was then made assigning each family to a particular class, judging by apparent status and means. Also, the streets were classified according to the predominant character of their inhabitants.

The thirty-eight sections into which heads of families were divided, according to the character of their employment, may be summarized as follows:

BOOTH'S OCCUPATIONAL CLASSIFICATION*

1 to 6	Different classes of labour, lowest class, casual, regular, etc.
7 to 12	Different classes of artisan.
13 to 18, 28, 29	Sundry wage-earners, clerks, and sub-professional.
19 to 21	Employers and home industries.
22 to 27	Street sellers, general dealers, shops, coffee and boarding-houses, licensed houses.
30, 32	Professional and independent.
31	Ill and no occupation.
33 to 38	Female heads of families, etc.

The following were the eight classes into which families were divided judging by apparent status and means:

BOOTH'S MEANS CLASSIFICATION †

H	Upper middle class.
G	Lower middle class.
F	Higher class labour.
E	Regular standard earnings.
D	Small regular earnings.
C	Intermittent earnings.
B	Casual earnings.
A	Lowest class of occasional labourers.

* *Life and Labour*, Vol. I, p. 34. His more detailed classification will be found at the end of this chapter, p. 50.

† *Life and Labour*, Vol. I, p. 33.

Definition of Poverty—Booth arranged this last table in the reverse order, A to H downwards. The above arrangement, with a line drawn below class E, serves to direct attention to the position of classes A, B, C, D, all of which are below the line of poverty, as defined by Booth. Classes C and D together compromise the 'poor' and A and B the 'very poor'. As he himself states, these divisions are necessarily arbitrary.

By the word 'poor' I mean to describe those who have a fairly regular though bare income, such as 18s. to 21s. a week for a moderate⁹ family, and by 'very poor' those who fall below this standard, whether from chronic irregularity of work, sickness, or a large number of young children. I do not here introduce any moral question: whatever the cause, those whose means prove to be barely sufficient, or quite insufficient, for decent independent life, are counted as 'poor' or 'very poor' respectively; and as it is not always possible to ascertain the exact income, the classification is also based on the general appearance of the home. Cases of large earnings spent in drink are intended to be excluded, as not properly belonging to the poor, but the results of ordinary habits of extravagance in drink in inducing poverty are not considered any more than those of other forms of want of thrift.¹⁰

Elsewhere describing class B, he says:

These people, *as a class* are shiftless, hand to mouth, pleasure loving, and always poor; to work when they like, and play when they like, is their ideal. Many circumstances constrain men to this life, or prevent them from leaving it when once adopted; but the life has its attractions in spite of its hardships. . . . They cannot stand the regularity and dullness of civilized existence, and find the excitement they need in the life of the streets, or at home as spectators of, or participators in, some highly-coloured domestic scene. There is drunkenness amongst them . . . but drink is not their special luxury as with the lowest class, nor is it their passion as with a portion of those with higher wages and irregular but severe work.¹¹

This is a vivid portraiture, true of the class described no doubt when it was written, but it would be less true to-day

when a greater variety of entertainment—not all of high quality, admittedly—is offered to young and old, rich and poor, apart from what they may discover in the streets or make for themselves at home.

Special attention has been directed here to class B, because Booth evidently believed this class to be at the root of the social problems he was investigating. By their competition he held that they tended to depress the standard of life of the class just above them. In his second paper to the Statistical Society he even went so far as to suggest that the only hope of a solution lay in somehow ridding society of this class, though he did not know how it was to be done:

Beyond the malign influence which the imperative needs and ill-regulated lives of the class we are considering exercise over the fortunes of those who might otherwise do well enough, and beyond the fact that they do not support themselves, but absorb the charities of both rich and poor, they are also a constant burthen to the State. What they contribute, whether in taxes or rates, is little compared to the expense they cause. Their presence in our cities creates a costly and often unavailing struggle to raise the standard of life and health. It will be seen that it is not exactly in the interests of the very poor themselves that I speak. However slowly and kindly it may be done, it is not a pleasant process to be improved off the face of the earth, and this is the road along which we have, as I think, to travel. I do not venture to make any definite proposals; I only say that it seems time that we should find some means to carry voluntarily on our shoulders the burthen which otherwise we have to carry involuntarily round our necks.¹²

Illustrative Material—We can now proceed to consider the kind of information collected by the School Attendance visitors from each street. Take Bendigo Street as an example. Details of the occupants in the first few houses of this street were recorded as in the table which follows.¹³ It will be observed that some houses in the street were empty, while others contained no children attending school. Concerning these the bare fact is noted without further particulars.

BENDIGO STREET

No.			
1.	Machinist — umbrella covers (a widow)	3 school chn. Very poor	B 35
2.	.	No chn. at school	.
3.	General Dealer	1 school ch.	E 23
4.	Washerwoman (widow)	4 sch. chn., 1 baby. Very poor	B 33
5.	Carman	2 school chn. Very poor	B 3
6.	.	empty	.
7.	Carman	4 school chn. Very poor	B 3
8.	Painter	3 school chn. Very poor	B 7
	Boot Mender	3 school chn. Very poor	B 19
9.	Irregular Labourer	3 school chn. Very poor	B 3
10.	Carman	3 school chn. p. reg.	D 4
11.	Hawker	1 baby, 2 sch. chn. Very poor	B 22
	Casual Labourer	3 school chn. Very poor	B 2

The reader will note that in every house where there are children of school age the visitor records their number and the occupation of the head of the family. There is often also a brief statement as to means: *very poor*, *poor but regular*, and so on; sometimes means can be judged by the occupation of the chief wage-earner. On the basis of this information it is possible to assign each family to a particular social class and each head to a particular employment section, as indicated by the letter and number at the end of each row.

Here is another example, showing the first few households in Marble Street, with frequently an illuminating word or two about the family or its head:¹⁴

MARBLE STREET (NORTH)

No.			
2.	Bricklayer's Labourer .	3 sch. chn., 1 baby	B 3
	(ill-health and casual work)		
	Carpenter .	no sch. chn.	.
4.	Bootmaker	no sch. chn., 1 boy over age	.
6.	Cook	1 sch. ch., 1 girl over age	E 15
	.	no sch. chn.	.

MARBLE STREET (NORTH) (*continued*)

No.

8.	Labourer	3 sch. chn.	A 1
	(cadging loafer, lives on wife who went into workhouse to get rid of him)		
	Match-box Maker	4 sch. chn.	B 35
	(husband in gaol undergoing penal servitude)		
	Labourer	2 sch. chn., 1 baby	A 1
	(loafer at race-courses & coco-nut proprietor—very shift)		
10.	Bootmaker	2 sch. chn., 1 baby	E 11
	Coal Porter	4 sch. chn., 1 baby (very dirty)	B 3
12.	Labourer	1 sch. ch., 1 baby	
		1 boy over age at school	B 2
	Labourer	2 sch. chn., 1 baby, 1 girl over age	A 1

(scarcely a rag to cover themselves with—wife and children utterly neglected—a lazy vagabond)

Each street was coloured, on a map of the whole district, 25 inches to the mile, according to the predominant character of its inhabitants. Even from the few examples given, if they are typical, it could be seen that a majority of the residents in Bendigo Street were allocated to the B class; this street was, in fact, marked B and coloured dark blue on the map, the shades¹⁵ from poverty to prosperity being chosen thus:

Black—the lowest grade;	Dark Blue—very poor;
Light Blue—ordinary poverty;	Purple—mixed with poverty;
Pink—working class comfort;	Red—well to do;
Yellow—wealthy.	

The general character of Bendigo Street was described as “wretchedly poor and improvident—old houses in very dilapidated condition—people work hard when they can get it, but are frequently out of work, and have no idea of thrift”. Marble Street (North) was a degree worse than Bendigo Street. It was marked A to B and tinted black to dark blue. The general character of its inhabitants was thus described:

"Majority very poor and rough; some of the loafing semi-criminal class and given to drink; lazy shiftless people."

A Pilot Survey—In the light of this introduction to the nature of the material collected in the note-books of the School Board visitors let us next turn to Booth's pilot survey, which took place in one of the old School Board Divisions, known as Tower Hamlets, comprising five unions of parishes or registration districts (Whitechapel, St. George's in the East, Stepney, Mile End, Old Town, and Poplar). The division of London into such districts, made up of parishes, was essential to Booth's purpose, because population statistics for each parish were available in the 1881 Census Reports, and these population figures were an integral part of the raw material on which his quantitative assessment of poverty depended. The other, and complementary, part of his essential raw material came, as we have seen, from the records of the School Board visitors. Hence the division of London also into districts served by them.

In order to understand precisely how Booth compiled his tables, the student should try to follow the details of the procedure in one district, *e.g.* Whitechapel, for which the figures are given in the first Statistical Society paper.¹⁶ If we suppose a card made out for every household visited, *i.e.* those containing school children of ages 3 to 13, the cards could be arranged in packs, so many in Section 1, so many in Section 2, and so on, according to the nature of the occupation of the head of the household in Booth's classification.

Basic Assumptions—Certain important assumptions had then to be made. Since the enquiry did not begin until 1886-87 it was necessary to bring the total population as recorded at the 1881 census up to date. For this purpose it was assumed that the population had increased between 1881 and 1886-87 in the same proportion as the school children.¹⁷ Further assumptions¹⁸ were made as follows:

(1) Knowing the total number of married men and the total of other male adults from the census, it was assumed that the married men without children and the other male adults (of age 20+) could be subdivided into their employ-

SPECIMEN BLOCK WITH OVER

<i>Name of Street</i>	<i>Colour for Map</i>	<i>Houses</i>			<i>No. of Chn. 3-13</i>
		<i>Sched- uled</i>	<i>Un- Sched.</i>	<i>Character</i>	
—	Purple	109	—	2 to 8 rooms: let in tenements.	231
—	Dark Blue	18	—	2-roomed cottage about 6s.	22
—	Light Blue	5	—	„ „ „	11
—	Light Blue	6	—	Small cottages, 3 or 4 rms., 10s. or 12s.	21
—	Light Blue	9	—	„ „ „	7
—	Dark Blue	16	—	2 to 4 rms. small.	33
—	Dark Blue	8	—	„ „ „	20
—	Dark Blue	8	—	„ „ „	10
—	Dark Blue	10	—	Court at back of last street. Only 1 W.C. & wash house. No backs.	10
—	Dark Blue	6	—	Rather better. Small front gardens.	5
—	Purple	16	—	Some 6 rms. or 4 rms.	43
—	Purple	17	—	New house, 8 rooms let in tenements, on one side 4 & 6 rms. on other side.	43

45 PER CENT OF POVERTY: FINSBURY

<i>Description of Street</i>	<i>Division of Chn. by Class</i>							
	<i>A</i>	<i>B</i>	<i>C</i>	<i>D</i>	<i>E</i>	<i>F</i>	<i>G</i>	<i>H</i>
Struggling poor, mostly casual. Few in reg. work. Porters in meat market, slaughtermen, brick-lab., carmen, etc.	—	100	35	25	40	31	—	—
Cas. wkrs., labourers, carmen. One small shop. Very poor.	—	18	—	3	—	1	—	—
Poor class, all labouring. Slightly better than last.	—	—	5	6	—	—	—	—
Poor labouring class, more reg. than preceding Street. Postman, ink-maker, slater, etc.	—	6	—	15	—	—	—	—
Fairly reg. wk. Carmen & a Care-taker.	—	1	—	6	—	—	—	—
Very poor class. Irreg. wkrs. A few better off (Laundry). Labs. Paint. Plasterer.	—	13	12	2	4	2	—	—
Labouring class. Like last Street.	—	10	10	—	—	—	—	—
Labouring class. Some drovers.	—	8	2	—	—	—	—	—
Dwellings worse but people abt. same as previous st. Brick Lab. out of wk. Comp. out of work.	—	10	—	—	—	—	—	—
All labourers, very poor. Some old people have parish relief.	—	5	—	—	—	—	—	—
Rather better than preceding St. More reg. wk. Master baker, plasterer, housekeeper.	—	9	10	10	8	6	—	—
Very like last Street. A slightly larger propn. of casual.	—	13	10	6	8	6	—	—

ment sections in the same proportions as the married men with children. The justification given for this assumption was that the fathers of the school children of the day are but a section of the block containing old and young, married and single, with children and without, in every trade; and they choose their employment before their children are born and continue in it after.

(2) It was assumed that infants under school age and young persons of ages 13 to 20 lived under the same home conditions as the children of school age. In other words, the two former groups were allocated to different employment sections in the proportions recorded by the School Board visitors for the school children of ages 3 to 13.

(3) It was also assumed that the classification as to status and means of the unscheduled part of the population in each employment section corresponded exactly to that of the scheduled part.

In short, it was taken for granted that, as was the condition of life of the tested part—amounting to fully one-half of the population—so was the condition of life of the whole population, but “leaning throughout to the safe side, preferring to paint things too dark . . . to avoid the chance of understating the evils with which society has to deal”.

It is of interest to observe that, when Booth came to the end of his survey, he remarked:

I undoubtedly expected that this investigation would expose exaggerations, and it did so; but the actual poverty disclosed was so great, both in mass and in degree, and so absolutely certain, that I have gradually become equally anxious not to overstate.¹⁹

In the second paper Charles Booth read before the Royal Statistical Society²⁰ certain of the tables, apart from minor corrections, were the same as those submitted in his earlier paper. But the table for one district, St. George's, had to be considerably altered. It was the first district surveyed, in 1886, and it was admitted that the work was very imperfect. This experience shows the value of a pilot exploratory survey.

Street as New Unit—When Booth had completed his investigations in East London, Central London, and Battersea, he decided to take the street instead of the family or household as his working unit, in order to cover the whole of London in reasonable time. Instead, therefore, of recording the number of school children in each household and the employment and social position of its head, the number of children was stated street by street, and they were divided as to class according to what was known of the parents, but only general particulars were given of the occupation. Thus the division of the population as to living conditions was maintained, but the division according to employment was dropped, the intention now being to deal with industry in another and more complete way. An example of such details as were recorded by the investigators on this revised basis is given on pages 44, 45.²¹

For instance, in the first street there were 231 school children. Judging by the status of their parents, these children were allocated to classes B to F, as shown. The general character of the 109 houses scheduled in the street and of their occupants determined its colour.

Such particulars and figures as these, checked and revised by his secretaries after consultation with the School Board visitors, relieving officers, Charity Organization Society agents, police, clergy, and district visitors, enabled Booth not only to colour each street appropriately but also to classify the inhabitants according to means, on the basic assumption already mentioned that the whole resembled the part surveyed, namely the households containing school children.

Analysis of the Population—By grouping streets in blocks, and neighbouring blocks into School Board divisions and registration districts, it was possible to assemble the separate figures so as to lead ultimately to a total for all London. This total, when analysed on Booth's system of classification, gave the result shown on page 48.

Thus, according to Booth's estimate, 30·7 per cent of London's population, at the date of his survey, were living in poverty, 22·3 per cent being labelled poor, their earnings being either intermittent or, if regular, only small, 7·5 per cent very

CLASSIFICATION OF LONDON'S POPULATION*

<i>Description</i>	<i>Class</i>	<i>No. (ooo's)</i>	<i>Per Cent</i>
Middle class and above .	G & H	750	17·8
Working class and comfortable	E & F	2,166	51·5
Poor	C & D	938	22·3
Very poor	B	317	7·5
Lowest class	A	38	0·9
TOTAL	A to H	4,209	100·0

* *Labour and Life of the People*, 1891, Vol. II, p. 21.

poor, dependent on casual earnings, while 0·9 per cent were relegated to the lowest class of occasional labourers which included loafers and semi-criminals.

Causes of Poverty—Booth also made a special analysis of over 4,000 cases in the poor and very poor classes in order to discover the causes of poverty. These cases were personally known to nine School Board visitors in East London and Hackney, selected on the ground of their intimate knowledge of the poorest classes. Each visitor was asked to note opposite each case the proximate cause of their poverty, and the result of the analysis is shown opposite.

Thus, according to the evidence of this sample, more than two out of every three among the poor were said to be in that condition on account of irregular work or low pay, and well over one-half of the very poor were so classed for the same cause.

Range of the Booth Survey—In this brief account of Booth's survey we have concentrated on that part of it which tells of his investigation of poverty conditions, because that is the part which has the most direct relation to social surveying in the narrow sense of the term. This, however, gives but a very limited conception of the wide extent of Booth's researches. Their range can be appreciated by doing no more than glance through a summary of the contents (running to nearly 100

ANALYSIS OF CAUSES OF POVERTY*

<i>Alleged Causes</i>	<i>Classes</i>			
	<i>A & B</i>		<i>C & D</i>	
	<i>No.</i>	<i>per cent</i>	<i>No.</i>	<i>per cent</i>
Loafers	60	4	0	0
Questions of Employment (e.g. irregular work or low pay)	878	55	1,668	68
Questions of Habit (e.g. drink or thriftlessness)	231	14	322	13
Questions of Circumstance (e.g. illness, infirmity, large family, may be combined with irregular work)	441	27	476	19
TOTAL	1,610	100	2,466	100

* J.R.S.S., Vol. LI, p. 295.

pages) of the first nine volumes, to be found in Part II of Volume IX of the 1897 edition.

In the last published record of the completed work, in seventeen volumes, the whole is divided into three series. The first series, comprising four volumes, shows how the people in different parts of London live and give estimates of the number and proportion of the population in poverty in each part. The second series, of five volumes, deals with industry and tells how people earn their living, detailed descriptions being given of a large variety of trades and occupations. The third series, of eight volumes, discusses religious influences. In each series separate volumes are allotted to different regions of London. Thus, the first six volumes in the third series deal, respectively, with London North of the Thames, the Outer and Inner Rings, the City and West End, Inner South London, South East and South West London

and Outer South London. In Volume VII the various religious influences are then summarized; while notes on social influences and the conclusion of the enquiry make up the final volume.

Note 1

BOOTH'S OCCUPATIONAL CLASSIFICATION*

MALES

<i>Class</i>		<i>Description</i>	<i>Class</i>		<i>Description</i>
Labour	1	Lowest class, loafers, etc.	Other	17	Seamen
	2	Casual day-to-day labour		18	Other Wage earners
	3	Irregular labour		19	Home industries (not employing)
	4	Regular work, low pay	Manu- facturers	20	Small employers
	5	Regular work, ordinary pay		21	Large employers
	6	Foremen & responsible work	Dealers	22	Street sellers, etc.
Artisans	7	Building trades		23	General dealers
	8	Furniture, wood-work, etc.		24	Small shops
	9	Machinery and metals	Refresh- ment	25	Large shops (em- ployed assistants)
	10	Sundry artisans		26	Coffee & board- ing houses
	11	Dress		27	Licensed houses
	12	Food preparation	Salaried etc.	28	Clerks & agents
Locomo- tion	13	Railway servants		29	Subordinate pro- fessional
	14	Road service	No work	30	Professional
Assistants	15	Shops		31	Ill & no occupa- tion
	16	Police, soldiers & sub-officials		32	Independent

FEMALES

<i>Class</i>		<i>Description</i>	<i>Class</i>		<i>Description</i>
	33	Semi-domestic employment		36	Employing & professional
	34	Dress		37	Supported
	35	Small trades		38	Independent

* *Life and Labour of the People in London*, 1902, First Series, Vol. I, p. 34.

Note 2

HOW THE TOTAL POPULATION OF TOWER HAMLETS IN 1886-87
WAS ESTIMATED*

Given, the number of sch. chn., aged 3-13, in 1882† = 100,550

„ „ „ „ „ „ 1887† = 105,031

Increase in the 5 years = 4,481

Add one-fifth for increase from 1881 to 1882 = 896

$$\therefore \text{No. of sch. chn. in 1881} = 100,550 - 896$$
$$= 99,654$$

Hence increase from 1881 to 1887 = 5,377

= 5.4 per cent of 99,654

But, total census population of Tower Hamlets in 1881 = 439,137

Less inmates of institutions	7,821
------------------------------	-------

Net population in families = 431,316

Add 5.4 per cent increase on 439,137 since 1881 = 23,713

455,029

Add, for absent seamen, four-fifths of those scheduled = 1,848

$\therefore$ Total estimated population = 456,877

* These figures are abstracted from Booth's first paper, *J.R.S.S.*, Vol. L.

† Use was made of a special return, got out by the School Board in 1882, of children in this age group in the appropriate census districts. In some registration districts this method could not be used because no such special return was available, and the census figures—even had the census districts corresponded exactly with those of the School Board—were of no help, because the number of children in this particular age-group was not recorded. A slightly different method for estimating the population had therefore to be adopted in some districts. (See footnote to *Life and Labour of the People in London*, 1902, Vol. I, First Series, p. 32.)

† The figure for 1887 came from the Booth (School Board visitors) enquiry.

Note 3

A FEW ENTRIES IN BOOTH'S

Class	Description	Heads of Families			Wives
		With sch. chn.	Without sch. chn.		
			Recog- nized	Remain- der	
MALES					
Labour 1	Lowest class, loafers, etc.	45	32	332	403
2	Casual day-to-day labour	228	162	110	493
3		143			
	TOTAL	5932	4182	2436	
FEMALES					
33	Semi - domestic employ- ment	199	162		
34	Dress	83	68		
	TOTAL	452	367		
39	Other adult women	—	—		
	TOTAL POPULATION	6384	4549	2436	12376

REFERENCES.

¹ Charles Booth: *A Memoir*. (Macmillan, 1918.)

² *Ibid.*, p. 6.

³ *Ibid.*, pp. 14, 15.

⁴ *The Inhabitants of Tower Hamlets (School Board Division), their Condition and Occupations*, J.R.S.S., Vol. L, pp. 326-401, 1887, and *Condition and Occupations of the People of East London and Hackney*, 1887, J.R.S.S., Vol. LI, pp. 276-339, 1888.

⁵ J.R.S.S., Vol. L, p. 376.

⁶ J.R.S.S., Vol. L, pp. 376, 327.

⁷ This eminently valuable idea was suggested by Joseph Chamberlain and was conveyed to Booth by Mrs. Sidney Webb, a cousin of his wife. (See his *Memoir*, p. 17.)

⁸ *Life and Labour*, Vol. I, 1889, pp. 5, 6. This was the first edition of the work which appeared in its final form in 1902 under the fuller title, *Life and Labour of the People in London*.

⁹ Discretion was permitted in applying the defined limits of income,

WHITECHAPEL TABLE

Unmd. Males over 20 & Wid- owers	Young Persons 15-20		Children			Total	Very Poor	Poor	Remain- der
	M	F	13-15	3-13	0-3				
795	283	69	25	82	32	2098	2098	—	—
973	116	122	146	488	191	3029	3029	—	—
174						1462	192	1184	86
	82	87	103	344	131	1108	339	545	224
						6199	719	1655	3825
8776	3811	3801	4486	14906	5794	73518	8524	19214	45780

For a family above 'moderate' size, the limits were to be correspondingly raised and vice versa.

¹⁰ *J.R.S.S.*, Vol. L, p. 328.

¹¹ *J.R.S.S.*, Vol. L, p. 329.

¹² *J.R.S.S.*, Vol. LI, pp. 299, 300.

¹³ *Life and Labour*, Vol. I, 1889, p. 15.

¹⁴ *Life and Labour*, Vol. I, 1889, p. 11.

¹⁵ *Life and Labour of the People in London*, 1902, First Series, Vol. I, p. 7, footnote.

¹⁶ See end of chapter, p.p. 52, 53, for a few specimen figures.

¹⁷ The figures for this calculation are given for Tower Hamlets on p. 51.

¹⁸ *Life and Labour*, Vol. I, 1889, pp. 4, 5.

¹⁹ *Life and Labour of the People in London*, 1902, First Series, Vol. I, p. 5, footnote.

²⁰ *J.R.S.S.*, Vol. LI, 1888, pp. 276-339.

²¹ *Life and Labour of the People in London*, 1902, First Series, Vol. II, pp. 1, 2.

CHAPTER V

YORK SURVEY

Aim of the Survey—The next big step forward in social surveying was taken by Mr. B. Seebohm Rowntree when he began in 1899 to collect the material for his standard work on *Poverty: A Study of Town Life*, which was published in 1901. His declared object in undertaking this investigation was "to throw some light upon the conditions which govern the life of the wage-earning classes in provincial towns and especially upon the problem of poverty".¹ For this purpose he chose his native city of York, having satisfied himself that the conditions there were not exceptional and that they might be taken as representative of those existing in many, if not in most, provincial towns. In support of this claim²—which could hardly be contradicted, or confirmed, without conducting parallel surveys on precisely the same lines and at the same time in other towns—Rowntree stated that much evidence would be found throughout his book.

The choice of York had the advantage that no fewer than 2,500 workers were employed in the manufacture of cocoa, chocolate and general confectionery in 1899 and nearly 10,000 in 1936, when the enquiry was repeated. In fact, this was one of the two main industries of the town, the other being railway transport, and Mr. Rowntree himself was a director of one of the two principal firms engaged in the industry. He thus had an intimate knowledge of the earnings and conditions of work, if not also of the conditions of life, of an appreciable section of the occupied population. By his close association with other employers in the city he was also in an especially favoured position for getting inside information about corresponding conditions in other industries, and he made full use of these advantages.

His first aim was to discover the true measure of poverty in the city, and how much of it could be attributed to insuffi-

ciency of income and how much to improvidence. He also wished to know how many families were in such acute poverty that they suffered from a chronic insufficiency of food and clothing.

The nature of the enquiry permitted him to ignore the so-called non-working-class element in the population, and he took the keeping or not keeping of a domestic servant as his criterion of class. This was a not unsatisfactory test perhaps at the beginning of the century though it would be very unsuitable now.³ His investigators called at every house in every street where working-class people were likely to be living and tried to get particulars as to the housing, occupation, and earnings of every wage-earning family, also a record of the number and ages of any children in each family. The total number of streets visited was 388 and the enquiry covered 11,560 families, comprising 46,754 persons out of a total population of 75,812. When allowance was made for individuals housed in public institutions and domestic servants living with non-wage-earning families, it was estimated that the working-class section of the population, as defined above, amounted to just over 70 per cent of the total population.⁴

Objective Test of Poverty—Rowntree divided that part of the population living in poverty into two classes:

- (a) those in what he called *primary poverty*, whose total earnings were not sufficient to obtain the minimum necessities for the maintenance of merely physical efficiency;
- (b) those in *secondary poverty*, whose total earnings would have been sufficient for the maintenance of physical efficiency, had not some portion been absorbed by other expenditure, either useful or wasteful.⁵

Rowntree's measurement of primary poverty is a definite improvement on the more descriptive method adopted by Booth, based on apparent status and means, for the assessment of poverty, because, in the outcome, it supplied an objective test which could be applied by independent observers with a much better chance of reaching the same result. We must, therefore, pay particular attention to this new technique.

Clearly, the first problem was to determine what were "the minimum necessities for the maintenance of merely physical efficiency". Rowntree attacked this problem in sections, first, deciding what amount and kind of food was necessary for mere physical efficiency and its cost; then, he made a list of the minimum amount and cost of clothing needed; and, finally, he determined what other minimum expenditure must be incurred by a family of moderate size. By a moderate sized family in his earlier enquiry he meant one of husband, wife, and two to four children.⁶ His estimates were adjustable, up or down, as the size of the household exceeded or fell short of this "moderate" number, and they also varied, as we shall see, according to its composition by age and sex.

Minimum Cost of Food—As is well known, the potential energy of food is convertible into heat or fuel which serves to keep the human machine working. This energy can be obtained from a variety of foods and is expressed in heat units or calories, one such unit being the amount of heat required to raise the temperature of a kilogram of water by 1° Centigrade. In order to ascertain the minimum quantity and the right kind of food to provide the needed energy in terms of protein (supplied by such foods as lean meat, fish, cheese, the albumen of eggs and milk, and certain vegetables), fats, carbohydrates (supplied by starchy foods such as bread, potatoes, cereals, and sugar), mineral salts, and water, Rowntree consulted food experts. In the light of the evidence available at that time he decided to adopt Atwater's estimates, which allowed 3,500 calories of energy value, obtainable from 125 grammes of protein and other food constituents, per day for a man doing moderate muscular work, and 2,700 calories for a woman, with appropriate reductions according to age and sex for boys and girls under 16.⁷ The amount of protein is stated separately because it not only supplies warmth and energy but a certain amount is essential to build up and repair muscle and tissue in the body.

The next step was to choose diets which would provide the necessary calories for households of known composition.

Here Rowntree made use of dietary tables prepared for use in workhouses, following an order regulating such diets which came into force in 1901. He chose only the cheapest rations, including such items as boiled bacon, vegetable broth, and porridge, but no butcher's meat. His standard was therefore less generous than that prescribed by the Local Government Board for able-bodied paupers, his declared aim being "to select a standard diet which gives adequate nutrition *at the lowest practicable cost*".⁸

In order to discover the cost at which his standard diets could be bought by housewives Rowntree had made a collection and analysis of budgets kept in eighteen different households. Their purpose was to throw light on the normal expenditure of working-class families. They supplied detailed accounts of "all money spent, showing the kind and quantity of goods purchased each day and the prices paid" by the selected families in specified weeks. Such accounts were kept by one family for 90 consecutive weeks, and by others for periods varying from 1 to 13 weeks.⁹

By averaging the prices of food thus determined Rowntree was able to estimate the weekly cost of his standard diet. It amounted to 3s. 3d. a week for a man, 2s. 9d. for a woman, 2s. 7d. for children of 8 to 16, 2s. 1d. for children of 3 to 8, and 2s. 1d. also for infants under 3. Taking a mean of his results, he fixed the minimum cost per week for an adult at 3s. a head and for a child up to the age of 16 at 2s. 3d. a head.¹⁰ In contrast with ideas and prices to-day, nearly half a century later, it is interesting to read the author's own comment in 1901 on this food standard:

It must . . . be remembered that at present the poor do not possess knowledge which would enable them to select a diet that is at once as nutritious and as economical as that which is here adopted as the standard. Moreover, the adoption of such a diet would require considerable changes in established customs, and many prejudices would have to be uprooted.¹¹

To illustrate this he went on to quote a report from the *Manchester Guardian* of that year, of a revolt of the women

in Bradford Workhouse when they were served with gruel instead of tea for breakfast under the new official order. Because they refused to go to work on gruel three of the ringleaders were sent to prison for a week.

Expenditure on Rent and Clothing—Proceeding next to consider expenditure on essential items other than food, Rowntree took the actual sum paid for rent (inclusive of rates) as the necessary cost of housing, on the ground that it was impracticable to assess the minimum accommodation needed for health, and extravagance under this head was very improbable.¹²

Estimates of the minimum necessary expenditure on clothing and household sundries were obtained by consulting a large number of working people. Mr. Rowntree, or one of his assistants, asked each person approached: "What in your opinion is the very lowest sum upon which a man can keep himself in clothing for a year? The clothing should be adequate to keep the man in health, and should not be so shabby as to injure his chances of obtaining respectable employment. Apart from these two conditions, the clothing to be the most economical obtainable." Separate information was sought concerning each of several different items of clothing, including the length of time it should last. A critical reader might be disposed to question how many persons, even intelligent persons, could do more than guess at answers to such questions without having kept careful accounts. A lady helper followed the same plan to obtain estimates of expenditure on the clothing of women and children, and on such household sundries as fuel, light, soap, replacements of crockery, etc.

For clothing the average expenditure of a man or woman was estimated at 26s. a year, or 6d. a week. Expenditure on behalf of children was based on the cost of clothing a boy of 12 and a child of 2, a somewhat arbitrary choice of ages; the former was estimated at 27s. a year and the latter at 17s., the resultant estimate for all children under 16 being accordingly put at 22s. a year or 5d. a week.¹³

Fuel, Light, and Sundries—It was assumed that the expenditure on fuel would not vary very much with size of family

and that as a rule there would only be one fire. Consumption was estimated at one bag of 10 stone a week in summer and two in winter, at 1s. 3d. a bag, or an average of 1s. 10d. a week the year round.

For a family of moderate size, the weekly cost of light was put at 3d. or 4d., and the consumption of soap was estimated at 1½ lb. at 3d. a lb. Information about other necessities proved hard to obtain, a common reply being: "If we have to buy anything extra, such as pots or pans, we have to spend less on food, that's all." It was thought safe, therefore, to allow no more than 2d. a head per week to meet all sundries other than fuel.¹⁴ If objection is taken to any of the estimates under the heading of clothing and sundries, it may be replied that the figures are small in comparison with the expenditure on food and a difference of a few pence either way will have no great effect on the final result.

Rowntree's Poverty Line—Assembling these various estimates, and taking as the appropriate figure for rent the average amount usually paid in York for housing a family of the specified size, we have the following table showing Rowntree's minimum standard for such a family, comprising husband, wife, and three children. The calculation can be readily adjusted to fit families of different sizes.

ROWNTREE'S ESTIMATED MINIMUM WEEKLY COST
IN 1899 OF MAINTAINING A FAMILY OF FIVE*

	s.	d.
Food: husband and wife	6	0
3 children	6	9
Rent	4	0
Clothing: husband and wife	1	0
3 children	1	3
Fuel	1	10
Other sundries (including light)		10
TOTAL	21	8

* *Ibid.*, p. 143.

Having thus precisely fixed his "poverty line", he went on to ask how many families had incomes which fell below this level of minimum expenditure. If he could get a trustworthy answer to this question, he would know how many families were in "primary poverty" because the income, even assuming every penny judiciously spent, would still not suffice to purchase the food, clothing, and other essentials deemed necessary to maintain merely physical efficiency. It is worth noting at this point that such a definition of a "poverty line" would not be without value, though experts might disagree as to the precise level at which the line should be drawn to mark where "poverty" begins and ends. It could nevertheless be used to compare one section of the population with another and one place with another.

Proportion of Primary Poverty—It will be recalled that Rowntree's investigator undertook a house-to-house visitation of every wage-earning family in York to get particulars of the number and ages of the children, and the occupations and earnings of all members of the family who were engaged in paid work. We are informed that very few of those approached refused to co-operate in the enquiry and, where there was any doubt as to the accuracy of the information given, it was checked with the help of neighbours and others. In almost every instance, where facts or figures were submitted to clergy, district visitors, and persons with special knowledge, they were confirmed.

Information was not always forthcoming as to earnings but, for skilled work, the rates of pay current in York were known. For unskilled labour Rowntree was not only well acquainted with the wage scales applicable in his own firm, but other large employers freely gave him particulars also as to the wages they were paying. In estimating earnings, allowance was made for short time and overtime, based on information supplied by employers, trade union secretaries, and the workers themselves.¹⁵

It was therefore possible in each household to ascertain total earnings, *including those of any grown-up children living at home*, although normally they would only pay into the

family purse a contribution towards their board and lodging. The total income could then be balanced against the estimated minimum expenditure to maintain physical efficiency in order to determine whether a particular family was or was not in "primary poverty".

The general conclusion was that 1,465 families, comprising 7,230 persons, were living in *primary poverty* thus defined. This was 15.46 per cent of the total wage-earning class and 9.91 per cent of the city's whole population.¹⁶

Proportion of Secondary Poverty—To determine the extent of secondary poverty the investigator, in going from house to house, made a note of those showing "evidences of poverty, that is obvious want and squalor. Direct information was often obtained from neighbours, or from a member of the household concerned, to the effect that the father or mother was a heavy drinker; in other cases the pinched faces of the ragged children told their own tale of poverty and privation."¹⁷

Judging thus, partly by appearance and partly by information, Rowntree estimated that 20,302 persons, 43.4 per cent of all wage-earners and 27.84 per cent of the total population were living in poverty. Subtracting the 7,230 persons already ascertained to be in primary poverty, we get 13,072 persons, or 17.93 per cent of the population, estimated to be living in *secondary poverty*.¹⁸

London and York Compared—It will be recalled that Booth, in his enquiry into the amount of poverty in London, made no distinction between primary and secondary poverty. If his definition of poverty, unqualified, could be accepted as approximately the same as Rowntree's, we should be able to say whether the proportion of poor families in York was greater or less than that in London. As to that, Rowntree says:

From the commencement of my inquiry I have had opportunities of consulting with Mr. Booth, and comparing the methods of investigation and the standards of poverty adopted. As a result, I feel no hesitation in regarding my estimate of the total poverty in York as comparable with Mr. Booth's estimate of the total poverty in London, and in this Mr. Booth agrees.¹⁹

In a letter from Booth to Rowntree, the former admits that the methods adopted by Rowntree were more complete than those available for the much larger area of London. But he adds:

Our totals may be correctly compared, and the comparison, as you have shown, is very close. At this I am not surprised. I have, indeed, long thought that other cities, if similarly tested, would show a percentage of poverty not differing greatly from that existing in London. Your most valuable inquiry confirms me in this opinion."²⁰

Was this conclusion, as to the comparability of the figures for York and London, justified? Of that we cannot be sure. Rowntree, in his measurement of "primary" poverty, had succeeded in evolving an objective test of poverty—a balance of total earnings against an agreed level of minimum cost of needs—which should give comparable results when applied by independent impartial investigators in different areas. But there is no corresponding figure to set against this in the London enquiry. The figure which in fact Rowntree compared with that for London was his "over-all" proportion of poor people in York, obtained by combining the so-called "primary" and "secondary" constituents. To get this figure, however, Rowntree's method was no better than that of Booth. Both tests were in some degree subjective, in that they depended upon the individual judgments of the observers, namely, Rowntree and his assistants in the one case and school attendance visitors in the other, though every precaution was no doubt taken in both cases, by checking and consultation with other knowledgeable persons, to see that the judgments reached were reliable. Rowntree's own admission later, that the measurement of secondary poverty was unreliable, cannot but cast doubt on the validity of the comparison.²¹

The comparatively close correspondence of the two results—30·7 per cent of the population of London living in poverty as compared with 27·8 per cent of the population of York²²—is no proof in itself that either figure is accurate, although it would be in the nature of supporting evidence if we could accept without investigation Booth's opinion that other cities

are unlikely to differ greatly from London in the percentage of poverty they harbour. It should be born in mind too that the York survey was made about a decade after the London survey, and trade was rather more prosperous, as Rowntree points out, at the later date.

Assuming that it could be taken as true that even a figure approaching the proportion of poverty found in London and York correctly represented the state of affairs in the country as a whole, it would follow that fifty years ago something like one in every four of England's town population was existing at a deplorably low level of life, a revelation which—taken at its face value—came as so great a shock to the public conscience at the time that the impression it created was not likely to be soon forgotten. It led inevitably to further questioning as to the cause of such conditions and the possibility of reform.

Causes of Poverty—Rowntree collected particulars as to the immediate causes of poverty, as Charles Booth had done before him, and his conclusions are here summarized.

IMMEDIATE CAUSES OF PRIMARY POVERTY*

<i>Immediate Cause</i>	<i>Percentage Affected of those in Poverty</i>	
	<i>All Ages</i>	<i>Children</i>
Chief Earner in regular work but at low wages	52·0	56·5
Large Family (<i>i.e.</i> more than 4 children)	22·2	26·6
Death or Incapacity of Chief Earner	20·7	12·8
Irregularity of Work or Unemployment	5·1	4·1

* *Ibid.*, p. 153.

The figures he gives have been rearranged, so as to show the main influencing factors in the order of their importance,

and certain related factors have been combined. The figures are not strictly comparable with those in the table in Chapter IV, p. 49, because this table relates to primary poverty only. Also, the factors low wages and irregularity of work are separated here, whereas they are combined in the Booth table. In spite of this it is evident that low pay is a major influence associated with poverty in both tables.

By distributing the figures on a percentage basis, as in the above table, it is clear that children are even greater victims than the rest of the population of the two most potent factors responsible for poverty, namely (1) wages that are too low to buy the necessities of life, and (2) many mouths to feed with such wages as are available. In fact, the first of these two factors was so outstanding in its effect at the beginning of the present century that, if the level of wages then prevailing could only have been raised—assuming no consequential adverse reactions of any kind—one half the poverty in the land would have disappeared at a stroke.

A Poverty Cycle—Rowntree also drew attention to an important poverty cycle in the normal lifetime of anyone born in the labouring class. Three periods of shortage of the necessities of life will in general be experienced. The first occurs during infancy, when the child of an unskilled labourer will be virtually competing with brothers and sisters for the food and clothing which can be bought with the father's small earnings. The whole family rises above the poverty line as the older children begin to earn and contribute towards their keep. As time passes, the children grow up, marry, and leave home. If, as was certainly likely at the beginning of the century when Rowntree's first investigation took place, the child has had no exceptional advantages in education and training to raise him out of the unskilled class, he will sink again into poverty after reaching the married state when he begins to have children of his own. This condition of affairs will persist until his children begin in their turn to earn for themselves. But, when they get married and leave home, he and the mother will be once more liable to sink below the poverty line. As Rowntree pointed out, anyone born into the labouring class

was thus in serious danger of being undernourished at three critical periods of life:

- (1) in childhood, when the constitution is being built up;
- (2) in the prime of life, when the wife's health, in particular, has so vital a bearing on the physique of the next generation;
- (3) in old age, when one is least able to bear additional stress and strain.

His later enquiry, to be discussed in a subsequent chapter, revealed that 52·5 per cent of all working class children under one year of age were living in 1936 below the poverty line, that 47 per cent would probably remain below for five years or more and 31·5 per cent for ten years or more.²³ It will be seen later that the 1936 poverty line was not the same as that adopted in 1901. It was drawn at an appreciably higher level.

REFERENCES

¹ See the introduction to the 1922 edition of his book, p. xvii.

² As commentary upon it see Chapter V, pp. 61, 62, and Chapter VIII, p. 94.

³ It is of interest to note that, when Rowntree made his new survey in 1936, his definition of 'working-class' was in fact different. He endeavoured then to investigate all families whose chief wage-earners were in receipt of not more than £250 a year.

⁴ *Poverty: A Study of Town Life*, 1922, p. 37.

⁵ *Ibid.*, p. xix.

⁶ *Ibid.*, p. 54.

⁷ *Ibid.*, pp. 122, 128, 129.

⁸ *Ibid.*, pp. 131, 138.

⁹ *Ibid.*, pp. 264, 265.

¹⁰ *Ibid.*, pp. 135, 136.

¹¹ *Ibid.*, p. 137.

¹² *Ibid.*, p. 138.

¹³ *Ibid.*, pp. 139-141.

¹⁴ *Ibid.*, p. 141.

¹⁵ *Ibid.*, pp. 37, 52.

¹⁶ *Ibid.*, pp. 143, 144.

¹⁷ *Ibid.*, pp. 148, 149.

¹⁸ *Ibid.*, pp. 150, 151.

¹⁹ *Ibid.*, pp. 354, 355.

²⁰ *Ibid.*, p. 356.

²¹ See Chapter IX, p. 107.

²² *Poverty: A Study of Town Life*, p. 355.

²³ *Poverty and Progress*, p. 459.

CHAPTER VI

THE FIVE TOWNS SURVEY

Survey by Sample—In the autumn of 1912 Professor A. L. Bowley made a survey of working-class conditions of life in Reading, introducing for the first time in this field the method of random sampling. Instead of visiting every working-class household, as in the York enquiry conducted by Rowntree, Bowley reviewed a random selection of roughly one-twentieth of all inhabited dwelling-houses, more precisely, 840 out of a total of about 18,000 in the whole of Reading, the town first chosen for this experiment. The number reviewed included both working-class and superior dwellings, but only the former were investigated.

An account of this Reading survey was published by the Royal Statistical Society.¹ It was the pioneer enquiry in a group study of five English towns of medium size, with populations in the region of 23,000 to 90,000 at the 1911 census.² The other towns were Northampton, Warrington, Stanley, and Bolton. The investigations in the first three were conducted by Mr. A. R. Burnett-Hurst in 1910 under the personal supervision of Professor Bowley. That at Bolton was carried out independently in the following year. Three of the towns chosen were, in the main, dependent upon a staple industry with subsidiaries, Stanley being a colliery centre in the County of Durham, Bolton a cotton town in Lancashire, and Northampton a manufacturing area for boots and shoes. In Reading and Warrington there was a greater variety of industries.³

In 1923-24 this Five Towns Survey was repeated by Professor Bowley in order to ascertain what changes had taken place in economic conditions during the ten years which had elapsed. An improvement in method and a gain in precision is to be expected when any such survey is repeated, even when the responsible direction from the start was in skilled hands,

because experience of local conditions is always gained at the first attempt.

Bowley aimed at getting a sample of 800 to 1,000 working-class households from each town in his later enquiry. To secure this he selected a ratio of households visited to total households in each town which he judged likely to give a sample of about 1,200 addresses, including those of non-working-class households. The sample in Reading was obtained by ticking every eighteenth name in a directory of the town; elsewhere, the voters' register, containing a record of every person entitled to a vote in all dwellings throughout each town, was used for the same purpose.⁴

Definitions and Standards—The household was judged to be "working-class" if the principal occupant was an hourly or weekly wage-earner. Thus clerks, travellers, teachers, shop managers, insurance agents, or employers in a small way were excluded. But this rule was not invariable: marginal cases were treated on their merits. In the first enquiry, it is stated that "shop assistants were only included . . . if working for butchers or grocers".⁵ In the second enquiry, all shop assistants were said to be excluded "except butchers, fishmongers, grocers, greengrocers, and bakers".⁶

In order to determine whether any family was in poverty, the procedure was to compare the *net income* (after deduction of rent and national insurance contributions from the gross income) with the *minimum standard of expenditure* for the family in question. The gross income of the family was reckoned to include the wages earned in the previous week by all its occupied members (making due allowance for any payments in kind, such as food, uniform, and remission of rent), together with any unemployment or health insurance benefit, pensions, strike pay, income from property or investment, and lodgers' payments. But poor relief or charitable aid of any kind was excluded, on the ground that any family known to be in receipt of such relief must be judged to be necessarily in poverty.⁷

Nobody related by blood or adoption to the family was to be counted as a lodger, no matter what might be the financial arrangement between them. With this exception each inde-

pendent lodger or lodging family was assumed to contribute one-third towards the rent of the house and 1s. a week for the services of the housewife unless otherwise stated. If the lodgers were boarded, the housewife's profit was generally reckoned in the later enquiry at 4s. a week for an adult, 7s. for man and wife, and 1s. 6d. for each child. In the earlier enquiry, the profit was estimated at only 6d. a week for a lodger and 2s. for a boarder.⁸

The minimum standard of expenditure for any family was intended to cover essential expenditure on food, clothing, household accessories, cleaning materials, light, and coal.

Bowley's Food Scale—For the minimum expenditure on food a slight modification of the Rowntree standard was adopted. Rowntree's standard was mainly vegetarian; it did not distinguish between the needs of children of different ages; and it assumed scientific expenditure at minimum cost. Bowley was rather less rigid in his approach to the problem; he considered that a workman would sacrifice other necessities in favour of additional meat; he also allowed for greater elasticity in the diet of children by differentiating according to age, using for this purpose the scale given below.

BOWLEY'S MINIMUM SCALE OF WEEKLY EXPENDITURE, 1924*

	<i>Food Scale</i>	<i>Expenditure</i> s. d.
Adult Male (over 18)	100	7 7
Male (14-18)	85	6 5
Female (over 14)	80	6 1
Child (5-14)	50	3 9
Infant (0-5)	33	2 6
Pensioner (over 70)	60	4 7

For Clothing, Cleaning and Lighting add 1s. 5d. for each person over 16.

For Clothing, Cleaning and Lighting add 1s. 3d. for each person under 16.

**Has Poverty Diminished?* pp. 36, 37.

Prices in the Five Towns in 1913 were somewhat higher than in York. Thus, on Bowley's minimum standard the estimated cost of food for an adult male, in order to preserve health and efficiency, was 4s. 6d. a week.⁹ Allowing for the increase in prices by 1924, this basic figure was raised to 7s. 7d. at the later enquiry.

Expenditure on Other Essentials—Bowley adopted Rown-tree's standard for clothing, cleaning, and lighting, without any change excepting that due to the rise in prices. The standard of coal consumption was known to vary from town to town, but for other expenditure a common standard was adopted for all the towns. The minimum expenditure per household on fuel in 1924 was estimated at 3s. a week in Reading, 2s. 8d. in Bolton, 2s. 7d. in Warrington, and 2s. 5d. in Northampton. In Stanley fuel was supplied by the colliery company either free or at special rates.¹⁰ It is to be noted that no allowance was made "for expenditure on such items as tram fares, insurance other than State, tobacco, beer, petty luxuries, amusements, betting, nor for pocket money of any kind".¹¹

Bowley's poverty, or bare subsistence, standard in 1924 could be readily calculated for a family of any given composition (knowing the rent and accepting the allowances just quoted for fuel) from the expenditure scale provided in the above table. Thus, for a family of husband, wife, and three young children, one an infant under 5 and two of school age, the estimated minimum expenditure in 1924, exclusive of rent and fuel, would be 30s. 3d., the allowance for food being 23s. 8d., and for clothing, cleaning, and lighting 6s. 7d.

Sources of Error—In a useful chapter at the end of the book which gives an account of his earlier enquiry,¹² the author discusses the accuracy of his results. He points out that, in any such investigation, errors may arise in four ways:

- (1) the information collected may be unreliable;
- (2) the definitions and standards used may be unsatisfactory;
- (3) the households visited may not be a fair sample of the whole;

- (4) the sampling process itself is subject to error which can be estimated.

The following comments on these four types of error are in part based on Professor Bowley's own observations.

(1) If there is no bias on the part of the investigators, if they have been suitably trained for the work, and if they carry out their instructions with care and thoroughness, small personal errors in one direction are usually balanced by small errors in the opposite direction. Moreover, the reliability of the data collected can often be checked by means of information obtainable from other sources, *e.g.* trade union rates of pay for specific occupations, standard rents of houses in a particular locality, number of children on school attendance registers, normal rates of national insurance benefit, and known pensions and public assistance scales. All schedules are carefully scrutinized as they come in from the field workers and, if any item seems to be incomplete or doubtful, the entry is at once referred back to its source to be checked.

(2) It need hardly be stated that Professor Bowley, with his long and exceptional experience, framed his definitions and standards with extreme care. Only by so doing can ambiguity and consequent trouble be avoided later. In a few cases an improvement in precision was made in his later survey. One example will suffice. We read that

In the 1924 inquiry investigators were asked to specify the number of bedrooms and the presence or absence of a parlour, kitchen, scullery, pantry, larder and bath, with the following caution: A kitchen is distinguished from a *scullery*, by having a coal range and being usable as a living-room. Sculleries so defined were not to be considered as rooms.¹³

Yet even this did not always prevent mistakes, as the following admission testifies:

Great difficulty has been experienced in carrying out what at first sight seems the simple process of counting the number of rooms in a house. Different observers classify the usual division of the ground floor into two compartments, as kitchen, 1 room,

scullery 0; or living-room 1 and kitchen 1, according as they regard the back compartment as scullery or kitchen; and similarly if there is a threefold division into parlour, kitchen and scullery, either two or three rooms may be recorded. The Census authorities, who depend for the most part on the unverified statement of the house-holder, appear not to have overcome this difficulty, which is particularly great in Warrington owing to frequent and unexpected differences between houses in the same row. . . . These considerations make the comparison in respect of overcrowding between 1913 and 1924 hazardous, and only broad conclusions can safely be drawn.¹⁴

This last remark presumably refers to Warrington only, not the other towns.

(3) A random sample, if it is to be representative of the whole "population"¹⁵ from which it is drawn, must be unbiased and of adequate size. Theoretically, a "random" sample means one in which every member of the population stands the same chance of being selected. This could be achieved by the following device. If each member of the population were given a distinctive number, marked on a counter, and if these counters—all being of the same size and shape—were placed in a large box and well shaken, drawings of the counters blind-fold could then be made from the box up to any number, according to the size of the sample wanted. The method actually adopted for securing an unbiased sample of houses to be visited in Reading—going through a directory of all the houses and ticking every eighteenth or twentieth house in serial order—was equally satisfactory. Clearly, since in the sample every part of the town was fairly represented, the sample should itself be representative of the whole population of households, assuming that it was also adequate in size. This leads us on to the next consideration.

(4) What size of sample is adequate? The answer depends on the size of error we can afford to regard as negligible; for it stands to reason that, the larger the sample, the less the error due to the sampling process. This can readily be seen by going to the extreme limit, and making the sample equal in size to the population from which it is drawn, when the

error would of course be zero, as in the formula given in a note at the end of the chapter (when n is made equal to N) on the procedure to be followed in calculating what is termed the *standard error* due to sampling.

Results of First Survey—We may now return to the Bowley survey and briefly review its results. Combining four of the five towns for which figures are available, it appears that, in 1913-14, 289 out of the 2,158 working-class households investigated, or $13\frac{1}{2}$ per cent, were on or below the poverty line as defined by Rowntree.¹⁶

On Bowley's new standard, the proportion is only very slightly less, becoming 13 per cent. These figures are also in close agreement with the proportion of working-class families which were found to be in poverty in York at the beginning of the century, when Rowntree estimated that 1,465 families out of a total of 11,560, or 12.7 per cent, were below his poverty line. This close numerical agreement for the combined towns, however, masks a wide disparity between the results for individual towns, which varied from under 7 per cent to over 20 per cent.

The figures just quoted give from one point of view too rosy a picture of conditions in the towns investigated, because the unit in which they are expressed is the household or family. Those families fare worst which contain the largest number of dependants. Thus, it was recorded that "in Northampton *just under one-sixth of the school children and just over one-sixth of the infants*; in Warrington *one-quarter of the school children and almost a quarter of the infants*; in Reading *nearly half the school children and 45 per cent of the infants*" were living "in primary poverty irrespective of exceptional distress caused by bad trade or short time".¹⁷ These last qualifying words are added because, in Bowley's first enquiry, full-time wages were assumed in assessing the position relative to the poverty line.

The principal cause of this state of affairs was low wages. "Actually *one-half of the households below the poverty line at Warrington and Reading, nearly one-half at York, and one-third at Northampton, were living in poverty because the wages of the*

head of the household were so low that he could not support a family of three children or less."¹⁸

Results of Second Survey—In his later survey of the Five Towns Bowley estimated the number and proportion of families in poverty on two different assumptions: (1) that all workers were fully employed, and (2) that some worked more and some less than normal full time, the actual income earned in a specified week being taken as the basis of measurement.

Comparing conditions at the two dates, the conclusion reached can be given in the author's own words, combining the experience of the five towns:

The improvement since 1913 is very striking. Even on the assumption that all the families suffering from unemployment in a particular week had no adequate reserves and that their unemployment was chronic, the proportion in poverty in 1924 was little more than half that in 1913. If there had been no unemployment the proportion of families in poverty in the towns taken together would have fallen to one-third (3·6 per cent against 11 per cent) and of persons to little over a quarter (3·5 per cent against 12·6 per cent) of the proportion in 1913. All the towns except Stanley show an improvement in nearly the same ratio; and it is also found for both sexes and all ages.¹⁹

Explanation of Improvement—How was this remarkable improvement explained? Writing just after completing the analysis of the results of the earlier enquiry, Bowley expressed in emphatic terms the view that "of all the causes of primary poverty which have been brought to our notice, low wages are by far the most important. We would go further and say that to raise the wages of the worst-paid workers is the most pressing social task with which this country is confronted to-day".²⁰ This confirmed the conclusions reached previously by both Booth and Rowntree, that low rates of wages were a most potent cause of poverty.

Ten years after his first survey Bowley writes:

It has needed a war to do it, but that task has been accomplished, so far as rates of wages are concerned, though employment has not

yet been permanently possible for all at these rates. . . . While wages have risen towards meeting needs, these needs themselves have fallen towards meeting wages, with the reduction in the number of children. The proportion of families in which there are five or more children that are in poverty has fallen greatly, but the number of such families is also relatively much smaller.²¹

Stanley was the one exception in the enjoyment of these more favourable conditions. This was due to the fact that in 1913 this colliery district was relatively better off than any of the other five towns investigated. The proportion of families in poverty there, assuming full-time wages, was only 6 per cent as against proportions varying in the other towns from 8 per cent to 23 per cent.²² The average size of family had fallen in Stanley by 1923, but not by very much, whereas unemployment had increased in common with the experience of all coalfields depending in part on the export trade, so that about one working week in eight on the average was lost.²³

Apart from the sampling method which was an original feature of Bowley's Five Town Survey, he gave a very detailed analysis of the composition of the households investigated, distinguishing between earners and dependants according to sex and age. This analysis, amounting to a catalogue of the different types of household and their numbers, showed what a bewildering variety was to be found in each town.

Measurement of Overcrowding—The housing position was also discussed along more or less familiar lines. Recalling that the customary definition of overcrowding used by the Census Authorities, to compare conditions in different parts of the country, was the occupation of a tenement by more than two persons on the average to a room, Bowley pointed out that this paid no attention to the different needs of young and old. To overcome this defect he therefore introduced an improved measure, relating the number of rooms in each tenement to the number of "equivalent adults" housed. For this purpose he treated all boys over 18 and all girls over 16 as adults, any other boy or girl over 14 as equivalent to three-quarters of an adult, a child between 5 and 14 as one-half an adult, and an infant under 5 as one-quarter an adult. On

this basis, at his first enquiry, he reckoned any dwelling or tenement to be overcrowded if it housed on an average more than one equivalent adult per room.²⁴ In his second enquiry, ten years later, he distinguishes two degrees of abnormal density of occupation: *crowding* (more than one equivalent adult per room) and *overcrowding* (more than two equivalent adults per room).²⁵ But he also appears to have used the term "overcrowding" as equivalent to "crowding".²⁶

A numerical example will illustrate his method of calculating the extent of crowding and overcrowding in a given area, using data relating to Stanley.²⁷

Note

Calculation of the Standard Error—The procedure to be followed can be illustrated by a simple example. Suppose n houses investigated out of a total population of N houses, and suppose a proportion p of them is found to be overcrowded, according to some approved definition of overcrowding. In such a case the standard error of the proportion is given by the formula:

$$\text{S.E. of } p = \sqrt{pq\left(\frac{1}{n} - \frac{1}{N}\right)}, \text{ where } p + q = 1.$$

If n is small compared with N , so that $\frac{1}{n}$ is large compared with $\frac{1}{N}$, we can ignore $\frac{1}{N}$. In any case its omission makes for greater safety, because $\frac{1}{n}$ is greater than $\frac{1}{n} - \frac{1}{N}$. Hence, if we take

$$\text{S.E. of } p = \sqrt{pq/n},$$

we are assuming a standard error rather greater than the true error. For example, if a random sample of 400 houses were investigated out of a total of 20,000, and if one-tenth of them were found to be overcrowded, the result could be recorded thus:

$$\begin{aligned} \text{Proportion of houses overcrowded} &= \frac{1}{10} \pm \sqrt{\frac{1}{10} \cdot \frac{9}{10} / 400} \\ &= \frac{1}{10} \pm \frac{3}{10} \cdot \frac{1}{20} \end{aligned}$$

This implies that the true proportion of overcrowded houses (if all 20,000 could be examined, in place of only a random sample of 400) might quite likely differ from $1/10$ by $3/200$, in excess or defect. But, it can be proved mathematically that the chance against an error greater than $2(3/200)$ is about 20 to 1. In other words, if 20 samples, each of 400 houses, were selected at random, in only about one out of the 21 should we expect to find the proportion overcrowded differing from $1/10$ by more than $2(3/200)$ in excess or defect. Further, it can be proved that the chance against an error greater than $3(3/200)$ is much less, in fact only about 370 to 1. In other words, if 370 samples of 400 houses were selected at random, in only about 1 out of the 370 should we expect to find the proportion overcrowded differing from $1/10$ by more than $3(3/200)$.

It is often of greater interest to state the *number* of overcrowded houses, instead of the *proportion* to be expected in a town of N houses, if we base our expectation on a random sample of n houses, where n is small compared with N . In that case the new formula can readily be obtained from the old by multiplying throughout by N . We thus have:

$$\text{Number of houses overcrowded} = Np \pm N \sqrt{pq/n},$$

the interpretation of which is that the true number may quite likely differ from Np by as much as $N\sqrt{pq/n}$, in excess or defect, but that it is very unlikely that the error, either way, will exceed $3N\sqrt{pq/n}$.

In the above numerical example, if we based our expectation on a random sample of 400 houses, 40 of which (*i.e.* one-tenth) were found to be overcrowded, we might expect the number of overcrowded houses in a town containing altogether 20,000 houses to be about 20,000 ($1/10$), or 2,000. The true number, however, might quite likely differ from this by as much as 20,000 ($3/200$), or 300 houses, falling thus within a range of 1,700 to 2,300. It would be 20 to 1 against the true number differing from 2,000 by more than 600, and it would be 370 to 1 against an error exceeding 900 either above or below 2,000.

REFERENCES

¹ *J.R.S.S.*, Vol. LXXVI, pp. 672-701, 1912-13. This pioneer enquiry was the result of a small grant made through the Workers' Educational Association.

² *Livelihood and Poverty*, 1915, p.12. The population of York, it will be recalled, at the date of Rowntree's first survey, was just under 76,000.

³ *Ibid.*, p. 13.

⁴ *Has Poverty Diminished?* 1925, p. 27.

⁵ *Livelihood and Poverty*, p. 176.

⁶ *Has Poverty Diminished?* p. 28.

⁷ *Livelihood and Poverty*, pp. 29, 15.

⁸ *Ibid.*, pp. 29, 30.

⁹ *Ibid.*, p. 80.

¹⁰ *Has Poverty Diminished?* p. 36.

¹¹ *Livelihood and Poverty*, p. 81.

¹² *Ibid.*, Chapter VI.

¹³ *Has Poverty Diminished?* p. 31.

¹⁴ *Ibid.*, pp. 84, 85.

¹⁵ The word "population", statistically, is used in a special sense, denoting any group of things, not necessarily people, having certain features in common. In this case the population is a group of households of a particular class in a selected town.

¹⁶ *Livelihood and Poverty*, p. 38. Extreme care is needed, particularly in comparing the results of different surveys in this and subsequent chapters, to distinguish between percentage of *families sampled* in poverty, percentage of *population sampled* in poverty, and percentage of *total population* in poverty. (See a note, on *Definition of Terms*, at the end of Chapter VIII.)

¹⁷ *Livelihood and Poverty*, p. 45.

¹⁸ *Ibid.*, p. 41.

¹⁹ *Has Poverty Diminished?* pp. 16, 17.

²⁰ *Livelihood and Poverty*, p. 42.

²¹ *Has Poverty Diminished?* pp. 20, 21.

²² *Ibid.*, p. 17.

²³ *Ibid.*, p. 23.

²⁴ *Livelihood and Poverty*, p. 22.

²⁵ *Has Poverty Diminished?* p. 40.

²⁶ *Ibid.*, pp. 170, 172, where the proportion of overcrowded houses in Stanley is stated to be 62½ per cent.

²⁷ *Ibid.*, Table IIA, p. 172.

CHAPTER VII

GOVERNMENT SAMPLING EXPERIMENTS

First Official Experiment—The ice once broken by Professor Bowley, a Government Department was persuaded to dip, though not without shivering, into the waters of sampling. It came about in this way. In the autumn of 1923 the Ministry of Labour wanted a fairly detailed picture of about a million and a quarter workers who were recorded from week to week as unemployed. The same workers would not of course be out of work each week: the picture was a continuously changing one. In January of that year a trial run had already been made: certain recorded characteristics of claimants to unemployment benefit had been investigated by sampling every third claim form in the live claims files at employment exchanges.¹ This first analysis related to 372,875 persons and was not without value; but its value was limited because the particulars recorded were not full enough. Some of the additional information desired could only be obtained by interviewing each claimant. The results proved extremely useful, however, for another purpose, namely, as a test of the reliability of later but smaller samples.

The first question calling for decision was the size of the sample necessary to give results which could be accepted without doubt as true of the whole body of claimants, but which at the same time would not be too large to permit a personal interview of each member of the sample. The results of the preliminary experiment, the 1 in 3 sample, were shown to Professor Bowley, who made the suggestion that a sample of 1 in 1,000 claimants would be accurate enough for many purposes. Fortified by this assurance, John Hilton, who was then Director of Statistics at the Ministry of Labour,² decided to try a sample of about 10,000 cases spread throughout Great Britain. This was roughly 1 per cent of all claimants at employment exchanges.³

Method of Choosing the Sample—To prevent over-representation of the more approachable claimants, or of those personally known to the office staff by reason of their more frequent visits at the exchange, a fairly rigid system of choice of claimants had to be planned. The procedure adopted was to tab every 100th claim in each box of claims which constituted the Live Insured Files. The insured person whose claim was thus tabbed was to be invited into the manager's room for interview when next he called at the exchange.

Instead of starting with the first claim in his files each manager was given a different starting point, so that the selection might be distributed as evenly as possible over all occupations. Otherwise there would have been over-representation of occupations at the beginning of the files, *e.g.* carpenters and joiners, because that occupation was the first in each file, the files being arranged on a uniform pattern, based on an occupational classification, in all exchanges.

Again, to avoid burdening the managers of large exchanges with too much interviewing—since it was deemed essential that all men claimants should be interviewed by the manager himself and all women claimants by the senior woman officer—local variations were permitted from the 1 in 100 ratio. This no doubt resulted in an under-representation of claimants at the larger exchanges, counter-balanced by an over-representation of claimants at medium and smaller exchanges; but it was hoped that it would not materially prejudice the results since no comparisons were to be drawn between conditions in large and small areas. It was thought that no manager ought to be asked to report on more than 30 cases. If, therefore, the total number of live claims on the register of a particular exchange was 2,500, this meant that every 83rd claim at that office would have to be tabbed, starting at any assigned classification and coming back to the beginning after working to the end of the file.

Another departure from the strictly random principle of sampling had to be permitted. It so happened that not all persons whose claims were tabbed would necessarily call at the office. Some might have left the district or, having moved

house, be registering at another exchange; others might have fallen ill or found work. To insure that the investigation could be finished as quickly as possible and that the full quota of completed schedules would be forthcoming, the counter clerks were instructed to send up for interview either the person whose claim was tabbed or the first claimant calling at the exchange whose claim was among the five claims on either side of the tabbed claim. This amount of latitude was certainly too wide and, in subsequent sampling investigations made by the Ministry, the number of possible substitutes was reduced first to three and then to one on each side of the claim tabbed. Thus, the later ruling was that the claimant whose claim appeared immediately before or immediately after the tabbed claim could be selected for interview, if either of them chanced to call at the office during the five days allowed for the investigation before the claimant first chosen.

Comparison of Different Sized Samples—In addition to the 1 per cent sample taken in November, 1923, an examination was undertaken towards the end of that year of 10 per cent of all the claims made during the period 2nd November, 1922, to 17th October, 1923. The interest in this case was centred in claims made over a long period of time, as distinct from claims current on a particular day. The information provided by this investigation as to the ages of persons whose claims were "live" on 17th October made comparison possible as regards age between the 1 in 3 sample of January, the 1 in 10 sample of October, and the 1 in 100 sample of November, all relating to the same year. The comparison sufficed to prove that the 1 per cent sample was "nowhere very wide of the mark" and that it "answered most of its purposes quite as well as a 10 per cent or 33 per cent enquiry would have done".⁴ Above all, this practical test convinced many in Government Departments, who from ignorance of statistical method had hitherto doubted its scientific basis, that it was possible to get trustworthy results by taking random samples which could be handled quickly instead of meticulously attempting the quite impossible task of examining every member of a large "universe".

John Hilton, in his second paper to the Statistical Society, remarked how "tentative and even timorous" the first official excursion into this field had been, and how his department became more venturesome and gained confidence as they proceeded to take smaller samples, passing from the 1 in 3 to 1 in 10 and 1 in 100. The particular virtue of the small sample was that it permitted "much more detailed information upon the particular features of the individual case to be collected and analysed, and that there resulted a very considerable saving in the economy and time of prosecuting the enquiry and presenting its results".⁵

Other Sampling Enquiries—Four other investigations into the circumstances of persons insured against unemployment were made during the next few years. The 1 per cent enquiry of November, 1923, was repeated, with sundry improvements, in November, 1924. In mid-1925 a 10 per cent sample of juveniles registered for employment was investigated. In April, 1926, a sample of 1 in 218 of all insured persons, employed and unemployed, was examined; and a year later, in April, 1927, another 1 per cent sample of claimants to benefit was taken. In this last investigation the procedure was modified so as to lessen the labour of enquiry on matters about which no fresh facts were wanted and to enlarge the field of information in other directions which had by then assumed greater importance.

The repetition in November, 1924, with a new sample of claimants but on precisely the same basis, of the enquiry made in November, 1923,

served to prove beyond all cavil that a soundly contrived one per cent sample of a million or more persons can be accurately representative, for all intended purposes, of the main body of persons from which the sample is taken . . . the chances of the same individual appearing in the second enquiry as had appeared in the first were perhaps 1 in 50,000 . . . yet the distribution of age, marital state, physique, health, physical defects, and industrial training came out as almost identical in the two enquiries.⁶

Where any marked differences appeared, legislative or other known influences had been operating to account for them,

and it became possible to trace the effects of such changes in the law or its administration by measuring these differences.

The third 1 per cent sample was used to classify claimants to benefit according to their employment and unemployment record. It served to show that "given a set of schedules compiled from a properly constituted sample, analyses of all kinds can be made at will or on particular occasion". The results obtained in this enquiry once more confirmed, by comparison with the results of earlier samples, the fundamental reliability of the method employed. Below is a table, taken from Hilton's paper but in an abbreviated form, illustrating the comparability of the three samples.⁷

DISTRIBUTION BY AGE OF MALE CLAIMANTS SAMPLED

<i>Age last Birthday</i>	<i>No. Sampled, April, 1927</i>	<i>Per cent Distribution</i>		
		<i>April, 1927</i>	<i>Nov., 1924</i>	<i>Nov., 1923</i>
16-19	564	6.7	6.8	6.6
20-24	1,278	15.2	15.6	16.5
25-34	2,027	24.1	21.6	22.3
35-44	1,496	17.8	17.4	17.1
45-54	1,482	17.7	17.3	17.8
55 & over	1,557	18.5	21.3	19.7
TOTAL	8,404	100.0	100.0	100.0

Sampling the Insured—The Statistical Department of the Ministry of Labour began in 1926 to give thought to the idea of extending the sampling principle in order to obtain information about the very much larger body of all insured persons, comprising the employed as well as the unemployed. A file, containing particulars as to the identity, contributions paid, and benefits received, of all insured persons was kept at a Central Claims and Record Office in Kew. The total number

of these ledger accounts was about $17\frac{1}{2}$ million; for they included the accounts of many persons who, for one reason or another, had gone out of insurance. It would have been impracticable to deal with a sample of 1 in 100 taken from so large a universe. The sample adopted was 1 in 218, for the convenient reason that 218 was the average number of accounts per ledger, though some were larger, rising to a maximum of 350, and some were much smaller. The accounts were arranged in general, at each local office, according to the date order of each individual's original entry into insurance, irrespective of sex, age, or occupation. To avoid bias in favour of the earlier dated accounts, the last account from each ledger was selected for the sample. This gave a total of 80,233 accounts, of which 58,347 related to "live" cases, insured persons in the true sense. The balance related in the main to persons on whose account there had been no record of contributions paid into or benefits drawn out of the insurance fund since July, 1925, *i.e.* over a period of roughly 21 months: they were therefore treated as lapsed cases.

It should be explained that the estimated average of 218 accounts was itself obtained by counting the actual number of accounts in about 3,500 ledgers spread over the whole range, and it was on this basis that the further estimate of $17\frac{1}{2}$ million was reached as the aggregate of all the accounts in the Central Office. When allowance was made for lapsed cases, on the evidence contained in the experimental sample, the balance of insured persons was found to agree very closely indeed with the total found at the last recorded count of the insured population in July, 1925. It is the usual practice, at the annual exchange of old unemployment books for new, made hitherto at the beginning of each insurance year, to count them and so get an estimate of the total insured population.

A further double confirmation of the accuracy of the sampling system and of the National Insurance records was provided, for males and females separately, by comparing the proportion of insured persons found in each of about 100 industrial groups, adopting the customary classification of the Ministry of Labour in its monthly issue of unemployment

statistics recorded in the *Ministry of Labour Gazette*. This comparison of results proved also to be highly satisfactory. Such numerical checks, whenever they can be applied, are an invaluable and indeed indispensable feature of all statistical work. They serve as a danger signal, if one has unconsciously slipped into some error in method, calculation, or analysis, and as an encouragement, if all is going well.

The accounts of claimants of unemployment benefit in this last enquiry were separated from the rest, and the schedules relating to them were sent to the local employment exchanges so that other particulars could be entered on them concerning marital state, number of dependants, benefits authorized, etc. When these schedules were analysed, the results again agreed closely with those obtained by the quite different and more direct approach, taking a 1 per cent sample of the claimants to benefit alone.

The Sampling Method Justified—An extract from Hilton's paper is worth quoting:

By this particular application of the sample method it was possible to present, within a few months, a detailed account of all the immediately relevant circumstances of 17,500,000 persons. Apart from the strictly insurance information as to contributions, benefit, etc., which it yielded, it furnished, for the first time, an age distribution of persons insured against unemployment, industry by industry, and from this distribution it was for the first time possible to tabulate the rate of unemployment among persons of various ages, not only among the insured population as a whole, but among persons engaged in particular industries. Although "persons insured against unemployment" is not a Census category, the results of the enquiry have in some degree served as inter-censal data concerning a very large section of the "occupied" population.⁸

It is at once clear to anyone who studies these early experiments in sampling, which only a large organization such as a Government Department could undertake or sponsor on a national scale, that the potential field for social research was immensely widened and enriched by the new method.

REFERENCES

¹ The claim form is the form on which the applicant makes his claim for benefit, and which he signs from time to time as evidence of continued unemployment.

² He was subsequently appointed to the Chair of Industrial Relations in the University of Cambridge, although he was better known to the general public as a frequent and most effective wireless speaker on a variety of subjects.

³ This chapter is based on two papers by the late John Hilton, published in *J.R.S.S.*, Vol. LXXXVII, Pt. IV, 1924, and Vol. XCI, Pt. IV, 1928, under the titles: *Enquiry by Sample: An Experiment and its Results*, and *Some Further Enquiries by Sample*. In addition to these two papers which concentrated chiefly on method, a full account of the results of this first series of sampling enquiries was issued by the Ministry of Labour, as follows: *Report on an Investigation into the Personal Circumstances and Industrial History of 10,000 Claimants to Unemployment Benefit*, 1924; two further reports under the same general title but relating to 10,903 and 9,748 claimants, respectively, published in 1925 and 1928; *Report on an Inquiry into the Personal Circumstances and Industrial History of 3,331 Boys and 2,701 Girls Registered for Employment at Employment Exchanges and Juvenile Employment Bureaux*, 1926; and *Report on an Investigation into the Employment and Insurance History of a Sample of Persons Insured against Unemployment in Great Britain*, 1927.

⁴ *J.R.S.S.*, Vol. LXXXVII, Part IV, 1924, p. 552.

⁵ *J.R.S.S.*, Vol. XCI, Part IV, 1928, p. 519.

⁶ *Ibid.*, p. 520.

⁷ *Ibid.*, pp. 528, 529.

⁸ *Ibid.*, p. 528.

CHAPTER VIII

NEW LONDON SURVEY

Scope of New Survey—A new survey of London Life and Labour was begun in 1928 centred at the London School of Economics and Political Science. This was made possible by funds received from the Laura Spelman Rockefeller Foundation Memorial of America and from various British Trusts and City Companies and Charities. It was a formidable undertaking but it had the backing of a strong Committee under the Chairmanship of its Director, Sir Hubert Llewellyn Smith, G.C.B., who had taken an active part in the original survey by Charles Booth.

The first volume concerning the new work was published in 1930. It presented a vivid picture, illustrated by statistical tables and diagrams, of the changes in social and economic conditions which had taken place during the forty-odd years that had elapsed since Booth began his enquiries. The conclusions reached in this volume were based mainly on the study of material already available in published or unpublished form. Volumes II, V, and VIII, issued in 1931, 1933, and 1934, gave a detailed account of each of London's chief industries, trades, and services, paying more particular attention to the workers engaged in them than to industrial development. Volumes III and VI described social conditions in the eastern and western Sections of the City and County of London. These appeared in 1932 and 1934. Associated with them were two series of coloured maps, comprising Volumes IV and VII, showing the local distribution street by street of relative comfort and poverty throughout the eastern and western areas, respectively. There are two maps of the inner areas, drawn on a scale of 6 in. to the mile, and three of the outer areas, on a scale of 4 in. to the mile. A separate map illustrates graphically the distribution of overcrowding in the whole survey area. The final volume of the survey, Volume IX, was

issued in 1935. It was divided into four parts: the first dealing with the pursuits of leisure; the second with workmen's clubs and social organizations for adolescent boys and girls; the third with drink, gambling, sex-delinquency, and crime; while the fourth gave some typical pictures of a worker's family life from the inside.

The scope of the new survey was much wider than that of the old, because the boundaries of London had been considerably extended and the population had grown. The original eastern survey area mapped by Booth covered 32,000 acres, and the western area 42,000; the corresponding new areas covered respectively 54,000 and 52,000 acres. The difference is accounted for by the inclusion in the new survey of boroughs outside the county boundary as surveyed by Charles Booth.¹ The population of the old area was little more than $4\frac{1}{4}$ million, that of the new was over $5\frac{1}{2}$ million.²

Migration to and from London—This change in total population was not due only to the change in boundary of the area surveyed. It was the net effect of that change together with the natural increase in the population and the balance of migration. The last two factors would affect the size of the population both in Booth's London and the new area surveyed. The Industry studies draw attention to a tendency on the part of industries to move to the outlying zones of Greater London and often the workers would follow. Such a movement out from Central London has been noticeable, particularly to the north-west sector where new satellite towns have developed. The Census returns showed that between 1921 and 1931 there was an increase in population in the four Metropolitan Counties of at least 700,000 persons, or more than double London's total loss by migration.³

The broad conclusion reached in the survey was that migration into London was increasingly a long-distance movement due to economic causes, while migration out of London consisted largely of short-distance movements in search of a new *milieu*, so leading to an increasing urbanization of the outer areas and an admixture of different strains of population within London.

Compared with forty years ago the acquisition of country bone and sinew to compensate for the comparatively low-grade physique of the Londoner has lost some of its importance owing to the improvement in the health of the London-born population, while it has become less essential to industry as the progress of mechanization has diminished the demand for physical strength as compared with manipulative dexterity. Differences in the level of employment rather than in rates of wages now provide the chief economic stimulus to migration, and the type of migrant whom London now attracts is not so much the low-paid agricultural labourer who expects to make his fortune as the unemployed townsman of the "depressed areas" who hopes to find a job.⁴

Two Methods of Surveying—The attempt to survey so vast and thickly populated an area as the London of to-day, without constantly applying statistical tests to give concrete expression to the description of such conditions as "poor" and "overcrowded", would have led to hopeless confusion. The Committee responsible for supervising the New London Survey were therefore fortunate to have so experienced a statistician as Professor Bowley to plan and direct the statistical attack on the problems presented. To measure the change in conditions since Booth's day it was essential to follow his methods as closely as possible. But, to make trustworthy comparison with later and contemporary surveys in other parts of the country, Bowley also carried out an independent survey of a random sample of the population in the same area by the improved methods which he had done so much to make known through his Five Towns Survey. This second approach served as a check also upon the rougher estimates and conclusions reached by the repetition of calculations on the Booth model. The two methods will be distinguished in this chapter by calling the original the Street Survey and the new the Sampling Survey.

The Street Survey—It will be recalled that the object of this survey was to assign every street, throughout the area investigated, to its appropriate economic and social class. Though Booth's investigators may not have been invariably consistent in their procedure, there is no doubt that his intention was to concern himself with the measurement of differing

degrees of economic well-being or poverty in the "primary" sense of the term as defined by Rowntree.⁵

In order to make comparison possible with Booth's results in 1890 it was necessary to determine the boundary lines between his economic classes A to G, paying very particular attention to the poverty line, since the measurement of the proportion of the population in poverty depends on the precise position of this line. Booth, it will be remembered, defined his "poor" as "those who have a fairly regular though bare income, such as 18s. to 21s. per week for a moderate family", and his "very poor" as "those who fall below this standard, whether from chronic irregularity of work, sickness, or a large number of young children". Thus the upper limit of income, at the date of the original survey, was 21s. for families of moderate size classed as poor, whether the bulk of the income came from low but regular earnings, as in Booth's Class D, or from higher but intermittent earnings, as in his Class C. Now Bowley estimated that in London, owing to the rise in prices, one would require 40s. to buy in 1928-30 what could have been bought forty years before for 21s. He therefore fixed the new poverty line for London at 40s. for a moderate family.

Since, as regards income, there is no difference between Classes C and D, the one differing from the other only in the way the income is derived, these two classes may be combined for our purpose. Class B was also merged with them by Bowley on the grounds that the total number of the poor is now very much less than it was and, in any case, the very poor are for the most part rescued from destitution by the Social Services. Class A may be omitted altogether, because the criterion for identifying this class was one of morals rather than economics.

As for the classes above the poverty-line, the number of servants kept in Booth's day provided the guiding clue for the separation of Classes G and H. In course of time the servant criterion lost significance, so these two classes were combined by Bowley. On the other hand, he thought it convenient to separate Class E (regular standard earners) and Class F (higher class labour), which Booth had combined when he extended

his enquiries from East London to the rest of London. Bowley defined his E and F classes as "roughly representative of unskilled and skilled employments respectively", symbolizing them accordingly by the letters U and S. But neither class was to be wholly confined to unskilled or skilled workers. The new weekly income limits fixed for the two groups were "over 40s. but not over 60s." and "over 60s. but not over £5". The poor he denoted by the letter P, and those earning over £5 a week were labelled M, indicating that they belonged to the middle and upper classes.

Economic Classification by Colour—Bowley's classification⁶ thus became:

Earning over £5 a week	M, marked red on the map
Earning over £3 and up to £5 a week	S, marked pink on the map
Earning over £2 and up to £3 a week	U, marked purple on the map
Earning up to £2 a week	P, marked blue on the map

On this basis the colour of any street was determined by the predominant social and economic condition of its inhabitants, and the device of stripes was used to indicate a mixture in the composition of a street according to the estimated amount of mixture, as follows:⁷

- 50 per cent or more of the inhabitants M, basic colour red.
- Less than 50 per cent M, but 50 per cent or more of the inhabitants S and M, basic colour pink.
- Less than 50 per cent P, but 50 per cent or more of the inhabitants U and P, basic colour purple.
- 50 per cent or more of the inhabitants P, basic colour blue.

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- 25 per cent or more of the inhabitants M, red stripe.
 - 25 per cent or more of the inhabitants P, blue stripe.

This was regarded as an improvement on the blending of colours to represent a mixed street, the device adopted by Booth, in that it led to a more definite interpretation.

A black stripe or colour was reserved for streets containing an appreciable element of a degraded, vicious, or semi-criminal class among the inhabitants. The evidence for this was mainly non-statistical, being based on information supplied by the police and others with an intimate knowledge of the neighbourhood.

The reader is warned not to assume that the decision as to the colour appropriate for any particular street was governed by the "degree of squalor, dilapidation and overcrowding" of the dwellings it contained. There is no doubt some measure of correlation between the condition of houses and the economic grading of their occupants, but it is not so close as it used to be. Hence the need for a separate map to show the overcrowding position in the survey area.⁸

How the Class was Determined—The method adopted to determine the colour of each street—and there were over 10,000 streets, or separately coloured sections of streets, in the Eastern Survey Area alone—was similar to that originally followed by Booth. School Attendance Officers were questioned as to the social condition of the families on their books. They usually know the occupations of the chief earners in each household containing children of school age. From the occupation average earnings could be estimated. This information was checked and supplemented from other sources such as the officials connected with poor relief and employment exchanges.⁹

In a closely reasoned chapter Bowley discusses the precise procedure followed to ascertain the proportion of the population to be assigned to each of his four classes, M, S, U, and P, and how far it was fair to assume that conditions in that part of the population containing school children reflected truly conditions among the rest of the population. Charles Booth thought that, if anything, families with school children would be rather worse off than other families, but he was not able to test this opinion. Bowley, however, could use his independent Sampling Survey to check this assumption. His general conclusion was that a fair comparison could be drawn between the new and the old Street Survey results, because virtually

the same method was employed in each; that the proportion of *working-class families* in poverty was practically the same whether the calculation was based on families of all descriptions or on families with school children only; but that the experience of families with school children tended to exaggerate the amount and proportion of poverty among *working-class individuals* in private families by about one-fifth over the London area as a whole.¹⁰

The Sampling Survey—We need not linger to explain at length this alternative method of measuring the extent of London poverty. The principles involved have already been indicated in sufficient detail in preceding chapters.

The minimum standard of expenditure needed by any family to maintain health and efficiency, as devised by Professor Bowley for the New London Survey, was almost identical with that adopted in his Five Towns Survey, when due allowance is made for the change of prices and conditions in London in 1929 as compared with these other towns in 1924. The Rowntree poverty dietary was slightly modified to permit a weekly consumption of 2 lb. of meat per adult. An increase was made in the allowance of bread and of tea, but a reduction in that of oatmeal and cheese. Also, skimmed milk was replaced by fresh or condensed milk. Some of these modifications were peculiar to London: they had not been adopted in the Five Towns Survey. The net nutritional effect was to provide a diet estimated to give each equivalent adult 3,600 calories a day. This, according to Bowley's calculation, was rather less than Rowntree's minimum allowance but greater than Booth's, whether comparison be made with Booth's Classes C and D (estimated at 2,800 calories a day) or even his Class E (estimated at 3,000). The cost of this standard food budget was reckoned to be 7s. 1d. a week per adult made in 1928.¹¹

The allowance for clothing, on the Rowntree and Five Towns Standard, where again the change in prices was taken into account, amounted to 58s. 6d. a year for an adult and 48s. for a child, say, 1s. 1½d. and 11½d. a week, respectively. If the cost of household sundries, cleaning, and lighting is added, estimated at 3½d. a head weekly, this gives 1s. 5d. for

an adult and 1s. 3d. for a child. This was the estimated expenditure also in 1924, the change in prices under the combined heading of clothing, cleaning, and lighting being regarded as relatively insignificant between 1924 and 1928.

For fuel, including gas for heating and cooking, the prescribed allowance as in other surveys was fixed at $1\frac{1}{4}$ cwts. a week for each household, costing 3s. a week (or 3s. 6d. south of the Thames) the year round.¹²

Comparison with Other Surveys—Professor Bowley was no doubt justified in his claim that comparison was closely preserved between his figures for London by the sampling method and the results of certain other investigations, e.g. the Five Towns Survey, the Rowntree Survey, and the Merseyside Survey. In the week of investigation 11 per cent of the *persons sampled* were found to be in poverty in East London in 1929-30. This corresponded to $6\frac{1}{2}$ per cent for the Five Towns in 1923-24, $15\frac{1}{2}$ per cent in the city of York in 1899, and 16 per cent on Merseyside in 1929-30.¹³ The differences between these figures are in part due to differences in dates of the surveys, but they suggest that it would have been unsafe to take any one of them as likely to be representative of conditions elsewhere without examination.

Results by the Two Methods—We shall next consider the results for London as a whole. It may be well to repeat here the caution that the terms "poor" and "poverty" are used in a technical sense. The authors of the New London Survey emphatically disclaim at the outset "that the standards by which 'poverty' is measured are intended to represent the current standards of the present day. . . . The sole aim has been to apply Charles Booth's standard to present economic conditions." They go on to point out that during the intervening forty years there had been "a change in the prevailing view as to what constitute the minimum necessities of a civilized existence". But, since one of the main objects of the New Survey was to obtain a valid comparison between present and past, it was "essential to keep the same standards throughout, irrespective of any changes in the interval except the change in the purchasing power of money".¹⁴

The broad result of the Street Survey was to show that, in the enlarged area of London investigated in 1929, there were nearly half a million persons in poverty, according to Booth's definition of the term, more precisely, 490,000 out of a total population of 5,653,000, or 8·7 per cent. The extent of poverty was rather greater in the Eastern than in the Western Area, 10·6 per cent as against 7·2 per cent. The percentage 8·7 was reached after careful allowances had been made for the fact that the Street Survey was confined to families containing school children, and for persons in poverty who were not living in private families and who therefore escaped direct observation by the method of enquiry adopted.¹⁵

Next, let us compare the result of the Street Survey with that of the Sampling Survey. The latter was confined to working-class families, whereas the former took in the whole population living in private families, though the conclusions were based primarily on families containing children of school age. The appropriate consideration is therefore the proportion of poverty in working-class families containing school children in both surveys. According to the Sampling Survey the proportion of poverty found in these families in 1929 in the week of investigation was 10·7 per cent; according to the Street Survey it was 11·6 per cent; the corresponding figure, as estimated by Booth, in 1889-90 was 37·3 per cent.¹⁶

Bearing in mind the marked discrepancy in calories noted between the Bowley standard minimum dietary and the Booth budgets of families in the marginal poverty-classes, C and D, remembering also the higher allowance for clothing on the Bowley standard, the closeness of the results obtained by the two independent methods of approach in the New London Survey is striking. Whichever method is preferred, the decrease in poverty in the forty years is approximately 70 per cent. If we relate the number in poverty to the whole population (not the working-class portion alone), according to the Street Survey—Booth's method of approach—the relevant proportions of the population in poverty become 30·7 per cent in 1889-90 and 9·6 per cent, in the original survey area, or 9·5

per cent if the external boroughs of the new survey area are included, again a decline of approximately 70 per cent.¹⁷ Whereas in the Booth Survey two-thirds of the whole population represented something like the proportion above the poverty line, forty years later it was estimated that two-thirds of the working class families alone had a margin of at least 19s. a week above their minimum needs as defined by Booth.¹⁸

A further point of interest, revealed in the coloured maps of the New Survey, was that poverty was more widely dispersed than it had been forty years before. The importance of this lies in the fact that "congested patches of poverty very frequently tend to degradation and foster the slum habit of life, and . . . those evils are often intensified and perpetuated by inter-breeding, especially in areas where free circulation is impeded by physical obstacles such as railways, canals or gasworks".¹⁹

It has been stated above that the proportion of poverty found in working-class families with school children in the Sampling Survey was 10·7 per cent. This was the state of affairs in the actual week of investigation in 1929. Had all workers been fully employed, the percentage would have been halved. A corresponding reduction occurs if we consider all working-class families, not merely those with school children: the proportion of poverty drops with full employment from 9·1 to 4·6 per cent. This shows that many families who may be below the poverty line one week will no doubt rise above it again when the chief wage-earner gets back into work, perhaps even in the following week. On the other hand, other families will have then fallen below it. Unemployment, in short, is only a chronic condition in a relatively small minority of cases, although the uncertainty about the future which the potential loss of work entails is a state of mind experienced by many and it can be very distressing to those concerned. The difference between the 4·6 per cent of the working-class population in poverty, assuming full time, and the 9·1 per cent in the week of investigation is a measure also of the importance of the factor of insufficient employment in causing poverty.

It was responsible in both the East and the West Survey Areas for nearly one-half the total number of cases of poverty in 1929, while inadequate wages in relation to size of family accounted for just under one-fifth.²⁰

Overcrowding—Because the building and repair of houses ceased during the two great wars it is the painful lot of many to-day to find that no empty house is available within their means—to buy or rent—in the neighbourhood where their work requires them to live. The consequence is that families, differing in their outlook upon life, are often obliged to share accommodation and, besides being cramped for space, they may be pining for more privacy. Crowding is thus much less closely associated with poverty than it used to be; although it remains true, of course, that some families could not afford to move out of the overcrowded premises they at present occupy, even assuming alternative accommodation were offered to them, if it was to be at a higher rent.

It was partly on this account that the authors of the New London Survey prepared a special map of overcrowding, distinct from the poverty maps. They treated it, in fact, "less as a symptom and measure of poverty than as a separate, though cognate, social problem". Indeed they judged it to be so grave and urgent a problem that it could be regarded as "the dominant social question of London" at the time when they wrote. As they very pertinently remarked: "Privation of space, fresh air, privacy and restful quiet is in some ways the worst form of privation; since it not only makes it harder to lead a healthy, decent, orderly life, but makes cultural improvement difficult or even impossible."²¹

The map they drew showed graphically 4,165 census enumeration districts, coloured according to the density of the population resident in each in relation to the number of rooms it contained. For this purpose small institutions were included as well as the ordinary dwellings of private families, but districts composed entirely of large institutions were excluded.²² The mean number of persons per room was computed for each district, and a colour scheme was then devised for the map as follows:²³

Less than 1 person to a room	Uncoloured
1 and less than 1.25 persons to a room . .	Light brown
1.25 and less than 1.50 persons to a room .	Mid brown
1.50 and less than 1.75 persons to a room .	Dark brown
1.75 and more persons to a room	Red

Associated with the map was a table which made it possible to compare at a glance one district with another in regard to density of accommodation.²⁴ Other tables showed the proportions in each borough of families and persons living in conditions that might be defined as "crowded", more than one person to a room; "overcrowded", more than two persons to a room; "acutely overcrowded", more than three persons to a room.²⁵

An Improved Measurement of Overcrowding—Although useful for broad comparisons, the measurement of housing accommodation by relating persons to rooms is somewhat crude. It takes no account of the size of rooms or the differences in sex and age of the families to be accommodated. The sex and age difficulty was overcome by employing alternative methods of calculation, but it was not found practicable to include any measurement of size of rooms. Bowley adopted the procedure he had introduced in his Five Towns Survey, reckoning each family in terms of equivalent adults.²⁶ A dwelling was then defined as "crowded" if it housed more equivalent adults than the number of rooms it contained, the kitchen—but not a scullery, back-kitchen, or bathroom—being counted with other living-rooms and bedrooms. But, in addition to this, if the sexes could not be adequately separated at night, the dwelling was also classed as overcrowded, on the so-called Manchester standard, first used by the Manchester Public Health Committee about a decade previously. According to this standard, to avoid overcrowding in bedrooms: (a) the sexes, where aged 10 and over, were to be separated, the only exception allowed being that of married (or ostensibly married) couples; (b) counting persons aged 10 and over as 1, and persons under 10 as $\frac{1}{2}$, there were not to be, on average, more than $2\frac{1}{2}$ persons to a bedroom. But this second rule was

to be applied with discretion, *e.g.* 3 males and 2 females, but not 4 males and 1 female, might occupy 2 bedrooms.²⁷

Turning to the results of this part of the survey, the order in which the boroughs appeared, as to degree of overcrowding, was nearly the same by the different tests used. On every test Finsbury was the most overcrowded borough. Also, the families most frequently overcrowded, not unnaturally, were those containing children.²⁸

The mean number of rooms per household increases, but the mean number of rooms per head diminishes, as the family increases in size in both East and West Survey Areas.²⁹

<i>Size of Family</i>	I	2	3	4	5	6	7+
<i>Mean No. of Rooms</i>							
Per household E	1.6	2.8	3.2	3.4	3.6	3.9	3.9
Per household W	1.6	2.6	3.0	3.2	3.3	3.7	3.9
Per person E	1.6	1.4	1.1	0.85	0.7	0.65	0.5
Per person W	1.6	1.3	1.0	0.8	0.7	0.6	0.5

The last two lines suggest that the Western Area was more overcrowded than the Eastern, but further examination reveals that there were rather more large families in the east than in the west, with the result that the distribution of persons per room in the two areas was in fact very similar, each showing 8 per cent housed 3 or more to a room.

WORKING-CLASS FAMILIES*

<i>Area</i>	<i>Percentage Distribution of Persons Housed</i>			
	<i>Less than 1 per room</i>	<i>1 but less than 2 per room</i>	<i>2 but less than 3 per room</i>	<i>3 or more per room</i>
Eastern	19	55	18	8
Western	20	55	17	8

* *New Survey*, Vol. VI, p. 63.

In short, large tenements were not so frequent in the west as in the east, one, two, and three-roomed tenements being more common; but, with small families inhabiting them, the mean result on balance was as follows:³⁰

<i>Area</i>	<i>Persons per Tenement</i>	<i>Rooms per Tenement</i>	<i>Persons per Room</i>
Eastern	3·69	3·17	1·16
Western	3·33	2·89	1·15
Whole	3·50	3·02	1·15

These last three tables illustrate the desirability of trying to probe deeper into the reasons for a particular result, especially if at first sight it is not such a result as one would expect.

Note.

Definition of Terms—In another of his works³¹ Professor Bowley brings together no fewer than twenty-six different estimates of poverty used in *The New Survey of London Life and Labour*, “any one of which,” as he points out, “might be quoted legitimately, if accompanied by a definition of the scope and method. It is evident that great care is necessary in making comparisons in place or time to secure uniformity of definition.” In the Street Survey the percentage of working-class persons estimated to be in poverty was 11·6, adjusted to 8·7 for the whole population. The remaining estimates were tabled as follows:

PERCENTAGES BELOW THE POVERTY LINE

	<i>Persons</i>		<i>Families</i>	
	<i>Working Class</i>	<i>All</i>	<i>Working Class</i>	<i>All</i>
Excluding institutions				
Full-time				
Incomes pooled	4.6	3.3	5.7	4.1
Incomes not pooled	7.6	5.5	7.5	5.4
Week of Investigation				
Incomes pooled	9.1	6.6	9.8	7.0
Incomes not pooled	13.2	9.5	12.2	8.8
Including institutions				
Full-time				
Incomes pooled	5.0	3.6	—	—
Incomes not pooled	8.4	6.0	—	—
Week of Investigation				
Incomes pooled	10.0	7.2	—	—
Incomes not pooled	13.4	9.7	—	—

REFERENCES

- ¹ See statement on covers of Map, Vols. IV and VII.
- ² *Life and Labour*, 1902, Vol. II, p. 21; *New Survey of London Life and Labour*, Vol. VI, p. 3, referred to subsequently in footnotes for brevity as *New Survey*.
- ³ *New Survey*, Vol. VI, pp. 250, 252, 253.
- ⁴ *Ibid.*, Vol. VI, p. 260.
- ⁵ See his definition of the "poor", quoted in Chapter IV, p. 7.
- ⁶ *New Survey*, Vol. III, pp. 104-106.
- ⁷ *Ibid.*, pp. 107, 108.
- ⁸ *Ibid.*, Vol. III, p. 109.
- ⁹ *Ibid.*, pp. 111-113.
- ¹⁰ *Ibid.*, Vol. III, pp. 121, 145.
- ¹¹ *Ibid.*, Vol. III, pp. 427, 428, 432.
- ¹² *Ibid.*, Vol. III, p. 435.
- ¹³ *Ibid.*, Vol. III, p. 81; *Has Poverty Diminished?* p. 18; *Poverty: A Study of Town Life*, pp. 143-144; *The Social Survey of Merseyside*, Vol. I, p. 323.
- ¹⁴ *New Survey*, Vol. VI, p. 2.
- ¹⁵ *Ibid.*, Vol. III, pp. 3, 147, 148.
- ¹⁶ *Ibid.*, Vol. VI, pp. 149, 87, 126.
- ¹⁷ *Ibid.*, Vol. VI, pp. 3, 124.

- ¹⁸ *Ibid.*, p. 9.
- ¹⁹ *Ibid.*, p. 5.
- ²⁰ *Ibid.*, Vol. VI, p. 108.
- ²¹ *Ibid.*, Vol. III, p. 18.
- ²² *Ibid.*, p. 253.
- ²³ See cover of Overcrowding Map, *New Survey*, Vol. IV.
- ²⁴ *New Survey*, Vol. III, pp. 236-241.
- ²⁵ *Ibid.*, Vol. III, p. 247 and Vol. VI, pp. 56, 57, 63.
- ²⁶ See Chapter VI, p. 12.
- ²⁷ *New Survey*, Vol. III, pp. 229, 420.
- ²⁸ *Ibid.*, Vol. VI, pp. 57, 60.
- ²⁹ *Ibid.*, Vol. III, p. 227; Vol. VI, p. 56.
- ³⁰ *Ibid.*, Vol. VI, p. 55.
- ³¹ *Wages and Income in the United Kingdom since 1860*, A. L. Bowley (Camb. Univ. Press, 1937), p. 64. See also a note by the same author on the *Effect of Modifying the Poverty Line*, *J.R.S.S.*, Vol. XCIX, pp. 364-366, 1936.

CHAPTER IX

SECOND YORK SURVEY

IN 1936 Rowntree repeated the enquiry he had made at the beginning of the century, in order to discover what changes had occurred in the living conditions of the workers in the city of York, and how far they had benefited, during a period when he remarked that "more far-reaching steps had been taken to raise the standard of life of the workers than during any period of similar length".¹

Slight Changes in Procedure—Much the same method of investigation was followed as before. There was a house-to-house visitation: 5 women and 2 men called upon as nearly as possible every working-class family, particular care having been taken to discover just the right type of investigator for this purpose. The same particulars were sought, as to number in the family by sex, age, and occupation; the rent, size, and condition of the house. But it is significant that this time no attempt was made to ascertain earnings. As a consequence, presumably, of his earlier experience, Rowntree had come to the conclusion that such information was apt to be unreliable. To fill this gap, however, he had access to the wages books of some 60 per cent of the workers included in the enquiry through the friendly co-operation of several of the largest employers in the city. As to the rest, trustworthy information could be had from employers and trade union leaders concerning normal rates of pay for different kinds of work, and this enabled him to estimate with confidence their earnings.

On this occasion other sources of income were also included, such as pensions, unemployment and health benefit, public assistance, etc., all of which could be checked from a knowledge of the local scales, although again it was found that information was usually supplied by the householder quite readily. There appears in this survey to have been a slight difference of procedure too in dealing with earnings of children.

In the earlier enquiry family income meant total earnings, including those of the grown-up children living at home. In the later enquiry, family income included only estimated payments by older children for board and lodging; while the sums allowed as pocket-money to children earning up to 15s. a week were not included as earnings.²

New Needs Standard—As his new "poverty line" standard Rowntree adopted an expenditure of 43s. 6d. a week for man, wife, and 3 children, or 53s. on adding the average rent paid for a dwelling which such a family would normally occupy. This figure had been reached as the result of an investigation into what he called *The Human Needs of Labour*, an account of which was given in a book with that title published in 1937, modelled on an earlier volume (1918) which had become out of date.

The allowance for food was based on the report of an expert committee appointed by the British Medical Association in 1933 to determine the minimum expenditure essential to maintain health and working capacity. In his original survey, it will be remembered, he allowed 3,500 calories per day for a man doing moderate work.³ The B.M.A. Committee recommended for the normal man 3,400 calories, *in the food as purchased*, to be made up of 100 grammes protein (one-half to be first-class protein), 100 grammes fat, and 500 grammes carbohydrate, which it was claimed would make reasonable allowance for unavoidable waste in preparation and loss in digestion.⁴ For translating the needs of women and children into those of an equivalent male adult, Rowntree adopted the well-known scale of Cathcart and Murray.⁵

A great advance has been made in the study of nutrition during the last thirty or forty years by the discovery of the importance of vitamins, and Rowntree took advantage of the knowledge gained since his earlier inquiry. There are different kinds of vitamins, some more important than others. Certain diseases are the direct result of vitamin deficiency, and one kind does not serve the same purpose as another. Unfortunately, not a great deal is known as to the exact amount of each which a normal person needs, but it is generally believed that a well-

balanced diet, one containing the requisite amounts and proportions of protein, fats, and carbohydrates, is not likely to be deficient in salts and vitamins.⁶

Rowntree came to the conclusion that an expenditure of 20s. 6d. a week was the least which would suffice to provide a family of two parents and three children with essential food. That this was not extravagant he was convinced by a detailed study of the family budgets of 28 families in different income groups. His analysis of the food value and the vitamin content of their diets was made with extreme care. In this type of study the quality of the research is important: an uncritical averaging of the results of a large number of budgets is of little value. The diet selected for each day of the week, on which Rowntree based his cost estimate, was put forward not as one which he considered entirely satisfactory for unskilled workers. It represented rather a standard below which, in his view, no class of worker should be forced to live. The full list of items included in the menu and their cost at 1936 prices will be found in the book which contains detailed particulars of his "Human Needs" standard.⁷

The allowance for rent and rates made by Rowntree in 1918 was 6s. a week for a family of five. The corresponding figure taken in 1936 was 9s. 6d., in step approximately with the percentage increase recorded in the *Ministry of Labour Gazette* for the country as a whole between these dates.⁸

For his estimate of minimum expenditure on a variety of garments Rowntree relied on the first-hand experience of only a very small sample of carefully selected men and women. The dozen closest⁹ replies for men were said to have varied between 2s. 6d. and 3s. 6d. a week, and for women between 1s. 6½d. and 2s. 4½d. He also obtained estimates of the minimum expenditure on children's clothing, which depended on the age of the child. This was the basis of his estimate of 3s. a week for a man, 1s. 9d. for a woman, and 1s. 1d. as an all-round figure for each child irrespective of age.¹⁰

Little difference was found, on the whole, in the average amount spent on heating, cooking, and lighting whether coal, gas, or electricity was used. The estimate adopted, 4s. 4d. a

week, averaged over the whole year, only differs by $\frac{1}{2}$ d. from the middle one of 11 sample returns recorded in the book.¹¹

The remaining essential items of the budget may be considered under two heads: *household sundries*, including washing and cleaning materials, renewals of crockery, pots and pans, etc., and *personal sundries*. The estimate for household sundries was left unchanged at 1s. 8d. as in 1918, though the earlier figure had included lighting.¹² Personal sundries were estimated at 9s. a week. To illustrate what the 9s. might be expected to cover, the following items were given as an example of possible weekly expenditure: national insurance 1s. 7d., sick and burial clubs and trade union subscription 1s. 6d., travel to work 1s., newspaper 7d., stamps, writing paper, etc. 6d., wireless 6d., all else such as beer, tobacco, presents, holidays, books, travelling, household replacements, etc., 3s. 4d.¹³ Meagre though the combined total for household and personal sundries looks, when thus analysed, it represents a remarkable scaling up of the 1899 allowance of only 10d. under this head.

The weekly estimates for each group can now be assembled together:

	s.	d.		s.	d.
Food . . .	20	6	Fuel and Light . . .	4	4
Rent and Rates . . .	9	6	Household Sundries	1	8
Clothing . . .	8	0	Personal Sundries . . .	9	0
<i>Total 53s.</i>					

This, then, was Rowntree's new Poverty Line, with suitable variations according to the size and composition of the family. He repeatedly stresses that his estimates throughout "err on the side of stringency rather than of extravagance; . . . Indeed, as I have pursued my investigation," he says, "I have been increasingly impressed by the fact that to keep a family of five in health on 53s. a week, even when the income is guaranteed for 52 weeks in the year, needs constant watchfulness and a high degree of skill on the part of the housewife. Moreover, practically the whole income is absorbed in providing the absolute necessities of physical health".¹⁴

Result of New Survey—In this later study Rowntree con-

fined himself to the problem of determining the proportion of the population whose incomes were insufficient to meet this minimum essential expenditure. He confessed that he had come to the conclusion that it was impossible to estimate with any reliability the number of families who fell below the poverty line as a result of unwise spending on non-essentials.¹⁵

The new survey covered in all 16,362 families, comprising 55,206 persons, as compared with 11,560 families, comprising 46,750 persons, in the earlier survey. In each case this represented just over 60 per cent of the estimated population of York.¹⁶ The size of family, it will be noted, had fallen from 4.0 to 3.4 persons per family. The "working-class" proportion of the total population was again estimated at about 70 per cent, but it will be recalled that the definition of "working-class" was not the same.¹⁷

Having defined his poverty line and decided what should be included under the head of available family income to meet this standard of minimum expenditure, Rowntree proceeded to classify his scheduled families on an income basis, exactly as he had done in his earlier enquiry, one line of division being as before the poverty line. He found now that 17.8 per cent of the total population of the city of York, or 31.1 per cent of the working-class population, fell below the poverty line.¹⁸ This, at first sight, looks like a serious increase in poverty as compared with the conditions revealed by his earlier enquiry, when the corresponding percentages were 9.9 and 15.5 per cent. But the reader must beware of jumping to any such hasty conclusion. It must not be forgotten that Rowntree introduced certain changes in his definitions of the "poverty line", the "available family income", and the "working-class population". For example, there has been an obvious tendency to raise the poverty line and this would have the effect of making the real increase in poverty, *as previously defined*, less than the figures suggest. As to available income, some part of the earnings of members of the family other than the chief wage-earner appear to have been omitted from the calculation in the second enquiry, but certain other sources of income which before were omitted appear now to have been included.

On balance, some families would thereby probably be raised above the poverty line, making the real difference greater than that indicated by the figures quoted. These two changes in definition would thus in some degree cancel each other out. The third change involves a difference in kind, not merely in amount, so that it might work either way, but it would only affect the estimates of the "working-class" population in poverty.

Rowntree himself admits the scaling-up of his poverty line standard. Referring to his earlier enquiry, he says: "the poverty line was a very low one—equal to 30s. 7d. at 1936 prices for a family of five. It was avowedly a mere subsistence income; not a farthing was allowed in the course of the whole year for anything beyond mere physical needs. It has, therefore, no relation to the poverty line adopted in this investigation, namely, 43s. 6d. after paying rent, for a family of five".¹⁹ In short, it is desirable to distinguish between Rowntree's two standards, by calling the 1899 standard the *Poverty Line* standard and the 1936 standard the *Human Needs* standard.

He goes on to make an estimate of the proportion in 1936 in primary poverty as defined in 1899. The allowance for a family of husband, wife, and three children in 1899, exclusive of rent, was 17s. 8d. a week, which at 1936 prices as stated above was equivalent to 30s. 7d. Taking this as the poverty line income, instead of 43s. 6d., the number of persons in primary poverty in 1936 was 3,767 or 6.8 per cent of the working-class population. This calculation, however, still fails to take into account the change in definition of "available income" and "working-class". We can escape the latter difficulty by relating the number in poverty to the total population instead of the working-class population. The old proportion was 9.9 per cent, the new is 4.2 per cent on this basis. This is a satisfactory reversal of the conclusion drawn by overlooking changes in definition. Moreover, this improvement took place in spite of a considerable difference in economic conditions. In 1936 10 per cent of the male heads of households were unemployed, while in 1899 very little unemployment was recorded.²⁰

Our general conclusion therefore is that, just as Rowntree's figures for York were not strictly comparable with Booth's figures for London, so Rowntree's figures in 1936 are not strictly comparable with his earlier figures for 1899. But, when we make such adjustments as we can to achieve greater comparability, this does not vitiate the impression that on the whole there was probably less poverty in York in 1899 than there had been in London in 1887, and decidedly less in York in 1936 than in 1899. While it is always well to strive for results which can be accurately measured and justifiably compared, the social reformer need not be hindered in his work for improvement because he does not know just how badly one town or period compares with another. Statistical procedure in survey work is based for the most part on relatives rather than on absolutes, and it is well worth while if one place or one period can be shown to set a higher standard as an ideal to be reached by another, even though the degree of difference be not exactly measurable.

An Improved Technique—Rowntree's chief claim to originality in the technique of social surveying lay in his discovery of an objective method of measuring what he called "primary poverty". In fact, as already stated, he abandoned the attempt to measure "secondary poverty" in his second enquiry, giving as his reasons that the methods he had adopted in 1899 appeared to him "too rough to give reliable results"; also, ideas had profoundly changed as to what constitutes "obvious want and squalor", which was the criterion originally adopted in judging by observation whether or not a given family was in poverty when the home was visited, and this change in standard would clearly render any unadjusted comparison of results at the two dates valueless.²¹

The Second York Survey bears evident traces of a more mature experience on the part of the author in the handling of his material. He did not hesitate to discard methods or ideas which on further reflection did not appear to be reliable. He improved too upon his definitions and classifications. As an instance of the latter, consider his analysis of the causes of poverty in the 1899 survey.²² Clearly there must be over-

lapping between the class "low wages" and the class "large family", considered separately as chief or immediate causes of poverty. Wages which would be adequate for a small family might be low for a large family; and, in any case, it is actual earnings rather than wage rates which determine a family's position relative to the poverty line. The classification adopted in the second survey, shown in the table below, is an improvement. The least satisfactory heading is "Inadequate Earnings of casual workers and persons working on their own account". Emphasis in the case of the casual worker should be on lack of sufficient employment rather than on inadequate earnings. When the two factors unemployment and inadequate employment are combined, they account in fact between them for 38.1 per cent of the poverty recorded. Add inadequate earnings of persons engaged in regular work and the proportion exceeds 70 per cent; whereas natural causes, such as old age and death or illness of the chief earner, accounted for only 26.6 per cent.

CHIEF CAUSES OF POVERTY, 1936*

<i>Cause</i>	<i>Percentage Affected of those in Poverty</i>
Inadequate Earnings of Workers in Regular Employment	32.8
Unemployment of Chief Earner	28.6
Old Age	14.7
Death or Illness of Chief Earner	11.9
Inadequate Earnings of those in Casual Employment or Working on Own Account	9.5
Miscellaneous	2.5

* *Poverty and Progress*, p. 39.

Outline of Second York Survey—The outline that has been given of Rowntree's Survey of York does it nothing like full justice. As in the account of the Booth Survey of London, attention has been chiefly focused on the measurement of poverty, that being the outstanding contribution to new technique in both cases.

The published account of the Second York Survey falls into three parts. Part One is concerned with the economic study of the population; it gives illuminating analyses of families classified on the basis of income available after paying the weekly rent. The last chapter contains a brief account of miscellaneous topics: thrift, co-operation, trade unions, friendly societies, life insurance, social services, and poor relief.

More than one-half of Part Two is devoted to Housing; but there are shorter chapters also on Health and Education, and this section ends with an examination of the city accounts.

Part Three is a study of Leisure Time Activities (passive as well as active, indoors and out-of-doors) and Religion.

The Housing Position—The home is so much an expression of the character of a family that we must not omit a short description of the housing position. In his first survey of York Rowntree divided working-class families into three categories:²³

	<i>Per cent</i>
A: Well-to-do artisan families living in comfortable houses	12·7
B: Families in receipt of moderate but regular wages	61·8
C: Families living in the poorest districts, many being typical slums	25·5

In 1938²⁴ a new classification—of houses, not families—was adopted, and again the enquiry was restricted to the working-classes, but rather differently defined, as already explained. The result was as follows:

	<i>Per cent</i>
1. Post-war semi-detached houses, with a new standard of comfort and amenity	4·4
2. Post-war Council houses, let at less than the full economic rent, and a few houses similar in type built by private enterprise	21·6
3. Houses placed in category A in the earlier inquiry	8·1
4. " " " " B " " " "	54·6
5. Houses of the poorest quality, many condemned as unfit for habitation	11·3
	11·0 73·7 15·3

Evidences of Improvement—This later classification, though descriptive like Booth's economic classification of the population adopted for the purpose of defining poverty, is less subject to variation from one observer to another; we are dealing here with "bricks and mortar", material more concrete than "poverty". Hence Rowntree has no hesitation in deciding, and no doubt with justice, that the houses in York which he has placed in Class 1, on his new classification, are "much superior in character to any occupied by working people in 1900";²⁵ and "even if the Council houses", which he places in Class 2, "both from the standpoint of lay-out and from that of the elevation of houses are not in the front rank, they are in both respects immensely in advance of anything which preceded them".²⁶ It should be added that three out of every four of the families occupying Class 1 houses had either bought or were in process of buying them.²⁷

If Rowntree's judgment be accepted, it follows that at least one-quarter of the houses inhabited by the working-classes in the city of York just prior to the outbreak of the Second World War were a great improvement on the standard of accommodation enjoyed a generation ago. The dwellings then occupied were gradually being demolished and others were taking their place. Some of the latter were previously inhabited by people of a different social class, so that we find in 1938 rather different proportions within the three original categories A, B, and C: a rise in the proportion in B (61·8 becoming 73·7), and a considerable fall in C (25·5 becoming 15·3). It is to be noted that the figures relate to *families* at the earlier date and to *houses* at the later date. We have taken Classes 3, 4, 5 to correspond to Classes A, B, C respectively, assuming that the change in proportions in these three classes suffices to show roughly the trend of events. The total of families in 1899 to which the above figures related was 11,560, and the total of houses covered by the corresponding figures forty years later (*i.e.* in Classes 3, 4, 5) was 11,285. So rapid was progress just about the time when war began that, by the end of 1939, only one small area comprising 423 of the 1,723 houses placed in the lowest category, and

a few scattered houses, still remained to be demolished or reconditioned.²⁸

Rowntree offers more evidence of progress in his account of Housing than is given here, for he examines the position in regard to back-to-back houses, houses sharing water-taps and closets in a common yard sometimes unpaved, houses without baths or gardens, and other matters. One particular aspect of the subject deserves special consideration, namely, overcrowding, and it may be well at this point to examine different meanings given to the term.

Different Aspects of Overcrowding—In the first place, there is "overcrowding" if there are too many people inhabiting the space available in any given town or country. Thus, before the outbreak of the last war, the density of population, expressed as the number of people per square kilometre, in England and Wales was 267, in Japan it was 182, in Germany 140, in the United States it was only 16, in Canada and Australia 1. Since land is the source of all wealth, such unequal distribution as these figures indicate causes rivalry between nations. The tension can be eased if people are free to move from one area to live in another, and if food, raw materials, and manufactured articles can be traded freely, so that there is a fair chance for them to reach places where the need for them is most acute. But regulations which damped down immigration, and tariffs which hindered trading, were introduced or increased between the two wars and so prevented these safety valves from acting readily.

The words "available space" are to be noted in the above statement as to the possible overcrowding of population in relation to land. Much land in countries of large area may be unsuitable for habitation; also inland seas and water may occupy considerable space. The figures quoted (comparing England and Wales with other countries) do not make allowances for these considerations, or for the fact that the people are never evenly distributed over the area they occupy so as to make the mean density a true picture of actual conditions. At best, therefore, the measure is a very imperfect one and it may be most misleading.

In the second place, there is overcrowding if too many houses are built on the land available, so that they cluster too thickly together. One part of the country can be compared with another, and one period with another in the same area (if we can assume that, in both, houses do not differ greatly in size and character), by calculating the number of houses per acre in each.

Rowntree records that, up to 1920,

working-class houses in York, as in most English towns, were almost without exception laid out on the monotonous and wasteful "grid-iron pattern". . . . Behind the houses were little back-yards paved or asphalted, while behind these ran a narrow lane parallel with the road, and used for the removal of house refuse, for the conveyance of coal, and so forth. . . . The comment that the workers were "warehoused in brick boxes with slate lids" was scarcely an exaggeration. Compare the Council housing estates with these houses and any criticism of them appears to be ungracious! Instead of being forty or fifty to the acre, on no Council estate does the number of houses per acre exceed thirteen, on some it is as low as ten; the average is twelve. . . . Every house has a front and back garden usually of from 200 to 300 square yards.²⁹

In the third place, there may be overcrowding because too many people are packed into houses that are too few in number or too small in size. Under conditions like those operating at present it is important to consider the number of families to be housed in relation to the number of dwellings available. Care is clearly needed here in the definitions of a "family" and a "dwelling". Is a family to include only parents and children? What about grandparents, lodgers, and unrelated persons? A flat is a dwelling capable, if of adequate size, of housing a family. Is it to be reckoned as a dwelling unit if it is not self-contained? And how is "adequate size" to be determined?

Whatever decision is reached on such points, to compare one town with another (or to compare conditions in the same town at two different dates) would not be satisfactory unless

the "family" units and the "dwelling" units were of much the same size in both towns (or at both dates in the same town). But with proper attention to definition, and suitable allowance for any difference in size of family and dwelling, the ratio of number of families to number of dwellings provides a fair index of the housing position.

An Official Overcrowding Standard—A better method of measurement is to relate persons to rooms, taking care again in defining "persons" and "rooms". This method has already been discussed in the account given of the Booth and Bowley surveys,³⁰ but reference can be made here to an official attempt to reach greater precision along this line in the Housing Act of 1935. This Act contained provisions for the abatement and prevention of overcrowding and, as a first step in the campaign, every Housing Authority throughout England and Wales was required by the Ministry of Health to carry out a survey to ascertain the extent of overcrowding in their area and the places where it existed.³¹ With this object a standard was laid down by which overcrowding was to be measured.

According to this standard, in the first place, any dwelling was to be marked "overcrowded" if persons of opposite sex (unless under 10 years of age, or living together as man and wife) were obliged to share the same bedroom. This initial requirement was of little practical effect, because the sexes could always be separated for sleeping purposes in any house containing more than one room.

But the other requirements were important, and of exceptional interest in view of the fact that in them we have the first official attempt to devise an index of overcrowding which takes note of the size of rooms, on the following plan.

First, the occupants of the house were to be counted, ignoring infants under 1 year of age and reckoning any other child under 10 as equivalent to " $\frac{1}{2}$ person", and all occupants of 10 or over as full "persons".

Next, the floor area of each room was to be measured and the rooms counted, ignoring all rooms of less than 50 sq. ft. A house was then to be marked as overcrowded if it contained

more than the aggregate allowed number of persons in the available rooms, the allowance being:

$\frac{1}{2}$ person in a room between 50 and under 70 sq. ft.							
1	"	"	"	"	70	"	90
$1\frac{1}{2}$	persons	"	"	"	90	"	110
2	"	"	"	"	of 110 sq. ft. or over		
3	"	in 2 rooms		"	"	"	"
5	"	"	3	"	"	"	"
$7\frac{1}{2}$	"	"	4	"	"	"	"
10	"	"	5	"	"	"	"

and so on, 2 extra persons being allowed for each additional room beyond 5.

It should be noted that, according to this measurement, stress is laid on the number of overcrowded dwellings, not on the number of persons living in overcrowded conditions. The intensity of the evil is not therefore adequately assessed, although sufficient information is provided to remedy it, which is an essential consideration to those whose duty it is to administer the Act.

In the Ministry of Health report on the Overcrowding Survey it is admitted that the standard is not an ideal standard, but it is claimed as "the minimum which is in the view of Parliament tolerable, while at the same time capable of immediate or early enforcement". Unfortunately, the outbreak of war dashed the hope here expressed. York city, however, came very near to achieving the aim. Only 477 houses were found to be overcrowded at the date of the official survey, when 19,576 houses were investigated; and it appears that by the end of 1939 all but 22 of these few cases had been dealt with.³²

REFERENCES

¹ The full account of this later investigation was published in 1941 under the title, *Poverty and Progress: A Second Social Survey of York*.

² *Poverty and Progress*, p. 27.

³ See Chapter V, p. 56.

⁴ *Poverty and Progress*, p. 174.

⁵ *The Human Needs of Labour*, 1937, p. 64.

⁶ *Poverty and Progress*, pp. 177, 178, 180.

⁷ *The Human Needs of Labour*, 1937, pp. 79-83.

⁸ *Ibid.*, pp. 89-92.

⁹ The closest replies do not necessarily provide the best estimate; this procedure is analogous to the use of the mode as an average.

¹⁰ *The Human Needs of Labour*, pp. 94, 95. The figures deserve study in view of the comment on the method of assessment made on p. 58 of Chapter V.

¹¹ *Ibid.*, p. 155.

¹² *Ibid.*, pp. 97, 98.

¹³ *Poverty and Progress*, p. 28.

¹⁴ *Ibid.*, p. 29.

¹⁵ *Ibid.*, p. VI.

¹⁶ *Poverty*, p. 21; *Poverty and Progress*, pp. 3, 11.

¹⁷ See Chapter V, p. 55, footnote 3.

¹⁸ *Poverty and Progress*, p. 96.

¹⁹ *Ibid.*, p. 451.

²⁰ *Ibid.*, pp. 451, 453.

²¹ *Ibid.*, p. 461.

²² See Chapter V, p. 63.

²³ *Poverty and Progress*, p. 225.

²⁴ *Ibid.*, pp. 225, 226.

²⁵ *Ibid.*, p. 226.

²⁶ *Ibid.*, p. 234.

²⁷ *Ibid.*, p. 229.

²⁸ *Ibid.*, p. 252.

²⁹ *Ibid.*, p. 234.

³⁰ Chapter VI, pp. 74, 75; Chapter VIII, pp. 97-100.

³¹ The results will be found in the *Report on The Overcrowding Survey in England Wales*, 1936 (H.M.S.O.).

³² *Poverty and Progress*, p. 269.

CHAPTER X

MERSEYSIDE SURVEY

Depressed Areas—Shortly after the New London Survey began, a generous bequest to the Social Science Department of the University of Liverpool by the same Rockefeller Trust made possible a parallel survey of Merseyside. This part of the North-West of England, in common with other Lancashire regions, the North-East Coast, South Wales, and South-West Scotland—the so-called depressed areas—presented at that time a remarkable contrast to other parts of the country and especially to London, the South-East, and the Midlands, which maintained their *relative* prosperity even during the widespread economic blizzard of the early 'thirties. For instance, the depressed areas had 14·5 per cent of their insured population unemployed in 1929 when other areas had only 7·3 per cent unemployed. By 1933 the unemployed in the depressed areas had risen to 28·8 per cent; in other areas it was then 15·2 per cent.¹

The region defined as Merseyside for survey purposes took in four county boroughs and adjacent urban districts situated on both sides of the river; the county boroughs were Liverpool, Bootle, Birkenhead, and Wallasey. The survey began in 1929 and the full account of it was published in three volumes in 1934. The first volume opens with a history of the development of the area and the contribution of different nationalities to the population. The existing inhabitants are analysed by sex, age, and marital condition. Discussion centres chiefly on the problems of poverty and overcrowding and the evolution of municipal housing in Liverpool is traced. Light is thrown also on expenditure by a study of working-class budgets. The second volume contains a detailed examination of the industrial character of Merseyside. It includes special studies of the workers engaged in essential industries and of unemployment, occupational mobility and the surplus of labour.

In the third volume selected groups of the population pass under review: infants, school children, adolescents, pensioners, families without a male head. An examination is made of the use of leisure and of church attendance. Some account is given also of the administration of social services, meeting the needs of the general public and of various "problem families". Cumulative evidence is discovered of a marked differential class fertility.

Basic Method of Analysis—The same fundamental principle was followed throughout in the analysis of the material collected and it is to this that special attention should be directed. Certain basic facts were first obtained concerning a large random sample of working-class households. This general group of households then served as a control or standard with which any special group in the population could be compared in respect of various factors common to both. To get a strictly random sample the Voters' Register was used in each area. Every thirtieth house or building in which private families ordinarily slept was ticked, street by street throughout Merseyside, omitting only such buildings as hotels and institutions. All these dwellings, if inhabited by working-class families, were included in the survey. The occupation of the head of the household and, for non-wage-earners, the probable income were used to discriminate between working-class and non-working-class. The total number of families in the random sample investigated was 6,906 comprising a population of 28,845. For this household sample enquiry the investigators, as in the original Booth survey, were school attendance officers. They proved excellent for the purpose: they succeeded in getting the information wanted, though not always complete on such matters as income, from 93 per cent of the persons approached.

It is possible to illustrate quite simply the use made of this random sample of households in general, as a control group, by comparing with them all households found in the sample to fall below carefully defined standards of overcrowding and poverty.² For this purpose both the control group and the sub-standard groups of families were classified

according to their economic condition, as in the following table. This economic classification proved very useful also in other parts of the Survey.

ECONOMIC CLASSIFICATION OF WORKING-CLASS FAMILIES*
(MERSEYSIDE, 1929-30)

<i>Families Sampled</i>	<i>Percentage of Families in each Group with</i>		
	<i>No Earner or no Adult Male Earner</i>	<i>One Adult Male in Regu- lar work, with or without sub- sidiary earners</i>	<i>Chief Earner Casually Em- ployed or Unemployed</i>
Control Group	16.4	61.8	21.8
Substandard Group: Below Poverty Line	31.4	5.5	63.2
Overcrowded	10.3	54.9	34.8

* *The Social Survey of Merseyside*, Vol. 1, p. 164.

It is immediately apparent, from the first two lines of figures in this table, that families fell into poverty most fre-

INCIDENCE OF OVERCROWDING AND POVERTY

<i>Per cent of Families or Individuals</i>	<i>Random Sample of Families</i>	<i>Total Immigrant Families</i>	<i>Per cent of Total Adult</i>		
			<i>Lan- cashire</i>	<i>Cheshire</i>	<i>London</i>
Overcrowded		8.6	9.0	9.6	6.0
Below Poverty Line	10.8	13.2	12.5	5.6	9.0
	16.0				

* *The Social Survey of*

quently because the chief earner was out of work or failed to get regular work. Another but less frequent cause of poverty was the loss of the chief earner, generally through death, illness, or accident. On the other hand, when the head of the household was in regular work, poverty was seldom experienced.

Among more than half the overcrowded families, as shown in the third line of the table, the chief earner was in regular work and sometimes there were in addition subsidiary earners able to contribute to the support of the household. Thus, inability to pay a higher rent was not by any means always the principle factor responsible for overcrowding. It is likely that many families, adequately housed initially, became overcrowded as the number of children increased and grew up.

Retaining the same definitions of basic concepts like "poverty" and "overcrowding" throughout, two further examples can be given to show how one part of the survey was linked with another. Here overcrowding and poverty are related to (a) Immigration, and (b) Success in Gaining Scholarships.

(a) *Overcrowding and Poverty related to Immigration*—By immigration here is meant movement to reside in the survey area from any outer area. The migration may not have been recent: the only information available was place of birth, which was not Merseyside. The table shows that among immigrant families as a whole there was somewhat less overcrowding and less poverty than among working-class families

AMONG IMMIGRANTS TO MERSEYSIDE *

Immigrants from each Area

<i>Rest of England</i>	<i>Wales</i>	<i>Ireland</i>	<i>Scotland</i>	<i>Isle of Man</i>	<i>Foreign and Colonial</i>
5.1	7.0	12.0	11.3	7.6	3.8
8.1	10.2	16.7	10.4	9.8	12.9

in general. But, comparing immigrants among themselves—and here the comparison was of individuals, not of families—the Irish stand out as having a higher percentage of overcrowding and poverty than the immigrants from any other area, whether from other parts of England or from other countries.

(b) *Overcrowding related to Success in Gaining Scholarships*—The municipal wards in Liverpool were first arranged in order according to the number of pupils who gained scholarships to secondary schools per 1,000 of those attending the elementary schools located in each ward. The wards were then assembled together, in the same order, in groups of five and the mean percentage of families found living in overcrowded conditions was calculated for each group with the result shown in the table which follows. The striking inverse correlation revealed in this table between the two factors investigated suggests that there is a close connection between housing conditions and school performance. It does not follow that, if the overcrowding were remedied, there would be an immediate effect on the children, resulting in an improved scholarship record in the more overcrowded areas. The connection between the two factors may be indirect, through the parents. Parents of subnormal intelligence may be responsible, on the one hand by their inefficiency, for overcrowded

LIVERPOOL WARDS GROUPED IN ORDER
OF SCHOLARSHIP SUCCESSES.*

No. of Pupils who gained Scholarships per 1,000 attending school . . .	11·3	6·2	4·3	3·2	2·2	1·6	0·6	0·0
Percentage of Families Over- crowded . . .	4·5	6·4	7·5	9·9	11·2	13·2	19·6	27·8

* *The Social Survey of Merseyside*, Vol. 3, p. 169.

conditions, and on the other by heredity, for poor mentality in their children. This leads naturally to a consideration of different types of subnormality which was the subject of a special investigation in the Merseyside Survey. It is discussed in the next chapter.

Space cannot be spared and it would be tedious to discuss in detail other subjects dealt with in this survey, but it is fitting perhaps to mention here that the Social Science Department of the University of Liverpool, in one notable respect, set a commendable example by maintaining a research section to continue survey work and keep up to date some of the more valuable results of the initial survey. A new Merseyside series of handbooks³ has been issued dealing, among other matters, with such topical subjects as trade and employment, co-ordination of transport services, town and country planning, population problems of new estates, the distribution of population and the location of industry, and old people's welfare.

REFERENCES

¹ *International Labour Review*, Vol. XXX, 1934, *The Problem of the Distressed Areas in Great Britain*, by E. D. McCallum.

² For the definitions, which did not greatly differ from those adopted by Professor Bowley in the New London Survey, see *The Social Survey of Merseyside*, Vol. I, pp. 128-130, 156-160. Full particulars of the household sample, with a copy of the questions asked, will be found in the same volume, pp. 308-320.

³Published by the Liverpool University Press.

CHAPTER XI

SURVEY OF THE SUBNORMAL

Design of the Survey—In view of the growing recognition of the importance of the population problem, in both its qualitative and quantitative aspects, special stress was laid throughout the Merseyside Survey on size of family and social class in different groups within the community. The criterion for class was the occupation of the head of the household. Each occupation was graded on a system similar to that adopted by the Registrar-General in his analysis of the fertility of different classes of the population at the 1911 Census.¹ It will suffice for our purpose to note that, broadly, manual and non-manual occupations were distinguished, and manual occupations were subdivided into three classes: skilled, semi-skilled, unskilled.

Following the fundamental plan already explained in Chapter X, the mean size of family in the large random sample of working-class households was taken as a norm or standard suitable for the assessment, by comparison, of size of family in other special groups. It was possible also to determine the proportion of male heads of families falling into each occupational grade, within the same control group of general working-class households, to serve as a standard for the assessment of social class in other groups.

Against this normal background a study was made of a variety of subnormal groups² in the population: the deaf, the blind, the mentally deficient; the chronically sick, the epileptic, and the physically deformed or defective; persons persistently addicted to crime or immorality, or continuously in receipt of public assistance for long periods by reason of some defect in character or temperament. As this enquiry was peculiar to Merseyside, in scale and method, something will be said about one or two selected types as an illustration of method.

Extreme care was taken in the delineation of the types chosen for investigation, medical specialists being consulted at the beginning of the enquiry in framing such definitions as came within their province. They also gave advice when doubt arose as to border-line cases. The data collected were such as would ordinarily be found in the case papers of the Authority or Society interested in their welfare. The particulars sought concerning each "primary" case were recorded on a card, which is reproduced with the instructions relating to it at the end of this chapter.

It will be observed that a completed card gave the date when the case first came to the notice of the agency concerned, and particulars as to sex, age, occupation, class of home, and the nature of the case (*e.g.* congenitally blind or mentally deficient). Then follow double-barrelled questions, so framed as to apply to a child or adult, single or married. The size of family, it should be noted, could be related to the age of the mother. On the back of the card space was provided for recording any known defect or disability among relatives and the degree of the relationship. These relatives are referred to as secondaries, because information about them came indirectly, although some of them came also to light as primaries. When this happened the identity of primary and secondary could be established by code numbers on the cards.

It was hoped that the analysis of all this material might reveal something about the connection, if any, between different defects and disabilities, and the nature of their association with sex, age, social class, and home conditions. Was there any concentration of a particular defect in certain parts of Merseyside? Do defective stocks differ from the general working-class population in the kind and amount of the contribution they make to the next generation? Is the so-called "Social Problem Group"³ a class radically distinct from the rest of the population, or is the term one which conveniently, but perhaps rather confusingly, covers a heterogeneous mass of persons suffering from defects and disabilities which have no more than a superficial relationship to one another? These are among the important questions to which

tentative answers were sought. How far any fresh light was thrown on the subjects investigated must be left for the reader to decide when he has read the concluding chapters of the third survey volume.

Although care was taken, as stated, to consult medical experts on certain questions of definition and interpretation, the particular aspects of the subnormal types selected for study were not medical but sociological in character. Interest is focused here on two aspects, social class and size of family, because the analysis appears to show that subnormality, no matter what type one takes, is associated predominantly with the lowest occupational grade and it is found in families which are larger than the average. If that be so, we have a combination of factors making for increasing social inefficiency, unless there are other counter-balancing factors—such as greater mortality in these same families—operating to maintain stability of numbers. Extracts from the relevant tables are shown on the next page. We proceed now to give examples of the sort of material used and the results obtained.

*The Deaf*¹—The sources of information were two: (a) the Liverpool Education Authority gave particulars of children up to the age of 16 from all parts of Merseyside attending a special school for the deaf; (b) the Liverpool Deaf and Dumb Institute gave access to their register of all known adult deaf on Merseyside.

All cases were subdivided into two classes:

Congenital, included all recorded as born deaf, or where deafness was stated to be probably congenital, or where onset was presumably under one year of age and without adequate cause (e.g. measles, meningitis, tonsillitis were judged adequate but *not* a fall or a shock).

Acquired, included all cases where onset was recorded as gradual, or at a definite age, or associated with an alleged external cause (which must have been an adequate cause if the child was under one), or where there seemed to be no adequate cause and some doubt as to whether onset was before one year of age.

OCCUPATIONAL GRADING OF SUBNORMAL GROUPS

<i>Group</i>	<i>Size of Sample</i>	<i>Percentage Graded as Unskilled Labourers</i>
Heads of Normal Working-Class Families	5,351	39
Fathers of Deaf Children .	212	43
Fathers of Blind Children .	72	53
Fathers of M.D. Children attending Special Schools .	841	63
under Supervision . . .	784	49
Occupied Deaf Men	308	35
Formerly Occupied Blind Men	232	47
Formerly Occupied Subnormal Unemployed	754	71

SIZE OF FAMILY IN SUBNORMAL GROUPS

<i>Families containing</i>	<i>Size of Sample</i>	<i>Mean No. of Children per Family</i>	
		<i>Alive</i>	<i>Dead</i>
Normal Children .	4,379	2.97*	0.95
A Deaf Child .	219	4.27	
A Blind Child .	94	4.42	
An M.D. Child .	1,115	4.69	2.47
Two M.D. Children	217	5.4	3.5

* A fairer comparison is obtained by taking only normal families containing at least one child, since families containing a deaf, blind, or M.D. child all contain at least one child. In that case the figure 2.97 is raised to 3.39. Similarly, families containing two M.D. children in the last row of the table should be compared with normal families containing at least two children. In that case the figure 2.97 is raised to 3.98.

There were altogether 922 deaf cases, a slight excess of congenital over acquired and of males over females. A test of

the reliability of the sample was possible by comparing the age distribution with that resulting from an enquiry conducted by the National Institute for the Deaf three years earlier throughout England and Wales, as follows:

PERCENTAGE DISTRIBUTION OF DEAF BY AGE

<i>Area</i>	<i>Age</i>					<i>All Ages</i>
	16-29	30-39	40-49	50-59	60+	
England and Wales	37	23	18	13	9	100
Merseyside . . .	35	23	20	13	9	100

Social Class and Employability—The class of families in which deaf children were discovered was rather below the average of the general working-class population, 43 per cent of the fathers of the deaf being unskilled labourers as compared with 39 per cent of heads of normal families. A fairly high proportion of occupied deaf men were engaged in skilled work, but it must be added that a high proportion did not succeed in getting work of any kind. Moreover, the deaf retired early from the scramble for work.

Marriage of the Deaf—There is less marriage among the deaf than in the normal population, but a striking discovery was that, on Merseyside, in about four out of every five marriages contracted by deaf persons both partners to the marriage were deaf. This was explained by the natural bond of sympathy which exists between deaf people. They are usually very sensitive about their condition and they understand one another better than they are understood by normal people. Consequently, when they meet, they are drawn to each other, and frequent occasions for meeting were provided by the Special School and the Institute for the Deaf in Liverpool.

Size of Family and Transmission of Deafness—Is the marriage of a deaf person to be approved or deplored? What about the offspring of such marriages? As a result of 192 deaf

marriages, *i.e.* marriages in which at least one partner was deaf, only 10 children were known to have been born deaf, less than 3 per cent of all known living children. The mean number of living children per deaf marriage was 1.90 as compared with 2.97 in the normal working-class household.

It would therefore appear, in so far as we can judge, from this small sample, that the number of children born to deaf parents is not great, and that the risk of them being born deaf is very slight. If only one partner to the marriage is deaf, and the deafness was not acquired very early in life, the child of such a marriage should suffer no special hardship, especially if the father is in regular work. In particular, two deaf persons without children might add much to each other's happiness in life by sharing their common burden. But, if even one partner is congenitally deaf and therefore in all probability dumb also, any child in such a family is bound to be handicapped. Moreover, even if no disability is evident in the immediate offspring, some of the pedigrees collected showed that it might come to light in a later generation.

Something has been said of size of family in deaf marriages. What of marriages in which the parents appear to be normal, but at least one child to the marriage is deaf? The mean number of living children in 219 families containing at least one deaf child between the ages of 5 and 21 was 4.27 per family, and there was no significant difference in size according to type of deafness, congenital or acquired, in the child. This may be compared with the mean number of living children in a large random sample of Liverpool working-class families, each containing at least one living child, which was found to be 3.39.

A parallel investigation was made of the blind, adopting very similar definitions for congenital and acquired cases. We give the results only, for occupational class and size of family, in the table on p. 127, and pass on to a different type of subnormality.

*Mental Defect*⁵—This may be described as a deficiency of intelligence, in the great majority of cases present at birth

though not always immediately discovered. It is convenient to distinguish three grades: idiocy, imbecility, and feeble-mindedness. The more serious grades, idiocy and imbecility, are liable to appear, as if by chance, in any class of the community. Feeble-mindedness, on the other hand, occurs in patches in the population, associated conspicuously, according to Dr. E. O. Lewis, with a particular class which he called the "Social Problem Group",⁶ alleged to be the source also of other familiar problem types such as persistent criminals, paupers, and unemployables.

The Education Departments in Liverpool, Bootle, and neighbouring urban districts gave access to their records of all children between the ages of 5 and 16 attending special schools or classes for the mentally defective. The West Lancashire Association for Mental Welfare supplied particulars of all persons who were or had been under their supervision. It was found that only 6 per cent of this latter group were over 30 years of age. They will be referred to as M.W. and the special schools cases as S.S.

A child is not placed under supervision unless it is likely to prove so defective as to be ineducable even in a special school. It follows that the M.W. children were usually suffering from a more serious grade of defect than the S.S. children.

The S.S. group contained 841 cases and the M.W. group 784. There was a slight excess of males in both groups. Also, the higher grade defectives (the feeble-minded) came from a lower social class than the lower grade, the percentage of fathers who were unskilled labourers being 63 in the S.S. group, 49 in the M.W. group, and 39 in normal families.

Size of Family—The mean number of children recorded as born alive in 1,115 families containing at least one M.D. child was 4.69 as compared with 3.39 in normal working-class families with at least one child alive. Moreover, about one-half the total of families containing one or more defectives were families with five or more living children per family.

Not only are families containing one or more defectives larger than normal families, but the difference between them would in all probability be even more marked if all dead children could be brought into the picture, for in the 1,115 families examined in the Merseyside Survey which contained defectives the mean number of children recorded as dead per family was 2.47, a very high mortality incidence.

Transmission of Defect—Among 1,880 defectives, concerning whom records were available, less than 1 per cent had one or both parents certified as defective, but 15 per cent had a parent judged to be of subnormal intelligence by head teachers of special schools or by experienced mental welfare visitors. But, if the parents of defective children are seldom themselves defective to a certifiable degree, we cannot reverse the statement and say that the children of defective parents are seldom defective. In 24 marriages where both parents were judged to be mentally subnormal, nearly 60 per cent of the children were subnormal; in 176 marriages where one parent was subnormal, over 40 per cent of the children were subnormal; while in 1,399 marriages where both parents appeared to be normal,⁷ only 30 per cent of the children were subnormal.

When there are two defective children in a family, either ineducable or attending a special school, there seems little doubt that there must be an hereditary taint in one or both parents, normal though both may appear to be. No fewer than 217 such families were found on Merseyside. The mean number of living children per family in this group was 5.4. This may be compared with 4.0 per family in a large random sample of working-class families, each containing at least two normal children. The number of dead children recorded in these families was also abnormally high, amounting to an average of between 3 and 4 per family. In 58 of these 217 families, at least one of the parents was recorded as subnormal, and nearly one out of every three of the 58 families had 3 to 6 defective children apiece.

*Defect in Near Relatives*⁸—By near relatives is meant not only parents and children, brothers and sisters, but also

uncles, aunts, nephews, nieces, cousins, and, maybe, grandparents. Beyond this range information was seldom obtainable.

Consider first the defect of deafness. Since deafness can be acquired, the measure of the extent to which acquired deaf persons have relatives with deafness acquired may be taken as a guide to the extent to which deafness may occur by chance. At least it may reasonably be argued that—if our knowledge of deaf relatives was complete, which of course may not be true—the chance incidence of deafness is not likely to be greater than this, though it might well be less because, on account of some hereditary weakness, the near relatives of deaf persons may be more prone to become deaf than the near relatives of hearing persons, although the immediate onset of the deafness might seem to be accidental. The same line of reasoning applies to the blind, but clearly not to the mentally deficient since mental defect in the great majority of cases is present at birth.

Among 475 deaf persons who had themselves become deaf, no more than 12, or 2·5 per cent of the total, were recorded as having near relatives who had also become deaf. Again, among 845 persons who had become blind, only 31, or 3·7 per cent of the total, were recorded as having near relatives who had also become blind. The difference between these two proportions is not statistically significant. Thus we might expect not more than about 4 or 5 per cent of the congenitally deaf, blind, or mentally defective to have near relatives also deaf, blind, or mentally defective, respectively, *as chance happenings*. Actually, out of 471 congenitally deaf persons, 150 or 32 per cent were recorded with congenitally deaf relatives. Out of 472 congenitally blind persons, 124 or 26 per cent were recorded with congenitally blind relatives. Out of 841 children attending special schools for the mentally deficient, 207 or 25 per cent had relatives either educated in special schools or under statutory supervision or reported to be insane or epileptic. Also, of 784 persons under statutory supervision 176 or 23 per cent had relatives mentally defective, insane, or epileptic.

The conditions just quoted clearly could not be chance

happenings, since the proportions of affected relatives of the congenitally afflicted were in each case so much higher than it was estimated they might be by chance. The connecting link was blood relationship, and the simplest explanation for the high incidence of congenital deafness, blindness, and mental defect among near relatives of those suffering from the same disability was that an hereditary taint was transmitted from one generation to another.

The figures already examined were not a full measure of the evil, for the question considered was the proportion of primary defectives with near relatives similarly afflicted. But to any primary there may be more than one secondary, the same person may have more than one relative affected. It will suffice to illustrate this possibility by considering the mentally deficient class alone. When both the special schools and mental welfare groups were combined (making a total of over 1,600 defectives) and the number of their defective relatives counted, it was found that, to every 100 primaries investigated, there were 37 near relatives recorded as mentally defective, insane, or epileptic; and to this number were added 23 more, making altogether 60 affected relatives to every 100 primary cases investigated, when relations reported by skilled visitors as at least mentally retarded or unstable if not certifiably defective were included.

*Immorality*⁹—As examples of a different type of subnormality investigated, brief mention can be made of certain cases supplied by the Liverpool Public Assistance Authority. Under the heading of immorality, particulars were given of 200 women who had entered a Public Assistance Institution for the birth of a second illegitimate child. The age of the mother was given in all but five cases; 90 per cent were found to be under 35 years of age, and one out of every three of these was recorded as having had 3, 4, or 5 illegitimate babies. Forty-three per cent were under 25 years of age, and one out of every five of these had had 3 or 4 illegitimate babies.

Out of the 481 illegitimate babies born to the 200 women included in the survey, 116 were known to have died. This gives the very high mortality rate of 241 per 1,000. When there

was a record of the father, the same man was alleged to be the father of two or more children born to the same woman in only 17 per cent out of a total of 142 cases. Among the 200 women investigated, 22 were reported to have no moral sense, and 52 to be suffering from some mental or physical defect.

*Chronic Unemployment*¹⁰—This subnormal group included any able-bodied man, between the ages of 22 and 50, who in 1929-30 had been continuously in receipt of public assistance for two years or longer on the ground of poverty due to unemployment. Men over 50 were ruled out because some might have failed to get work chiefly on account of the growing infirmities of advancing age. Also, any one suffering from unemployment on account of accident or sickness was excluded. The total number of cases in Liverpool answering to the above definition was 754. Out of these subnormally unemployed men 71 per cent belonged to the unskilled labouring class, as compared with 39 per cent of occupied males in the normal random household sample.

The size of family for this subnormal group is compared with that in the normal household sample (H.S.), in relation to the age of the wife, in the following table:

<i>Mean No. of Children per Family</i>	<i>Age of Wife</i>					
	<i>Under 30</i>		<i>30 and under 40</i>		<i>40 and under 50</i>	
	<i>Sub. Nm.</i>	<i>H.S.</i>	<i>Sub. Nm.</i>	<i>H.S.</i>	<i>Sub. Nm.</i>	<i>H.S.</i>
Alive .	2.25	1.49	3.80	2.60	4.55	3.53
Dead .	0.49	0.16	1.02	0.44	1.58	1.01
Size of Sample	210	947	347	1,573	108	1,362

Concluding Summary—To sum up, the general impression one gets from an examination of the tables relating to social class and fertility—and this holds good in general whether the

subnormal types investigated are below normal in hearing, sight, or intelligence, physical condition, health, delinquency, or employability—is that they are discovered most frequently in the unskilled labouring class and in families above the average size.¹¹

Since it may be taken for granted that only a low order of intelligence is required for unskilled labouring work, it would seem to follow that there is some degree of association, or correlation, between low intelligence in parents and subnormality in their offspring. Moreover, the high fertility in such families is not a hopeful sign for the future of our population.

These results, reached in the early nineteen-thirties, are entirely consistent with the trend of the conclusions recently made known by Sir Cyril Burt, as a result of his highly important researches concerning the effect of the differential birth-rate on inborn mental characteristics.¹²

So far as the evidence goes (he says), (*a*) it seems almost certain that there is in this country a negative correlation between innate intelligence and size of family, and that the size of the correlation . . . is large enough to demand urgent practical attention; (*b*) it seems highly probable that the average level of intelligence among the general population may be declining at a rate which might produce serious cumulative effects if at all sustained; (*c*) finally, it seems more probable than not that, with characteristics other than intelligence (*e.g.* temperamental or moral qualities such as relative freedom from neurotic or delinquent tendencies, and physical characteristics such as health and strength), the effects of the differential birth rate are smaller but, if anything, unfavourable rather than favourable.

He wisely goes on, however, to caution the reader against accepting the evidence as conclusive, because methods of measurement in psychology are subject to many disturbing factors and “there is as yet little direct confirmation irrefutably demonstrating an actual decline” in intelligence, and our knowledge of the inheritance of mental characteristics is too meagre for us to put complete trust in indirect deductions.

SUBNORMAL TYPES INVESTIGATION

Instructions for the Guidance of those Replying to the Questionnaire

1. Opposite *Information from* should come the name of the Association or Authority supplying the data.

2. *Case No.* refers to the number used by the Association or Authority, if any is used, to identify the case.

3. The *Date* given should be that when the case came, or first came, before the Society or Association for consideration; but if the individual concerned is in some institution, the date when he (or she) entered that institution should be given.

4. The *Sex* of the individual can be given simply as M. or F.

5. The *Age* should be the age last birthday at the time when the card is being filled up, if it is known; otherwise it should be estimated.

6. Should there be serious objection to giving the exact *Home Address*, the name of the street and town or urban district will suffice, but in that case the full name and address are to be sent in due course along with the letter and printed number which appear in the right-hand top corner of the card, to:

The Registration Department, Council of Voluntary Aid,
Brougham Terrace, West Derby Road, Liverpool.*

7. The *Occupation* should in all cases be stated as definitely as possible: *e.g.* not Engineer, but Fitter (Engineering); not Labourer, but Dock Labourer or Builder's Labourer. If known to be unemployed, give the last occupation and add U. in brackets.

8. *Class of Home*—It is not the economic position of the family that is here in question but the general appearance of the home. A very poor home may be very clean and tidy, and it is in that sense that it should be described as V.C. (very clean), C. (clean), D. (dirty), or V.D. (very dirty).

9. *Nature of Case*—The case can probably be classified under one of the heads indicated on the back of the card. More detail may be helpful when it can be given; *e.g.* if deaf, alleged cause of deafness, and whether the result of an accident, or illness, or

* By this device each family remained in the Survey Department impersonal, a mere number; but with the help of the data in the possession of the Registration Officer, who was able to locate each case but was given no other information about it, it was possible to throw light on the important question of the spread of different types of defect throughout the area of investigation.

present at birth; if physically deformed, nature of deformity, and whether congenital or otherwise.

10. The *Age of Mother or Wife* is not required with great precision, but it should be estimated as nearly as possible.

11. Only children of the same mother, whether by the husband or by some other man, are to be included in the *No. of Brothers and Sisters or of Children*. Also, the individual himself (or herself) should, of course, not be included in the number of brothers and sisters recorded. "Married" is to include "Widowed".

12. The back of the card is reserved for any known history of defect or abnormality in the near relatives of the individual constituting the case. For instance, if the husband or wife, father or mother, of that individual suffers from any defect or abnormality, the letters H. or W., F. or M. should be inserted in the appropriate column. In some cases, one relative may have two or more distinct defects, and the same symbol should then be repeated in different columns. For instance, there may be a son who is blind, one daughter deaf, and a younger daughter who is both epileptic and mentally deficient; in that case, the letter S. should be put in the first column, D.1 in the second, and D.2 in the third *and* the fifth columns. For any member of the family known to be of illegitimate birth, the symbol is to be ringed. A concise scheme of the suggested symbols is provided for ready reference in filling up the cards.

13. It is not possible to give an absolutely clear definition of what constitutes persistent addiction to immorality, crime, or drink. This must be left to the intelligent judgment of those who fill in the cards, but a single lapse should not in general be so counted. "When in doubt, leave out" is a fairly safe rule to follow.

14. *Chronically Destitute*—The whole family may be constantly coming upon the rates for relief. If that is known to be so, the fact should be recorded. The same may be found also to have been true of the grandparents, and, if so, they too should be entered.

15. *In any other way Abnormal, e.g. Tuberculous, Deformed*, is meant to include such cases as infants suffering from congenital deformities, rickets (under one year of age), bow-legs, knock-knees, congenital hearts, tuberculosis. But any case of malnutrition, infantile paralysis, or encephalitis should be excluded.

16. While it may not be easy to give complete information under some of the heads that have been enumerated, the value of the investigation will be very considerably enhanced if the questions are answered as fully and as accurately as possible.

*Front of Subnormal Types Card.**

UNIVERSITY OF LIVERPOOL.		SOCIAL SURVEY OF MERSEYSIDE.		No.
Information from		Case No.		
Date	Sex	Name		
Approx. Age	Home Address			
Occupation, if any		Class of Home		
Nature of Case				
{ If unmarried, Occupation of Father				
{ If a married or widowed woman, Occupation of Husband				
{ If unmarried, approx. Age of Mother				
{ If a married man, approx. Age of Wife				
{ If unmarried, Total No. of Brothers and Sisters: alive dead				
{ If married or widowed, Total No. of Children: alive dead				

Back of Card.

RELATIONSHIP TO THE CASE OF ANY NEAR RELATIVES
KNOWN TO BE

Born Blind or Partially Blind	Very Deaf	Epilep- tic	Mentally		Persistently Addicted to			Chron- ically Desti- tute		In any other way Abnormal, e.g.	
			Retarded	Deficient	Immoral- ity	Crime	Alcohol			Tuber- culous	De- formed

* For copy of card and accompanying instructions see *Survey of Merseyside*, Vol. III, pp. 346-349.

REFERENCES

¹ Census of England and Wales, 1911, xiii, Part II, LXXVI.

² The relevant chapters dealing with subnormal types, of which free use has been made in this brief account of the survey, are Chapters XII to XXI in Vol. 3 of *The Social Survey of Merseyside*.

³ See Reference 6 below.

⁴ *The Social Survey of Merseyside*, Vol. 3, pp. 350-374.

⁵ *Ibid.*, Vol. 3, pp. 394-419.

⁶ See the *Report of the Mental Deficiency Committee*, Part III, p. 80, A Joint Committee set up by the Board of Education and Board of Control to investigate the size of the problem of mental deficiency and what should be done about it. The Report was issued in four parts. Part IV (1927) describes the enquiry into the incidence of mental deficiency for which Dr. Lewis was responsible.

⁷ It will be understood that we were dealing here with defective stock from the Special Schools and the Mental Welfare Association. The last percentage would have been very different in a random sample of marriages contracted by normal parents.

⁸ *The Social Survey of Merseyside*, Vol. 3, pp. 463, 464.

⁹ *Ibid.*, Vol. 3, pp. 439-442.

¹⁰ *Ibid.*, Vol. 3, pp. 445-455.

¹¹ Additional evidence for this statement will be found in the relevant chapters of *The Social Survey of Merseyside*; the figures given in the table on p. 127 are only a few of those collected, sufficient to illustrate the general trend.

¹² *Intelligence and Fertility* (Eugenics Society, 1946). See also a preliminary report in the *Times* (17.xi.1948) on the survey of the intelligence of Scottish children and the relation of intelligence to size of family, by Professor Godfrey Thomson.

CHAPTER XII

STANDARD OF LIVING

Plan to Maintain Real Wages—Shortly after the outbreak of the 1914-18 War, when prices began to mount and there arose the threat of strikes for wage increases to correspond with the rise in the cost of living, the Government then in power determined upon the preparation of a statistical scale to measure periodically the change in certain retail prices. This would provide a standard by which to decide what the wage increase should be, if it was to keep step with rising prices and so maintain the standard of living—real wages—steady. Thus the well-known and only recently abandoned Cost of Living Index came into being.

A brief explanation of the method¹ that was adopted to compile the index is necessary to make clear why some twenty years later it was deemed essential to collect fresh particulars of working-class expenditure in order to reinforce the foundation on which the index rested. This collection of budgets is important because it forms the basis of the new Interim Index of Retail Prices, which takes the place of the old Cost of Living Index. But it is chiefly of interest to us because it supplies a detailed and accurate picture of the average standard of living of the working-classes at one of the most critical dates in the industrial and economic history of this country.

Cost of Living Index—The first point to be noted is that this index did not, and was not intended to, measure the cost of living: its purpose was to measure *changes in the cost of living*. Secondly, it was to measure changes in the *cost*, not in the *standard*, of living. Thirdly, since there are wide variations in the standard of living of different classes, and even of different families within the same class, the measurement was confined to *working-class households* and to changes in the *average level* of their cost of living.

The first step was therefore to establish the average level

of living in working-class households in July, 1914. That date was taken as a convenient starting point from which to measure the change in the level due (and due only) to rising prices. In other words, a certain standard of living was defined in July, 1914, and, once defined, it was not to be varied. Otherwise, the process of measurement would have been just as confusing as to try to measure the length of an object that was itself expanding or contracting under the influence of forces beyond the control of the measurer.

Definition of "Living"—The standard of living of a selected working-class household in any particular week can be best judged by observing how they spend their money in that week, because they will presumably choose to spend on what appeals to them most. We must leave out of this reckoning things which no money can buy. The Government went further: they decided to restrict "living" to the bare essentials of life, on the grounds that the poorer families have little, if anything, left after these essentials are bought, and that it would be impracticable to measure the changing costs of the thousand-and-one other things upon which individual families spend some of their earnings. Those who are "better off" are able to save part of their income. If they do, it should not be reckoned in with their "living" in that particular week, but as their—or someone else's—living in some future week. In other words, "living" is to be measured by *actual expenditure on the essentials of life* in a selected week, even if all the things bought are not consumed in that week; for such things will be balanced, on the average, by a few things consumed in the selected week but bought in a previous week.

The essentials of life were taken to include food, clothing, house-room, fuel, and light, and a few miscellaneous sundries needed for personal and household use and cleanliness. The compilation of the Cost of Living Index could thus be broken up into successive parts: the choice of things to be defined as "living"; the ascertainment of the cost of these things at July, 1914, the basic date of reference, and at any subsequent date; and the statistical process of combining the price changes under each main head—food, clothing, house-room, etc.—to

form a single composite index measuring the change in expenditure on living.

Weights for Different Items—As to the last stage, clearly it would not be right to give precisely the same weight, to attribute the same importance, to food and to clothing, to house-room and to fuel and light. It was decided, in combining the price changes under the five main heads which entered into the calculation, to give each head a weight according to the importance attached to it by housewives themselves. That is to say, weights were assigned to each group (and to items within groups) in proportion to the average expenditure of housewives on each in July, 1914. This expenditure was found to be roughly proportional to 15 for food, 4 for rent and rates, 3 for clothing, 2 for fuel and light, and 1 for personal and household sundries.

But each of these five groups is itself composed of two or more items. For instance, a very considerable variety of eatables and drinkables might be entered as food bought by different families. The official list was confined however, for practical convenience, to only 14 items of common foods which almost every householder buys each week. Because other items were omitted it did not of course follow that the change in food prices was necessarily less in magnitude than it would otherwise have been. Both the size and the direction of any net difference made by these omitted items would depend on their individual price movements in the interval between the two dates of measurement.

From this brief outline of the Cost of Living Index and the method of its compilation it will be seen that, in effect, it was an estimate of the change in the cost of buying an agreed "parcel of commodities", resulting from the changes in price of the several commodities comprised in the parcel, between two specified dates. In order to decide what weight to give to each commodity, in combining the individual price changes, an enquiry had to be made into working-class habits of expenditure in 1914. The normal method of procedure for such a purpose is to make a collection of weekly budgets, particulars of the total money spent and how it is spent by a large and

representative number of working-class families, and from the analysis of these budgets to find the average amount spent upon each commodity. Weights are then chosen roughly proportional to these averages. A small number of such budgets, less than 2,000 in all, had been collected by the Board of Trade in 1904, but they related only to urban families and to expenditure on food alone. Particulars as to rent and rates were obtained in the course of a special *Enquiry into the Cost of Living* in 1912. In the light of this and later information, the official weights adopted for the compilation of the Index in 1914 were confirmed by another official body appointed in 1918 to examine the subject again, the *Summer Cost of Living Committee*.

Looking back later at the evidence available concerning pre-1918 expenditure for the determination of the official weights, and bearing in mind the appeal frequently made to the Cost of Living Index in wage discussions ever since it first came into force, there was general agreement that the foundation on which the weighting rested was very slender and inadequate. Accordingly, when conditions were beginning to grow a little more settled after the first world war, the decision was taken to revise the weights by making a fresh collection of budgets. This was accomplished in 1937-38 but, before the results could be put to practical use, the next world war began. Now (1947) it has been decided to terminate the use of the old index and, pending further study of the problem, to issue instead each month an index of the changing level of retail prices, weighted on the pre-war pattern of consumption as disclosed by the 1937-38 enquiry.²

The Pre-War Budget Enquiry—The 1937-38 collection of budgets was the largest and most comprehensive ever made by a Government Department, or indeed by any non-official body, in Great Britain; and, as it provides an exceptionally good illustration of random sampling, it is worth while to describe in some detail the planning and execution of what is in effect a study of the pre-war worker's tastes, as judged by the way he spent his money.

The enquiry was directed from London by the Ministry of Labour. It covered both urban and rural households, but it

will suffice here to confine attention to the urban budgets, and to describe the procedure followed rather than the results obtained.³ The changes in adaptation of the method from urban to rural households are not of great moment.

Each household was to be asked to keep a full record of expenditure for four weeks at different seasons of the year, in October, 1937, and January, April, and July, 1938. A copy of the forms used is shown at the end of the chapter. In an introductory note to the first form the official authority for and the purpose of the enquiry are briefly explained. It is then pointed out that it would be impossible to collect full information of the kind desired from all the millions of families in the country. Consequently, some thousands had been chosen at random and their help solicited in supplying certain information and keeping the necessary records for a week. It was stressed that any information given would be treated as strictly confidential. No name and no address were to be written on the form and it was to be sent when completed direct to London for analysis of the figures by the Statistical Department of the Ministry of Labour.

Explanatory notes concerning the questions and record of expenditure followed, so making the filling up of the form as fool-proof for the householder as possible. A separate page was supplied for expenditure on food on each day of the week. Only the Sunday page is printed in the copy reproduced⁴ because the others were repetitions of this. Space for the recording of expenditure on items other than food was available on the next three pages. The rest of the form is self-explanatory.

Procedure to be followed—Notes for the guidance of the visitors responsible for getting the budgets were also provided. These notes explained rather more fully the purpose of the enquiry, so that the visitor might be able to answer questions about it if asked. They pointed out that twenty years had elapsed since the Cost of Living Index was first devised, and during that interval many important changes had taken place in the mode of living and distribution of expenditure in working-class households. Hence the need for getting up-to-date information on the new way of living and spending. It

was also hoped that the enquiry might bring to light fresh facts as to the kind of food eaten, which would be of value to the Ministry of Health in the study of the nutrition of the people.

The names and addresses of the persons who were to be invited to keep budgets were recorded on special forms supplied to visitors. On no account were other names to be substituted for these, if for any reason the visitor failed to make contact with the persons selected. The reason for such failure was to be stated on the record sheet and this was to be sent in as soon as possible to the local Employment Exchange.⁵ But it was permissible to accept a budget for a later week from the selected family in place of one for the specified week. If the family had moved to a near-by address, they were to be followed up and interviewed there if possible. It was important to keep to the same locality and, as nearly as possible, to the same week; but, apart from the allowed exceptions indicated, to visit persons other than those selected might seriously bias the results.

The housewife was to be interviewed if, as was most likely to be the case when the visit was paid in the daytime, the male head was not at home. If he was to be away from home for the whole week, no budget was required from that household. Households found to include lodgers, not related to the family but provided with meals by the family, were also to be excluded, as were lodgers themselves living with a family and paying an inclusive charge for rent and food. If the person approached expressed willingness to supply the information desired, a copy of the form CL. 1 was to be left at the house and a brief explanation given of it. In fact, many of the particulars on page 3 of the form, as to other members of the household and their occupations, would be already known to the housewife, and it would be a means of interesting her in the enquiry if the visitor helped her to fill these in on the spot. Once begun, the rest of the questionnaire would seem less formidable. All food bought during the week was to be recorded carefully, even if not paid for until the following week.

A second visit was to be paid to the household later in the week, in order to make sure that the record was being kept

and to clear up any difficulties in regard to it. The form was to be collected as soon as possible after the end of the week and carefully scrutinized, in case there were any obvious omissions or errors in it which could be immediately made good. An identification number was to be entered on each form from the record sheet of names and addresses, so as to make contact again possible with the person interviewed, should it prove necessary to clear up any points of doubt on the form. A note was also to be made on the form if any unusual circumstances affected the entries such as absence from home of any member of the family for part of the week or failure to get particulars of any earner's expenditure.

Assuming the housewife unable to give full particulars of the expenditure of some of the wage-earners, they were to be interviewed separately, if possible alone, and asked to fill in a special form.⁶ At the same time they were to be assured that the strictest secrecy would be observed as to this information. If desired, the completed form could be placed in an envelope provided for the purpose and posted direct to the visitor, or sealed and collected later. On this form was to be entered the reference number of Form CL. 1 and the number of the individual concerned, as shown in *Particulars of the Household* on Form CL. 1, so as to make it possible to link the two relevant forms together later.

Since people seldom buy articles of clothing each week, in order to supplement the particulars given of any such purchases made during the budget weeks, records were also kept by a number of persons for a continuous 13-week period.⁷ Copies of this form were to be sent weekly to those prepared to co-operate. All they had then to do was to fill them in and post them in franked envelopes to the Statistical Department of the Ministry of Labour.

Choice of Persons for Interview—We have still to explain the method of choosing the persons to be interviewed and suitable visitors to do the interviewing. For these purposes the Ministry of Labour had at their disposal the elaborate network of employment exchanges dotted about over the United Kingdom, and the great majority of wage-earners were subject

to the National Insurance Acts. In order to secure an effective number of budgets, in the region of 10,000, past experience suggested that it would be wise to make a random selection in the first place of 25,000 to 30,000 insured persons, making due allowance for refusals, persons falling outside the definition, empty houses, etc. To get a random and representative sample the desired number of persons was obtained by taking names out at regular intervals from the register of workers insured against unemployment. The great majority would thus be either manual workers, or non-manual workers earning not more than £250 a year. But a suitable proportion of workers having their own approved schemes of insurance were also included, on a random basis so far as possible: *e.g.* railway workers, and people engaged in public utility undertakings, or working in Government and Local Authority Departments.

The broad aim was to sample: (a) heads of households (or wives of such), so long as they did not include lodgers boarding with the family, and (b) single persons of either sex living alone, or with a family but boarding themselves. Furthermore, people of such long-standing unemployment that they had become applicants for unemployment assistance were to be excluded from the sample. Names were drawn in appropriate proportions from all parts of the country, urban and rural, and it was left to the visitors to include for actual investigation only households falling within the definition of "working-class" as formulated above. This was clearly explained to them in their instructions.

Selection of Visitors—The task of finding suitable visitors was entrusted to employment exchange managers, with the aid of local committees set up to assist them in making all necessary arrangements within their own areas. To these *ad hoc* bodies a useful nucleus of members was contributed by already existing Local Employment Committees. Their function was to stimulate local interest in the survey and to encourage co-operation generally. The types of visitor they tried to get were persons who had had some experience as trained social workers, and officials of trade unions, co-operative societies, women's guilds, and institutes.

A list of the names, addresses, and insurance file numbers of persons included in the sample and residing within the area of each exchange was sent to the manager, separate record sheets—one for each person in the sample—being provided for the visitors.⁸ These sheets distinguished between persons for whom a budget was to be obtained, if possible, and those from whom a budget was not obtained, either because they were ruled out by definition according to instructions received, or because they were unwilling to co-operate in the enquiry, or for some other reason.

Results of the Enquiry—In order to encourage co-operation, a letter from the responsible office in London, announcing the proposed visit and its purpose, was sent beforehand to each selected household in the name of the Director of Statistics.⁹ Persons who supplied budgets in the first week of the enquiry, October, 1937, were invited to keep further records of their expenditure in the three specified weeks of 1938. A payment of 2s. 6d. was offered for each completed budget, in recognition of the time and labour spent upon it; and to anyone completing four budgets an additional bonus of 2s. 6d. was offered, making a total payment of 12s. 6d. For this type of investigation it is a remarkable tribute to all who took part in it, and especially to those responsible for its planning and organization, that nearly 60 per cent of those approached who were within the scope of the enquiry supplied budgets for the first week, and the response was not far short of this in subsequent weeks. The number of households from which budgets came for four full weeks was over 10,000. In nearly 9,000 the head was engaged in an industrial, commercial, or clerical occupation, and these households are classed as industrial in character; in nearly 1,500 the head was engaged in an agricultural occupation.

The total average weekly expenditure, taken over the 8,905 industrial households sampled, which all supplied budgets at four different seasons in the year 1937-38, was 86s. 3d., distributed over the main groups of items as shown in the table.

Two figures in the table call for special comment. In the first place, the total weekly expenditure, bearing in mind that

DISTRIBUTION OF WORKING-CLASS EXPENDITURE IN THE.
UNITED KINGDOM*

Grouped Items of Expenditure	Average of all Industrial Households supplying 4 Weekly Bud- gets, Expendi- ture per Week, 1937-38	Official Weights, proportional to Average Distribution of Expen- diture, adopted in compilation of		
		1914 Cost of Living Index	New Retail Prices Index at June, 1947, prices	
Food	s. d. 34 1	60	35	46
Rent and Rates	10 10	16	9	12
Clothing	9 4	12	9	12
Fuel and Light	6 5	8	7	9
Other items in 1914 Index		4	16	21
Items not cov- ered by 1914 Index	25 7	—	24	
TOTAL	86 3	100	100	

* Ministry of Labour Gazette, December, 1940, p. 305; *Interim Index of Retail Prices* (H.M.S.O., 1947), p. 4.

it was an average, came out much higher than many people probably anticipated. Secondly, the miscellaneous group was a very much extended list in 1937-38. If we confine ourselves to the items that were included under this head in 1914, we find that the percentage of the average weekly income allotted to the miscellaneous group was five times the 1914 estimate, 21 per cent as compared with 4 per cent. This increase was compensated for mainly by the reduction in the percentage spent on food, from 60 to 46 per cent; although, owing to rent restriction, the percentage spent on rent and rates also fell from 16 to 12 per cent. The proportions allotted to clothing

and fuel and light were almost unchanged in 1937-38 being still 12 per cent and 9 per cent, respectively.

We get of course a very different picture by extending the miscellaneous list of items included in the budget. The proportion of the weekly expenditure under the miscellaneous head then becomes ten times what it was taken to be in 1914. It must not be assumed that no working-class families bought any of these additional items in 1914; all that can be said is that no account was taken then of them in computing the Cost of Living Index. Of this, however, we can be sure. The amount of their weekly income which any family find themselves free to spend on miscellaneous items, when they have met the cost of the more obvious essentials of life, is not a bad index of their standard of living. Viewed from this angle the change in weighting even on the basis of the old list, when 1937-38 is compared with 1914, is striking.

CONFIDENTIAL

CL. 1

Ref. No.....

Ministry of Labour, London, S.W.1

BUDGET OF FAMILY EXPENDITURE

NOTE

1. The enquiry is being undertaken by the Ministry of Labour in order to obtain information as to weekly family expenditure.

2. This information is required partly to enable the Ministry of Labour to provide a new and up-to-date basis for the official cost-of-living index figures, and partly to enable the Health Departments to obtain reliable information as to the kinds and amounts of food bought.

3. It would, of course, be impossible to collect information of this kind from all the millions of families in this country. Many thousands of families and individuals, however, in all parts of the country, are being asked to help the Government by supplying information; if a sufficient number of these are willing to do so,

it will be possible to compile statistics which will be of very great national value.

4. The families, and individuals, who are being asked to supply information have been chosen entirely at random, in order that the particulars obtained may give a fair average for the whole country. You are one of those who are being invited to co-operate in this matter, and it is hoped that you will be willing to keep the necessary records for a week, and to give the details asked for on pages 3 to 14 of this form.

5. All information given will be treated as *strictly confidential*. Particulars in regard to individual households will not be published or disclosed in any way. When this form has been collected from you, with the particulars filled in, it will be sent at once to the head office of the Ministry of Labour, in London, where it will be seen only by the officials who will be engaged in compiling the statistics. Your name and address should not be written on any part of the form.

2

INSTRUCTIONS FOR FILLING UP THE FORM

PAGE 3.—PARTICULARS OF HOUSEHOLD

In the column for "Occupation" state the personal occupation of each wage (or salary) earner, such as bricklayer, carter, clerk, general labourer. In the column for "Industry or Business of present Employer" state the industry, trade, profession or business in which the employer is engaged, such as building, engineering, shopkeeping.

PAGES 4 TO 10.—EXPENDITURE ON FOOD

1. A separate page is provided for each day of the week. Give on each page particulars of all food bought on the day stated at the top of the page (whether it is paid for on that day or on some other day).

2. Only the more important articles, or those frequently bought, are shown separately, but there are spaces in which details of other purchases can be given. A list of other items is printed on pages 14 and 15; if any of the items in that list are bought during the

week it is important to include them on the page for the day on which they are obtained.

3. A separate entry should be made on the form for *each* article bought. Do not group together the cost of several articles.

4. In the column headed "Description of Item" give short particulars, so far as possible, of the kind or description of each article bought. For example:

Bread.—Write white, or brown, or milk bread, etc.

Flour.—State whether plain or self-raising flour.

Milk, Condensed.—State whether full-cream sweetened, unsweetened, or skimmed.

Lard, Suet, Dripping or other cooking fats.—Write lard or suet or dripping or the name of any other cooking fat bought.

Cheese.—State the kind and whether bought by weight or in packets.

Bacon.—State the cut bought, such as back, collar, streaky, or roll.

Sugar.—State whether lump or granulated, etc.

Jam, Marmalade, Syrup, Treacle.—State which of these was bought.

Dried Fruits.—State the kind of fruit bought.

Other Dairy Produce, Groceries, Provisions, etc.—State separately each article bought. See List on page 14 for articles to be included here.

Beef, Mutton, Pork.—State the joint or part bought, such as ribs, steak, leg, chops.

Other Meat

Fish

Fresh Vegetables

Fresh Fruit

Other Food and Drink

Meals away from home.—See below (paragraph 7).

5. In the column for "Quantity Bought" write the weight or measure, where possible. This will usually be the number of lbs., but in some cases it will be a measure (for example, pints in the case of liquid milk). For bread the number of loaves is not sufficient unless the approximate weight of the loaf is also stated. For cheese in packets and other articles bought in packets, boxes, or tins, the approximate weight should also be stated, where possible.

6. In the column for "Cost" write the *total amount paid* (or to be paid) for the quantity stated in the previous column (*not* the price per lb., etc.).

7. *Meals away from Home.*—In the "Description" column, state whether dinner, tea, etc. In the column for "Quantity Bought" state the number of meals bought away from home. State the total cost in the last column. If free meals or milk free of charge are obtained by children at school, etc., they should be shown on the form, and the word "free" should be written in the column for "Cost".

3

PARTICULARS OF HOUSEHOLD

Members of Household. State relationship to head of household (head, wife, son, sister, etc.).	Sex (M. or F.).	Age if under 18 years.	Occupation of each wage (or salary) earner. <i>If out of work write "out of work". If wholly retired, write "retired". (See note on page 2.)</i>	Industry or Business of present Employer. <i>(See note on page 2.)</i>	Number of days worked by each earner in previous week (10th-16th Oct.).
1.	...	...	...	...	...
2.	...	...	...	...	...
3.	...	...	...	...	...
4.	...	...	...	...	...
5.	...	...	...	...	...
6.	...	...	...	...	...
7.	...	...	...	...	...
8.	...	...	...	...	...
9.	...	...	...	...	...
10.	...	...	...	...	...
11.	...	...	...	...	...

HOUSING, RENT, &c.

	REPLY
1. If you rent your house or dwelling, state:—	£ s. d.
Rent paid per week (or month, quarter, etc.)	 per (week, month, quarter, etc.).
Does this amount include rates and water charges? (<i>Write Yes or No.</i>) . . . . .	.....
2. If you are buying your house, state:—	£ s. d.
Amount paid per week (or month, quarter, etc.)	 per (week, month, quarter, etc.).
Number of years over which payments are spread . . . . .	.....
Amount of lump sum paid down	£
3. In any case, state:—	£ s. d.
Rates and water charges (if not included in rent given above)	 per (year, $\frac{1}{2}$ -year, etc.).
Number of rooms in your house or dwelling, including any you let (do not count scullery or bathroom) . . . . .	.....
Number of rooms you let (if any)	s. d.
Rent received for those rooms	 per week.

EXPENDITURE ON FOOD
ON SUNDAY, 17TH OCTOBER, 1937

ITEM	Description of Item. (See notes on page 2)	Quantity Bought	Cost	
			s.	d.
Bread				
Flour				
Cakes, Buns, etc. (<i>give details</i>):—				
Milk, Liquid				
„ Condensed				
Butter				
Margarine				
Lard, Suet, Dripping and other Cooking Fats				
Cheese				
Eggs				
Bacon (including Gammon) .				
Tea				
Sugar				
Jam, Marmalade, Syrup, Treacle				
Dried Fruits (Currants, Prunes, etc.)				
Other Dairy Produce, Groceries, Provisions, etc. (<i>give details</i>):—				

ITEM	Description of Item. (See notes on page 2)	Quantity Bought	Cost	
			s.	d.
Beef—Home produce . . .	..			
„ —Imported . . .	..			
Mutton or Lamb—Home produce				
„ „ —Imported . . .				
Pork				
Other Meat (<i>give details</i>):—				
Fish, Fresh				
„ Dried or Cured . . .				
„ Fried				
Potatoes				
Other Fresh Vegetables . . .				
Fresh Fruit				
Other Food and Drink (<i>give details</i>):—				
Meals, Milk, etc., Away from Home:—				
(i) At School { Meals . . .				
{ Milk . . .				
{ Other . . .				
(ii) Other (<i>give details</i>):—				

II

GAS

	<i>s.</i>	<i>d.</i>
If you have a slot meter, state how much money you have put in the meter this week		
If your meter is not a slot meter:—		
What was the period covered by your last gas account (month, quarter, etc.)?		
What was the quantity of gas charged for on this account?		
What was the total amount of the account?		
If any charge for hire or purchase of fittings and appliances was included in the account, state how much		

ELECTRICITY

	<i>s.</i>	<i>d.</i>
If you have a slot meter, state how much money you have put in the meter this week		
If your meter is not a slot meter:—		
What was the period covered by your last electricity account (month, quarter, etc.)?		
What was the quantity of electricity charged for on this account?		
What was the total amount of the account?		
If any charge for hire or purchase of fittings and appliances was included in the account, state how much		

GARDEN, ALLOTMENT, ETC., PRODUCE

State quantity (if any) of eggs, vegetables, fruit, etc., produced at home, or on your allotment or potato ground, and con- sumed in your household during this week.		Number
		lbs.
	Eggs . . . . .	.....
	Vegetables and fruit (<i>give details</i>):—	.....
	Other produce (<i>give details</i>):—	.....
		
		

EXPENDITURE on OTHER ITEMS in the

Note.—For the items on these two pages the particulars given should

ITEM	Description of Item	Quantity Bought	Cost	
			s.	d.
Coal	_____	_____	_____	_____
Coke	_____	_____	_____	_____
Firewood	_____	_____	_____	_____
Oil	_____	_____	_____	_____
Candles	_____	_____	_____	_____
Matches	_____	_____	_____	_____
Soap	_____	_____	_____	_____
Soda, Polishes, Cleaning Materials	_____	_____	_____	_____
Ironmongery, Tools, etc. . .	_____	_____	_____	_____
Household Brushes, Brooms, etc.	_____	_____	_____	_____
Crockery, Glass	_____	_____	_____	_____
Drapery, etc.	_____	_____	_____	_____
Furniture	_____	_____	_____	_____
Carpets, Floorcloth, Mats . .	_____	_____	_____	_____
Other Utensils, Furnishings, etc. (give details):—	_____	_____	_____	_____

WEEK ENDING SATURDAY, 23RD OCTOBER, 1937
relate to the total expenditure during the week 17th to 23rd October

ITEM	Amount (if any paid this week)	
	s.	d.
Fares to and from Work:—		
Season or Contract ticket (if bought this week)	..	
Railway { Workmen's cheap fares	..	
{ Other railway fares		
Bus, tram, coach, etc., fares		
Other Fares (excluding annual holiday fares):—		
Railway fares		
Bus, tram, coach, etc., fares	..	
Newspapers		
Books, Stationery, etc.		
Postages	..	
Cinemas		
Theatres, Music-halls, Concerts, etc.		
Sports, Games, etc. (Admission Charges)		
Hairdressing		
Payments to Clothing, etc., Clubs		
Education (<i>fees for day school or evening classes, including commercial, technical, etc., education</i>)		

EXPENDITURE on OTHER ITEMS in the

Note.—For the items on these two pages the particulars given should

ITEM		Description of Item	Quantity Bought	Cost	
	Write "Club" if obtained through a club or "Cash" if bought otherwise			s.	d.
Clothing:—					
Men's Clothing					
Women's Clothing and Materials					
Children's Clothing and Materials					
Boots and Shoes					
Clothing Repairs, Cleaning, Dyeing					
Repairs to Boots and Shoes					
Instalment Payments for Hire Purchase, etc.					
(This week's payments only; state in the next column the articles for which payments were made)					
Tobacco, Cigarettes, etc.					

WEEK ENDING SATURDAY, 23RD OCTOBER, 1937*relate to the total expenditure during the week 17th to 23rd October*

ITEM	Amount (if any paid this week)	
	s.	
Doctor, Dentist	..	
Medicine, Drugs, etc.	..	
Payments to Hospital Funds	..	
Trade Union, Friendly Society, Burial Club, etc., Subscriptions	..	
Payments to Pension Funds, Insurance Pre- miums, etc.	..	
Licences (Dog, Wireless, Motor-cycle, etc.)		
Laundry		
Wages paid for Domestic Help		
Holiday Expenditure, if any, this week (including holiday travelling expenses)		
Other Expenditure this week (<i>give details—see list on page 15</i>):—		
		
		
		

NOTES

1. If any member of the household was absent from home for the whole or part of the week, please state below which individual was away, and for how many days.

2. Please mention any other *exceptional* circumstances which affected the household expenditure during the week for which particulars have been given.

ITEMS OF EXPENDITURE NOT SEPARATELY SPECIFIED ON THE FORM

Only the more important articles, or those which are likely to be most frequently bought, are separately specified on pages 4 to 13. Spaces are provided, however, in which particulars of any other expenditure should be shown. A list is given below of items which, if bought during the week, should be entered in those spaces. It is very important that any expenditure during the week on articles in this list should be shown on pages 4 to 13.

Printed Items	Items to be included, if bought during the week
Other Dairy Produce, Groceries, Provisions, etc.: (pages 4 to 10).	Dried milk, such as Allenburys, Cow-and-Gate, Ambrosia, Glaxo, Trufood; other preparations, such as Ovaltine, Malted milk, Bournvita; cream, fresh or in tin. Cake mixture, baking powder, egg mixture, custard powder, blancmange powder. Biscuits; Shredded wheat, wheat flakes, Force, Post toasties, Vita Weat, Weetabix, Ryvita, etc. Oatmeal, oats, barley, rice, sago, tapioca, semolina, cornflour, macaroni, vermicelli. Lentils, split peas, dried peas, butter beans, haricot beans. Cocoa, coffee. Tinned fruits, bottled fruits, tinned vegetables. Tinned salmon, sardines, brisling, herring, crab, lobster. Meat extracts, Bovril, Oxo, Beefex, Marmite, soups. Honey, lemon curd; jelly, jelly crystals, packet jelly. Pickles, sauces, salad oil, vinegar, salt, pepper, mustard.

Printed Items	Items to be included, if bought during the week
Other meat: (pages 4 to 10).	Veal, ham. Kidney, liver, fry, heart, head, sweetbread, brain, chitterlings, tripe, cowheel. Minced meat, sausage. Rabbit, poultry. Corned beef, pressed beef, brawn, tongue, cooked ham, cooked pork. Veal and ham roll, meat pie, rissoles, polony, black pudding, white pudding, potted meat.
Fish, Fresh: (pages 4 to 10).	Fresh cod, haddock, herring, bream, brill, dabs, eels, flake, flounders, flukes, gurnards and latchets, hake, halibut, huss, lemon sole, ling, mackerel, pilchard, plaice, rock salmon, skate, sole, sprats, turbot, whiting, wet fillets, crab, lobster, shrimps, winkles, mussels, cockles, whelks.
Fish, Dried or Cured: (pages 4 to 10).	Dried and smoked haddock, red herring, bloaters, kippers, ling, dried fillets.
Fish, Fried: (pages 4 to 10).	Fried fish (from shop); if fried potato chips are bought with the fish this should be specified.
Other Fresh Vegetables: (pages 4 to 10).	Carrots, parsnips, swedes, turnips, artichokes, onions, leeks, marrows. Beans (broad, French and runner), peas. Lettuce, cucumber, tomatoes, beetroot, cress, radishes, celery. Cabbage, broccoli, cauliflower, kale, sprouts, spinach.

Printed Items	Items to be included, if bought during the week
Fresh Fruit: (pages 4 to 10).	Apples, pears, plums, damsons. Oranges, lemons, grapefruit, bananas. Grapes, currants, blackberries, gooseberries, raspberries, strawberries. Rhubarb, nuts.
Other Food and Drink: (pages 4 to 10).	Sweets, chocolate, ice cream. Yeast. Pease pudding. Fried potato chips (if bought without fish—see also under fish). Food bought for animals, such as dog biscuits, cats' and dogs' meat and food for poultry, pigeons and other birds. Ale, stout, spirits, wine, mineral waters, lemon squash and other drinks.
Ironmongery, Tools: (page 12).	Kettles, saucepans, frypans, pails, bowls, baths, knives, forks, spoons, tools.
Crockery, Glass: (page 12).	Plates, cups and saucers, basins, dishes, jugs, teapots, glassware.
Drapery, etc.: (page 12).	Blinds, curtains, sheets, pillow cases, blankets, quilts, bedspreads, mattresses, pillows, cushions, towels, tablecloths, teacloths, table napkins, handkerchiefs, dusters, floorcloths, dishcloths.
Men's Clothing: (page 12).	Overcoats, waterproofs, mackintoshes, suits. Cardigans, pullovers, overalls. Shirts, collars, ties, hats, caps, gloves. Vests, pants, braces, belts, socks, stockings. Pyjamas, nightshirts.

Printed Items	Items to be included, if bought during the week
Women's Clothing: (page 12).	Coats, waterproofs, mackintoshes, costumes, dresses, frocks. Blouses, jumpers, cardigans, overalls, aprons, pinafores. Collars, ties, hats, gloves. Vests, knickers, combinations, petticoats, corsets, socks, stockings. Pyjamas, nightdresses. Wool for knitting. Materials for clothing and payments for making-up clothing.
Children's Clothing: (page 12).	Coats, waterproofs, mackintoshes, suits, costumes, dresses, frocks. Blouses, jumpers, cardigans, pullovers, overalls, aprons, pinafores. Shirts, collars, ties, hats, caps, gloves. Vests, pants, knickers, combinations, petticoats, corsets, socks, stockings. Pyjamas, nightshirts, nightdresses. Materials for clothing and payments for making-up clothing.
Other Expenditure: (the last item on page 13).	Cycles, motor cycles, motor cars, and repairs. Petrol, motor oil. Wireless, musical instruments. Gardening, rent of allotment, seeds, plants. Suit cases, attaché cases, handbags, umbrellas, walking sticks. Toilet requisites, razors, razor blades. Watches, clocks, and repairs. Payments to Christmas clubs.

CONFIDENTIAL

CL.2

*Ministry of Labour, London, S.W.1*Ref. Nos.:—

Form CL. 1 _____

Individual No. _____
(page 3 of CL. 1.)PERSONAL EXPENDITURE OF WAGE (OR SALARY)
EARNER IN THE WEEK 17TH TO 23RD OCTOBER, 1937

Particulars should be given on this Form of any personal expenditure, by the wage (or salary) earner, other than payments which are already included in the Budget of Family Expenditure (form CL. 1) filled up by the housewife or the head of the family.

Payments made to the housewife or the head of the family for board and lodging, laundry, etc., should not be included here.

Item of Expenditure	Amount (if any) paid this week	
	s.	d.
Food and Drink bought Away from Home:—		
Meals bought Away from Home		
Other Food* and Drink (<i>give details</i>):—		..
		..
		..
Clothing, including Boots and Shoes (<i>give details</i>):—		..
		..
		..
Clothing Repairs, Cleaning, Dyeing		
Repairs to Boots and Shoes		
Cigarettes		
Tobacco		

* Include fruit, sweets, chocolates, etc., under "Other Food."

Item of Expenditure		Amount (if any) paid this week	
		s.	d.
Fares to and from Work:—			
Railway	Season or contract ticket (if bought this week)	.....	.....
	Workmen's cheap fares . . . . .	.....	.....
	Other railway fares . . . . .	.....	.....
Bus, tram, coach, etc., fares . . . . .		.....	.....
Other Fares (excluding annual holiday fares):—			
Railway fares . . . . .		.....	.....
Bus, tram, coach, etc., fares . . . . .		.....	.....
Newspapers . . . . .		.....	.....
Books, Stationery, etc. . . . .		.....	.....
Postages . . . . .		.....	.....
Cinemas . . . . .		.....	.....
Theatres, Music-halls, Concerts, etc . . . . .		.....	.....
Sports, Games, etc. (Admission Charges) . . . . .		.....	.....
Hairdressing . . . . .		.....	.....
Education (fees for evening classes, etc.) . . . . .		.....	.....
Payments to Hospital Funds . . . . .		.....	.....
Trade Union, Friendly Society, Burial Club, etc. . . . .		.....	.....
Payments to Pension Funds, Insurance Pre- miums, etc. . . . .		.....	.....
Licences (Dog, Wireless, Motor-cycle, etc.) . . . . .		.....	.....
Laundry . . . . .		.....	.....
Holiday Expenditure, if any this week (including travelling expenses) . . . . .		.....	.....
Other expenditure this Week (give details):—		.....	.....

CONFIDENTIAL

CL.3

Ref. No.

Information for the use of the Ministry of Labour

EXPENDITURE ON CLOTHING DURING THE WEEK

24TH TO 30TH OCTOBER, 1937

NOTE.—This Form, when filled up, should be posted, in the envelope provided, to the Director of Statistics, Ministry of Labour, London, S.W.1. No postage need be paid.

1. If you have bought any clothing (either direct for cash, or through a club) during the week 24th to 30th October, 1937, please give details below:—

	State what articles were bought during the week	State Number or Quantity of each article bought	State Price of each Article		Write "Club" if obtained through a Club; write "Cash" if not bought through a Club
			s.	d.	
Men's Clothing .					
Materials for Men's Clothing . . .					
Women's Clothing					
Materials for Women's Clothing					

	State what articles were bought during the week	State Number or Quantity of each article bought	State Price of each Article		Write "Club" if obtained through a Club; write "Cash" if not bought through a Club
Children's Clothing			s.	d.	
Materials for Children's Clothing					
Boots, Shoes, Slippers, Clogs, etc.					

2. If you have had any repairs done to clothing, or to boots and shoes, etc., or if you have had any articles of clothing dyed or cleaned during the week, please state the amount paid (or to be paid) for this work:—

s. d.

Repairs to Clothing

Repairs to Boots, Shoes, etc.

Dyeing and Cleaning

3. If you obtain any clothing, or boots and shoes, through a club, please state the amount you pay each week to the club

6. Has the personal expenditure of all members of the family (including wage or salary earners) been included on Form CL. 1 or CL. 1 (*Ag.*)?
7. If not, have details of such expenditure been supplied on Form CL. 2?
8. Has the person, or family, promised to supply weekly records of expenditure on clothing, on Form CL. 3?

Name of Visitor: $\left. \begin{array}{l} \text{Mr.} \\ \text{Mrs.} \\ \text{Miss} \end{array} \right\} \dots\dots\dots$

NOTE.—If any budget forms (CL. 1, CL. 1 (*Ag.*), CL. 2, or CL. 3) have been filled up by the person, or family, whose address is given overleaf, the following Reference Number should be inserted in the space provided at the top right-hand corner of each of those forms:—

MINISTRY OF LABOUR,

(STATISTICS BRANCH),

QUEEN ANNE'S CHAMBERS,

28, BROADWAY,

LONDON, S.W.1.

September, 1937.

Dear Sir or Madam,

The Ministry of Labour desires to obtain particulars of the weekly household expenditure of some thousands of families, and individuals, throughout Great Britain, partly in order to provide a new and up-to-date basis for the official cost of living index figures, and partly to provide reliable information as to the kinds and amounts of food bought, for use by the Health Departments of the Government in connection with questions relating to diet and nutrition. It is of great national importance that information on this subject should be made available.

It is, of course, impossible to collect information of this kind from all the millions of households in Great Britain. Many thousands of families and individuals, however, in all parts of the country will be visited and will be asked to help by supplying information on printed forms, which will be provided for the purpose. You will probably be visited in October, and invited on behalf of the Department to co-operate in this matter, and it is hoped that you will be willing to supply the desired information.

Any particulars which you furnish will be regarded as *strictly confidential* and your name and address need not be shown on the forms on which the particulars are given.

Yours faithfully,

E. C. RAMSBOTTOM,

Director of Statistics.

REFERENCES

¹ An official account of the method of compilation is to be found in a short pamphlet issued by the Ministry of Labour, *The Cost of Living Index Number*. (H.M.S.O., 1934.)

² See *Interim Report of the Cost of Living Advisory Committee* (H.M.S.O., Cmd. 7077, 1947); also *Interim Index of Retail Prices*, a short explanatory Note prepared by the Ministry of Labour and National Service (H.M.S.O., 1947).

³ A full account of the results will be found in three successive issues of the *Ministry of Labour Gazette*, dated December 1940, January 1941, and February 1941. I am indebted to the Director of Statistics, Ministry of Labour, for permission to reproduce the forms used in the Budget Enquiry.

⁴ See Form CL.1, p. 151. Pages 5 to 10 of the form are omitted.

⁵ See Form CL.5, p. 172

⁶ See Form CL.2, p. 168

⁷ See Form CL.3, p. 170

⁸ See Form CL.5, p. 172

⁹ See Form CL.6, p. 174

CHAPTER XIII

SURVEY OF NUTRITION

Origin of the Survey—The standard of living and the level of nutrition of the population are clearly closely related problems and, although detailed attention cannot be given to it, the Nutrition Survey deserves notice because the resulting conclusions made so great an impression on the public mind. So high too was the reputation of its originator, Sir John Boyd Orr, in this field of research that it led to his appointment as first Director-General of the Food and Agriculture Organization, an organ of the United Nations that is concerned with problems relating to the production and distribution of food on a world scale, with the aim of at present maintaining, and eventually raising, the level of nutrition and the standard of living of all peoples.

The Nutrition Survey had its origin in an enquiry as to food consumption by one of the main branches of the food industry. To answer this question a special investigation of the food habits of the nation was necessary, and this was undertaken by the Rowatt Research Institute of which Sir John Orr was the Director. The Agricultural Marketing Boards, being also interested in the investigation, co-operated. When it was completed the results were combined with other available information in order to get an estimate of the diets of different classes of the population, graded according to family income.

Aim of the Survey—The main purpose of the survey was to find out how far the various constituents of the normal diet were adequate for the maintenance of *perfect health* in different classes of the population of Great Britain. The standard envisaged was an *optimum standard*. It thus differed significantly from the standards regarded as suitable by most authorities who have attempted to estimate the number and proportion of families living in poverty in different parts of the country. In these poverty studies it has been customary to

take as standard a diet at or very little above the bare level of subsistence. But, as Sir John Orr points out, "people can keep alive for varying periods on diets with varying degrees of deficiency". The standard adopted was intended "not just to provide a diet which will keep people alive, but a diet which will keep people in health; and the standard of health adopted is a state of well-being such that no improvement could be effected by a change in the diet. The standard may be regarded, therefore, as the minimum for maximum health".¹

He argues cogently for the adoption of such a standard as an aim by the State, and the fact that his views have carried conviction to those in control in many countries gives them added weight. To adopt any lower standard, he says,

leads to a great amount of preventable disease and ill-health which lay a heavy financial burden on the State, and on the public-spirited citizens who support hospitals and other charitable organizations. It is probable that an inquiry would show that the cost of bringing a diet adequate for health within the purchasing power of the poorest would be less than the cost of treating the disease and ill-health which would thereby be prevented. A few years hence when the connection between the poor feeding of mothers and children and subsequent poor physique and ill-health is as clearly recognized as the connection between a contaminated water supply and cholera, the suggestion that a diet adequate to health should be available for everyone will be regarded as reasonable and in accordance with common sense, as is the preservation of our domestic water supply from pollution.²

Standard adopted and Outline of Method—Orr related his estimate of the different constituents needed in the diet for perfect health to the work of Dr. Stiebeling. Her standards were compiled in the United States Government Bureau of Home Economics on the basis of intensive laboratory research and dietary surveys conducted by Sherman and others.³ These were probably the best available at the time when Orr's enquiry began. Subsequently, however, fifteen of the leading experts on nutrition from Europe and America examined the basic requirements for maximum health and issued a report

on the subject.⁴ This international standard has been generally accepted as authoritative in all countries. It was approved, for instance, by the Advisory Committee on Nutrition set up by the British Government. So far as comparison is possible, Orr's standard is rather below the international standard in the estimated minimum caloric, protein, and mineral requirements for perfect health.⁵

The successive stages in the Nutrition Survey⁶ were as follows:

(1) The nation's total supply of main foodstuffs was computed from agricultural statistics, import and export returns, and the output records of manufacturers and processors.

(2) The population was then classified in six broad groups according to family income, as estimated from income-tax returns, wage statistics, and data relating to unemployment, pensions, and other social income, combined with an investigation by sample of the 1931 Census records relating to size of family and ratios of earners to dependants in different occupation groups.

(3) Estimates of expenditure on various foodstuffs in the different income groups were based on data compiled from collections of family budgets.

(4) The amount of each constituent present in the average diet of each income group was compared with the amount required for perfect health.

(5) A review of the nation was made to discover how far inadequacy of the diet was reflected in poor physique and ill health.

Estimates of the supply of foodstuffs in the United Kingdom were made by Mr. A. E. Feavearyear, along the lines of previous estimates made by him, which had been based on market surveys undertaken by the Empire Marketing Board.⁷ They covered mainly the items of food which entered into the Ministry of Labour Cost of Living Index, so that his figures could be checked against the corresponding Ministry of Labour figures. Comparison was also possible with earlier estimates made by Sir Alfred Flux.⁸

The economic classification of the population was made on the basis of weekly income per head, the total family income from all known sources being divided by the number of persons in the family, irrespective of sex and age.

Data from the Government Report on Housing and the Census Occupation Tables and General Tables were supplemented by an analysis of a random sample of 23,000 returns of private families abstracted from the 1931 Census, and by such published information as could be traced regarding wages and earnings in different occupations and different areas.⁹ From this information separate estimates were made of the number of married men, the number of single men and women, and the number of non-adult males and females, in different income groups; and tables were formed showing the distribution of families according to size and number of earners in selected occupational groups. Thence it was possible to arrive at a very rough estimate of the number of families and the proportion of the population falling into different income groups, as follows:¹⁰

<i>Weekly Income per Head</i>	<i>Estimated Average Weekly Expenditure per Head on Food</i>	<i>Percentage of Estimated Population</i>
Up to 10s. . .	4s.	10
10s. to 15s. . .	6s.	20
15s. to 20s. . .	8s.	20
20s. to 30s. . .	10s.	20
30s. to 45s. . .	12s.	20
Over 45s. . .	14s.	10

There may be more than one weak link in the chain of calculations leading to this table, depending as it does on so many somewhat hypothetical estimates.

For the estimates of expenditure per head on food, shown in the table, use was made of 1,152 budgets. Nearly one-half of these budgets were specially collected for this enquiry by

the Women's Co-operative Guild; the remainder had been previously collected by other bodies for other purposes.¹¹

A check was available on the estimates of average expenditure per head on each food in the various income groups. Weighting the figure for each group by the proportion of the population estimated to be within that group, it was possible to get an estimate of the average national expenditure on that food; and this should agree with the national average obtained by dividing total supply valuation by total population, if due allowance is made for the rather wide margin of error inherent in the estimates, bearing in mind also that the two sets of figures relate to somewhat different totals.¹²

Broad Conclusion from the Survey—The tentative conclusion reached in this survey came as an unwelcome surprise to the majority of people. It was that no less than one-half the nation was inadequately nourished. Moreover, this half contained a disproportionately large number of children, not only because the poorer families had on the average a greater number of children, but also because, being larger, their incomes were likely to be less adequate.

Subsequent investigations modified this broad conclusion. The improvement was mainly due to the special attention paid during the war years to the needs of mothers and children. Not only were milk and dinners provided free of charge for large numbers of school children, but necessitous mothers and infants also received foods rich in vitamins and minerals free. Sir John Orr himself, in a later publication, comments on the remarkable improvement in the national diet and health but remarks that, in spite of it, the diet of nearly one-third of the population was still not up to the standard now known to be necessary for health.¹³

In assessing the reliability of the results of this pioneer survey of the diet of the nation, note should be taken of the judgment passed upon it by certain authorities. In the Foreword to the Second Edition it is stated that the Minister of Health, having asked the Advisory Committee on Nutrition to consider it, a Statistical Sub-Committee was appointed "to report on the adequacy of the data and the degree of probability

attached to the estimates of food consumption of the different groups of the population". This Sub-Committee pointed out that a considerable margin of error was possible in the estimate of the average level of consumption of any particular group, but they discovered no reason to suggest that the broad results were seriously misleading. On the contrary, while regarding the data as inadequate—which was freely admitted by the author—they expressed themselves as "satisfied that no better estimates . . . could have been made from the available data", and they reported that the conclusions as to "the broad trend of consumption of the different articles of food over the income groups" appeared to them "likely to be in accordance with the facts".¹⁴

The most doubtful part of the calculations, in the view of the Sub-Committee, was the estimate of the proportions of the population falling into the selected lower income groups. This part of the work, on the other hand, was praised by Professor Bowley, as experienced an authority as anyone on the subject of national income and working-class earnings. He regarded the information obtained from the special sample of the 1931 Census population, and the fairly well established wage estimates, as "probably sufficient for the very guarded result to which it leads".¹⁵

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- ¹ *Food, Health and Income*, by John Boyd Orr, p. 7 (2nd Edition, 1937).
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- ³ *Food Budget for Nutrition and Production Programs*, H. K. Stiebeling (U.S. Dept. Agric. Misc. Pub. No. 183, December 1933).
- ⁴ League of Nations Technical Commission, *Report on the Physiological Basis of Nutrition*, 1936.
- ⁵ *Food, Health and Income*, Appendix VIII.
- ⁶ *Ibid*, pp. 18, 19.
- ⁷ *Econ. Jnl.*, 1934, pp. 34-37.
- ⁸ *Our Food Supply before and after the War*, J.R.S.S., pp. 538-560, 1930.
- ⁹ *Food, Health and Income*, p. 63.
- ¹⁰ *Ibid*, p. 66.
- ¹¹ *Ibid*, p. 59.
- ¹² *Ibid*, Appendix VI.
- ¹³ *Fighting for What?* Sir John Orr, 1942, p. 34.
- ¹⁴ *Food, Health and Income*, p. 5.
- ¹⁵ See also comments on the estimates by Colin Clarke in his *National Income and Outlay*, 1937, pp. 110-114.

CHAPTER XIV

A GOVERNMENT RESEARCH UNIT

Inter-War Developments—Apart from occasional incursions by Government Departments into the field of social research, to furnish fresh light on specific problems, during the interval between the two wars a gradual development of official or semi-official machinery for the more systematic study of social and industrial questions was witnessed. An Economic Advisory Council was constituted and, in the summer of 1931, the Prime Minister appointed a standing committee "to supervise the preparation of periodical reports" to this Council "on the economic situation, and to advise as to the continuous study of economic development". The Universities centred in the depressed areas made Industrial Surveys for the Board of Trade, the results of which were issued as blue books in 1932. An Industrial Health Research Board was formed to undertake research on the relation of conditions of work to health and efficiency under the Medical Research Council. Similar contacts had been established between the Government and leaders in the domain of the natural sciences. Important work was done, for instance, by the Department of Scientific and Industrial Research.

When the Second World War broke out such developments proved of inestimable value. The Government very soon had teams of economists and of statisticians continuously at work in close association with the Cabinet Secretariat. A Central Statistical Office and an Economic Section of the Cabinet Offices came into being, and a liaison system was evolved to procure from any Government Department the data essential for the preparation of reports on matters of urgent moment to the Government. Machinery was available too for the ready consultation of scientific experts as and when required.

A parallel development occurred in the field of social

research, in response to immediate demands by those charged with the administration of civil life. The rationing of food, the issue of clothing coupons, the complete mobilization of men and women for war or civilian service, problems of shortages and obstacles to full production, the salvage and "Dig for Victory" campaigns—all these called for investigations which had to be hurriedly improvised, but yet conducted scientifically so as to produce trustworthy conclusions on which Government action could be taken with confidence. It is evident that disaster might have resulted if, for example, labour mobilisation or food rationing had been badly muddled. Hence the essential need for reliable facts and figures.

Social Survey Department—Thus it came about that a new sociological research unit was created and was set at once to work. But when it was realized how useful an instrument it might be, and that there was abundant work it could do in peace time as well as in war time, the decision was taken to retain it when the war ended. At present it is one of the recognized Information Services of the Government for which the Lord President of the council is nominally responsible. Originally it was known as the Wartime Social Survey, but the prefix to the title has now been dropped.

The Director of this research unit and his staff do not themselves initiate the investigations they undertake. Usually a responsible Government Department asks for some special enquiry and, if it is judged to be in the national interest, the Treasury may sanction it. The special function of the Survey is to make first-hand collections of social data; it may be of the conditions of work or way of life of some section of the population, or of their habits of thought and their reaction to specific proposals or measures. Also, the information collected must, so far as possible, be of a kind that is either measurable or capable of exact formulation. This means that it must be built on a statistical foundation. The technique of the Social Survey is scientific, in that its observations are made in a detached and impartial spirit and under controlled conditions, the aim being to describe with as much precision

as possible the structure and activities of the groups studied and their environment.

There may appear to be an element of danger in the power the Government have by such means of testing the likely attitude of the public to measures which they wish to introduce. It is necessary, therefore, to stress the fact that it has been the practice studiously to avoid the prosecution of any enquiry about which there might be keen political controversy. The accepted aim in broad terms is to make social administration more efficient. This aim, being in the national interest, is generally favoured by that part of the public whose co-operation is sought when its purpose is clearly explained, as it always is at the outset of any enquiry. It incidentally serves also the valuable democratic purpose of interesting the public in what the Government is doing. The average proportion of refusals on the part of those invited to co-operate is claimed to be very low.

Nature of Surveys conducted—During the war enquiries were made by the Ministry of Food as to what proportion of housewives made their own cakes and how this would affect the demand for sugar and fats; and as to how the production of scarce foods could be concentrated in certain regions with least inconvenience to customers. The Board of Trade called for studies of the special needs of workers engaged in work causing abnormal wear and tear of clothing, justifying a supplementary allowance of coupons. Regular enquiries have been made as to the districts most affected by short supplies of consumer goods. Investigations were undertaken which led to the speeding up of recruits to such services as the A.T.S. and nursing, which were not at first favoured, and to removal of transport and canteen obstacles to full production. The general purpose was to enlist the whole-hearted efforts of the people in their work for the nation.

These were in the main short-time projects. Anticipating the return of peace the Survey staff also undertook enquiries of more lasting value. Two examples may be mentioned. Working in co-operation with the skilled technicians and scientific experts of the Building Research Station, they

collected for the Ministry of Works valuable data on such matters as heating, lighting, and sound in dwellings occupied by private families. Also regular surveys of the amount, distribution and classification of illnesses in the general population, on behalf of the Ministry of Health, are producing a mass of material which should grow in value as experience accumulates and it is progressively improved.

There is an increasing awareness of the need for collaboration between research workers if a really rich harvest is to be reaped from their individual labours. Both official and voluntary bodies must make their contribution, and this implies a greater degree of co-ordination than at present exists between them. Nowhere is this so true as in social research, because it is concerned with all aspects of the study of society. A field so wide cannot be properly cultivated by men with one-track minds, however skilled they may be in their own special discipline, or by single Departments of Government working without reference to what has been done or is being done by related Departments.

In order to get the social facts needed to meet any demand quickly and reliably the Social Survey has made use of the method of random sampling. Both the labour and the cost, in time and money, of any other procedure productive of equally trustworthy results would have made it prohibitive. In many undertakings it may prove difficult to ensure that the sample is absolutely random and therefore, within calculable limits, representative of the universe from which it is taken, but there is no doubt as to the aim. The aim is to get a sample or part which shall reproduce in correct proportion all the significant characteristics of the universe or whole. These characteristics are such as sex, age, occupation, economic grade, social status, and so on. Differences in any of these factors can only be disregarded if they are deemed most unlikely to affect the final results.

The Survey of Sickness—The procedure followed in seeking to get a satisfactory sample will be understood most readily by studying a concrete example, namely the design of the Sickness Survey. This enquiry is carried out by the Social

Survey working in collaboration with the Ministry of Health and the General Register Office. The information collected enables an estimate to be made of the total amount of incapacity due to illness and injury. A rough estimate of the severity of ill-health in different sections of the community can also be made. The Chief Medical Officer of Health has stated that it is based on survey procedure which sets a standard in thoroughness and scientific control for similar survey work in this country. For all medical aspects of the work, such as definition and classification of illnesses and interpretation of results relating thereto, the Ministry of Health is primarily responsible under the personal supervision of their chief medical statistician, Dr. Percy Stocks. As a member of the Medical Research Council's Committee on Hospital Morbidity Statistics he has taken a prominent part in the classification of sicknesses according to their code and short list, which is that adopted in the survey. His advice was followed in the preparation of the survey questionnaire, he directed the coding and tabulating done by the Ministry of Health, and he was author of the reports on its findings issued from time to time by the Ministry.

In one of his early introductions to it, Dr. Stocks wrote:

Hitherto the Ministry of Health has been unable to obtain any measure of the amount of non-fatal illness in the population as a whole, except with regard to notifiable diseases which comprise no more than 1 in 500 of all illnesses amongst adults. The rise and fall of the prevalence of illness, and its variation according to age, sex, size of family, kind of housing, and as between town and country, could only be judged from the Registrar-General's statistics of deaths. The total amount of incapacity caused by illness was also unknown since National Health Insurance records cover only a part of the population and deal only with such illnesses as cause incapacity for 4 days or more. To collect together all the records of people treated at hospitals and by doctors would be an enormous undertaking, expensive both in time and labour, and even if they could be assembled, such records would leave out of account all the minor illnesses for which medical advice had not been sought.

The survey now made each month relates to the civilian population of England and Wales over 16 years of age, although at first the sample upon which it was based was confined to the age group 16 to 65. The number of persons then interviewed was 2,500. It was enlarged to 2,910 when persons over 65 were included. Had this not been done the size of the sample in the age-group 16 to 65 would necessarily have been less than 2,500, and the standard errors—which depend inversely upon the size of the sample—would have been consequently larger, so that the results would not have been strictly comparable with those obtained before the inclusion of persons over 65 in the sample.

Allocation of Interviews—The 2,910 interviews are appropriately distributed among the eleven Civil Defence Regions of England and Wales, which are also administrative regions for Ministry of Food registration purposes. The allotment of interviews to each region is in correct proportion to the population currently estimated in that region in the General Register office. For example, the North-West Region in a particular month was estimated to contain 15·6 per cent of the total population of England and Wales. Consequently 15·6 per cent of the total 2,910 interviews, *i.e.* 454, were allotted to the North-West. Again, the Registrar-General provides the Social Survey with estimates of the population resident within each administrative district of every region. It was estimated that 9·4 per cent of the population in the North-West Region was resident in rural districts and 90·6 per cent in towns. Hence 43 interviews, 9·4 per cent of the total 454 allotted to the North-West, were assigned to rural districts. But, for the convenience of transport and other reasons, the 43 interviews were confined this particular month to a selected rural district, a different district being selected each month. The remaining 411 interviews were next allotted to a selection of towns in the North-West grouped according to size, again in proportion to the population estimated to reside within each group. For example, of the total population in urban districts in the North-West, it was estimated that 16·5 per cent resided in towns of between 40,000 and 80,000 population. Hence 34

interviews each (twice 34 being 16·5 per cent of 411) were allotted to Warrington and Bury, these being 2 out of 17 towns of that order of population in the North-West, and a different choice of towns would be made at the next monthly reckoning.

The next step was to refer to the Maintenance Register kept at the local Food Registration Office for the names and addresses of the people living in each administrative district. For instance, Blackpool was the one town selected this particular month out of a group of five with an estimated population of between 120 and 180 thousand. Such towns comprised between them 12·9 per cent of the total urban population in the North-West. Hence 53 interviews (12·9 per cent of 411) were to take place in Blackpool, and the interviewer found in the Blackpool Registration Office files a card index containing a card for each of its approximately 115,000 adult inhabitants. The full length of this total block of cards was measured and found to be about 1,240 inches. Cards were therefore taken out of the file at intervals of $1240/53$, or 23 in., along the whole length of cards. This gave a list of 53 names and addresses for interview, with the recorded age of each person as additional information. A supplementary list of 18 names was obtained for emergency purposes by abstracting cards 1 in. beyond every third in the first list.

In this particular enquiry—and in this respect it was exceptional—it was permissible to interview a suitable proxy. For instance, information about a husband's health could be given by the wife. Even so, some 15 per cent of the persons originally chosen could not, for one reason or another, be interviewed. It then became necessary to fall back on the substitute list in order to make up the right quota from all registration districts. The 15 per cent substitutes may not have corresponded in all significant respects to the 85 per cent initially chosen and successfully interviewed. It was found that nearly half of the originally selected 15 per cent had moved out of the district, the maintenance register not being quite up to date. The real problem concerned the other half,

still living in the district, whom the survey staff failed to interview, a group found to comprise rather more men than women. This illustrates one of the difficulties encountered in trying to secure a strictly random sample.

Check on the Results—A useful check on the representative character of the sample actually obtained is provided by a comparison of the age and sex distribution of the whole civilian population of England and Wales, as estimated by the Registrar-General, and the corresponding figures for the sample. Here is one such comparison, relating to the survey sample taken in February 1946:

<i>Age last Birthday</i>	<i>Per cent of Females in each Age-Group</i>	
	<i>Registrar-General's Estimate</i>	<i>Sample Distribution</i>
16-19 . . .	7	4
20-24 . . .	9	10
25-29 . . .	9	10
30-34 . . .	10	11
35-39 . . .	10	10
40-44 . . .	10	11
45-49 . . .	9	9
50-54 . . .	8	8
55-59 . . .	7	7
60-64 . . .	6	6
65 and over . .	15	14
TOTAL .	100	100

Another check is obtained by comparing the proportion found in different months attached to various industrial groups, adopting a Ministry of Labour classification. Comparison at bi-monthly intervals in 1945 yielded the following figures (p. 190) which show good agreement in view of the fact that different towns in the region were sampled in different months.

<i>Occupational Group</i>	<i>Percentage Distribution of Adults sampled in separate months, 1945</i>		
	<i>August</i>	<i>October</i>	<i>December</i>
Manufacturing	15	14	13
Transport, etc.	7	6	6
Mining	3	2	3
Building, etc.	2	4	3
Agriculture and Fishing .	4	4	4
Distribution	4	5	5
Clerical	5	5	7
Miscellaneous	8	9	9
Professional and Managerial	3	4	4
Housewives	44	42	40
Retired and Unoccupied .	5	5	6
TOTAL	100	100	100

CHAPTER XV

TECHNIQUE OF SURVEYING

Mass Production—Just as the invention of machinery revolutionized the structure of industry, so advances in surveying technique, especially the introduction of sampling and the invention of machines for sorting and tabulating the raw material collected, have revolutionized the capacity to organize a large scale survey and made possible the mass production of results, though this does not imply any less need for personal attention to detail, nor does it do away with the individual collection of primary data.

Economy is now achieved by the subdivision of labour. One man will be charged with the responsibility of planning and directing the investigation. Some member of the staff may be expert in drafting a questionnaire. Imagination is needed to decide what questions are likely to produce the desired information. A different kind of ability is exercised in framing the questions clearly and concisely so that they can be readily answered. The aim in factual surveys is to ask questions to which a number of different answers can be foreseen and pre-coded.¹ Another member of the staff may be expert in the theory and practice of random sampling, which calls for a sound mathematical training. Field workers will be required with experience in interviewing, able to get their questions answered without raising protests in the local press. The answers, when suitably coded, will appear—as will be presently explained—as a series of holes punched in cards that can be fed directly to a sorting machine. Girls to punch the cards and others to run the machines are narrowly specialized sections of the research unit, who take a short intensive course to become proficient at their jobs. Someone again must decide which are the likely factors of critical significance in their influence on the ultimate results. Tabulating machines show up the relationship between such

factors and reduce the labour of analysis. Finally, there is the highly skilled task of interpreting facts and figures and writing a report, giving a detailed account of the methods used in making the survey and the conclusions reached.

Planning the Start—Let us now picture these successive stages of the work in more detail, as carried out by the Social Survey Unit described in the last chapter. The senior research officer chosen to direct the investigation will first discuss the problem in hand with the Government Department that has asked for it to be made, and we will assume Treasury sanction obtained. Agreement as to the type of questions to be asked and the people best qualified to answer them will enable him to prepare his plan. After discussing it with the research staff, one or two skilled investigators will be sent out to talk over broad aspects of the problem with selected members of the public, and a draft questionnaire will be drawn up in the light of these conversations. In the meantime, decisions will also have been taken, in consultation with the sampling department, as to the most suitable size of sample and how it should be obtained.

The draft schedule and the proposed sample will then be discussed together at another meeting of the research staff, and representatives of the coding, tabulating, and computing sections will be consulted to make sure that the information to be recorded on the schedule can be readily coded and that no practical difficulties are likely to arise at the tabulating and computing stages of the work.

A pilot survey is then made, a few hundred random but representative members of the public being chosen for interview. On the basis of the experience thus gained the questionnaire and the general design of the plan may need to be slightly amended. Its final form once fixed, after further consultation with heads of departments, an appropriate number of interviews are assigned to each part of the area to be covered, careful instructions are drawn up for the interviewers and, after they have been suitably coached, they are ready to take the field.

Interviewing—Success as an interviewer depends on the

possession of certain qualifications, in particular, an easy friendly manner which will encourage people to talk, coupled with the art of so directing the conversation that questions are answered without any prompting on the part of the interviewer. It is evident that she—for the interviewing staff of the Social Survey are usually women—must be thoroughly conversant herself with the general plan and purpose of the survey, and it is all the better if her interest in it is so keen that she infects others with her own enthusiasm. A confident approach is better than any sign of timidity, a sympathetic assurance that expects to get—and does get—co-operation.

In making a first call on a housewife, a brief explanation of the purpose of the visit should be given and it is important to state that those visited have been chosen entirely at random and that no names will be mentioned, the information given by different people being assembled together and used only to get the true facts about the matter investigated. When contact has to be made with workers at their place of work, it is always well to seek first an appointment with the manager to enlist his interest in person. It is a help to be able to ask for the right man by name; on such matters the local employment exchange manager can often advise.

It is essential in dealing with business firms to be punctual in keeping appointments, and to go straight to the point in explaining the purpose of the visit, stressing its authoritative and confidential character in asking his co-operation. The manager's convenience should be met in fixing the time for the interviews, and an indication should be given of the maximum time they will take; that time should not be exceeded and, before leaving, the manager should be thanked for his courtesy. If the manager's office or some other room is set aside for the interviews, as is desirable, tact may have to be used to see that nobody else is present and that the worker is put quite at ease before the real questioning begins.

The Questionnaire—Questions are of two types: those to which most of the expected answers fall under a limited number of anticipated heads, and those to which the inter-

viewer must record the replies as nearly as possible in the words actually used.

Examples of the second type are: What do you think of the job you are doing now? Why did you become a farmer?

To questions of the first type fairly precise answers can usually be given and these can be pre-coded; that is, to each possible answer a symbol is assigned beforehand, the available number of symbols for sorting on a Hollerith machine being twelve, namely, the numerals 0 to 9 and the letters X and Y. Each symbol has a row to itself on a card designed for use with this machine. The interviewer has therefore only to put a ring round the coded symbol corresponding to the answer given to any question by a particular informant. This saves the labour of writing. Examples of pre-coding are the following, the ringed numbers being shown in *italics*:

<i>Age in years</i>	18-24	1	45-54	4
<i>of informant</i>	25-34	2	55-64	5
	35-44	3	65 & over	6

	(1)	(2)
<i>How often do you go to the Cinema</i>	<i>Now</i>	<i>In the Summer?</i>
More than twice a week . . .	1	1
Twice a week . . .	2	2
Once a week . . .	3	3
Once a fortnight . . .	4	4
Once a month . . .	5	5
Less than once a month . . .	6	6
Don't go now, don't go summer .	7	7
Never go . . .	0	0

An occasional check on accuracy can be obtained by a differently worded question which should elicit the same information. With no intention of saying what is untrue, people may give a wrong answer as to what they did two or three weeks before, because they do not remember the event clearly enough. For example, if asked to keep a detailed record of even a week's expenditure, they may find it difficult, without prompting, to put down faithfully every item.

Standardization—Such experience as the Social Survey is accumulating leads to the adoption of certain standard definitions and classifications. This has the advantage of making possible the comparison of results in surveys of the same type. For instance, the social standing of a household is judged by the occupation of the chief wage-earner, the senior male in full employment (defined as “working 30 hours or more per week”). If the senior male is under 20 years of age, then the senior adult female in full employment is taken to be the chief wage-earner. If neither is in employment, the last occupation of either may be taken as a guide to social status. An economic grading is also used, households being classified according to the wage rate of the chief wage-earner, the wage rate being the minimum basic time rate for a week of 47–48 hours, including cost of living bonus but excluding production bonus and overtime; for those on piece work the wage rate is the normal amount earned weekly excluding overtime. A standard classification adopted for this economic grading is as follows:

Weekly Wage rate up to £3	Over £5 10s. and up to £10
Over £3 and up to £4	Over £10
Over £4 and up to £5 10s.	

In a pilot survey of, say, 300 schedules, the more obvious and frequently recurring answers are each given a code symbol, if not already coded, the rest of the answers being grouped together under the heading “Miscellaneous”. If, as more schedules are returned, this heterogeneous group is found to contain more than 5 per cent of the sample, it is advisable to go through it again to see if it is not possible to make additions to the code, some types of answer recurring more frequently than others and, therefore, justifying separate classification. Pre-coding is worth the extra time and trouble spent upon it, because even open questions have to be carefully studied when the schedules are completed, and the labour involved in this process is immense if the sample is a large one.

Mechanical Punching—When the answers given by each person interviewed have been recorded on a separate schedule, when these answers have all been checked, amended or completed where necessary, and coded, they are then transferred as holes punched in the appropriate spaces designed for them on Hollerith cards. One card may suffice for each schedule, that is, for each person interviewed; but more than one may be needed if the questions are numerous.

These cards are divided into 80 columns and each column can be punched with a hole in any one of 12 different rows, corresponding to the 12 symbols

Y, X, 0, 1, 2, 3, 4, 5, 6, 7, 8, 9.

If the questionnaire contained 80 different questions, and if to each question there were 12 possible answers (coded as above), then for each person interviewed a separate card could be prepared, showing a punched hole in some one of the 12 rows in each of the 80 columns on the card. In practice, there will frequently be fewer than 12 possible answers to a question. For instance, only 1 column and 2 rows are needed to distinguish the sex, M or F, of the person interviewed. Hence, by economy of design, one card can be used for recording answers to more than 80 questions. It is usual to aim at so designing the schedule that the questions appear as nearly as possible in the order in which they are asked. The lay-out of the coded answers, to appear as punched holes on the Hollerith card, is also important having in mind the machine work to follow.

Thus, the general principle throughout is that, corresponding to each answer to each question a hole is punched in a particular row and column reserved for that question and answer and for them alone. Also, there is a separate card or set of cards for each person questioned. The punching machine works like a typewriter, with a very simple keyboard and a key corresponding to each of the 12 different symbols, the letters Y and X and the numerals 0 to 9. After the punching is finished, the cards and schedules are passed on to a verifier who proceeds to repeat the operation of punching each card from its schedule,

but her machine does not actually repunch: it only ensures that the cards are punched properly, so that any answer incorrectly punched can be repunched. This check completed, the punched cards are then ready for sorting and counting.

Sorting and Tabulating—The counter-sorter machine can, at one and the same time, sort and count one column of the cards. It has a separate pocket for each of the 12 punching positions. Suppose the possible answers to a certain question in the Survey of Sickness are four, punched in Column 1 and coded as follows:

<i>Heavy Labouring</i>	<i>Moderately Heavy Labouring</i>	<i>Light Labouring</i>	<i>Not Stated</i>
Y	X	O	I

As the machine proceeds to work, the punched holes on the cards cause them to drop into their appropriate pockets. This is achieved by a system of brushes passing across the face of each card as it enters the machine, electrical contact being made at the punched hole. As the cards travel through the machine, so the score for each code automatically mounts up on the counting dial above it. We thus get a result such as this:

<i>Heavy Labouring</i>	<i>Moderately Heavy Labouring</i>	<i>Light Labouring</i>	<i>Not Stated</i>
1,332	432	421	30

these figures being recorded on the four counting dials.

The tabulator machine works on a slightly more complicated principle. It can count on more than one column of the punched card and add up the resulting numbers, so as to produce a printed table of the following type, breaking down the previous information by sex and age:

<i>Class of Labour</i>	<i>Total</i>		<i>Males by Age</i>						<i>Females by Age</i>					
	<i>Persons</i> <i>a</i>	<i>Illnesses</i> <i>b</i>	<i>15-34</i> <i>a b</i>		<i>35-64</i> <i>a b</i>		<i>65+</i> <i>a b</i>		<i>15-34</i> <i>a b</i>		<i>35-64</i> <i>a b</i>		<i>65+</i> <i>a b</i>	
Y	1332	2245	150	272	405	692	32	45	288	459	410	695	47	82
X	432	671	57	87	130	232	12	20	95	97	120	206	18	29
o	421	639	58	105	68	119	13	24	110	130	155	247	17	14
I	30	52	2	4	6	15	1	3	5	9	14	18	2	3
TOTAL	2215	3607	267	468	609	1058	58	92	498	695	699	1166	84	128

When the work has reached this stage, it remains to be seen what deductions, positive or negative, can be drawn from the figures, and these may suggest fresh tabulations, to test the possible association of other factors.

From the outline here given of the successive steps in the conduct of a social survey, with the technique and mechanical aids available to-day, it is clear that the research officer in charge must be in close touch continuously with all sides of the work from beginning to end. In particular, the process of interpretation goes on all the time from the moment the analysis begins. The directing officer is turning things over in his mind, having in view constantly the purpose for which the survey is made and parallel results obtained possibly in previous studies of kindred problems. He has the last word as to the choice of people to be interviewed, the questions to be asked, the analyses to be made or discarded because they prove unilluminating, as well as the deductions to be drawn concerning different aspects of the subjects of enquiry. This is the more necessary because, when the staff work is completed, it will be his responsibility to write the full story, embodying both a detailed description of method and a reasoned argument, based upon the tables, leading up to his final conclusions with any recommendations to which the conclusions clearly point.

In the next chapter, a short account will be given of a

fairly recent investigation made by the Social Survey staff, as an illustration of the type of research for which this comparatively new Government social research unit is designed. The intention is not to go into the details of the enquiry. Interest centres chiefly in the questionnaire, which is the effective starting point, and the sort of ultimate information it is capable of producing. These are the alpha and the omega of surveying. One cannot too often repeat that there is grave risk of the whole enquiry crumbling to pieces, because it is built upon shifting sand and not upon solid rock, if sufficient thought is not given, in the first place, to the design of the questionnaire—the questions to be asked, the precision of their wording, the types of answer they may elicit, the subsequent mechanical sorting and tabulation of these answers—and, in the second place, to the choice of investigators, and accuracy in recording and care in checking the information they obtain.

REFERENCES

- ¹ See p. 194.

CHAPTER XVI

SURVEY OF THE ELDERLY

Changing Population Structure—This survey¹ was made between May and August, 1945, at the request of the Industrial Health Research Board of the Medical Research Council. Recent statistical trends had suggested that, while the number of children in Great Britain would steadily decline in the near future, the number of elderly persons would fairly rapidly increase. In an analysis of the figures² the Registrars-General of England and Wales and of Scotland estimated that, assuming fertility and mortality to continue along the lines then experienced, the number and proportion of persons over 65 in the population would be about doubled between 1937 and 1971, that is, in the course of a single generation. The effects of such a structural change—decline of the young and increase of the old—on the life of the community, especially the industrial and economic consequences, were held to justify a more detailed enquiry into existing conditions among elderly people as a guide to possible future action. In particular, the Industrial Health Research Board wished to know in what occupations elderly men and women were engaged, and what were their hours of work, their pay, and their industrial record. As background to the picture particulars of the personal circumstances of all old persons, whether occupied or not, were to be collected.

How the Sample was Selected—Certain routine records were available concerning all men of age 65 and over and women of 60 and over insured under the National Health Insurance Acts. But the term "elderly", for this survey, was taken to mean all persons of 60 and over. This included many who had not been engaged in insurable occupations. In order to get a representative sample of 1,000 or more persons over 60 years of age, still at work, it was decided to aim tentatively in the first place at a random sample of 12,000

households. The advantage of this procedure was that comparison could then be made between elderly persons in work and those not working; also the "over 60's" could be compared in certain respects with the "under 60's".

The target of 12,000 households was first stratified regionally, in proportion to the population in each Civil Defence Region; and the interviews allocated to each region were further divided in proportion to the estimated population in towns of four different sizes: up to 40,000, over 40,000 and up to 80,000, over 80,000 and up to 200,000, over 200,000. A representative selection of towns of each size was made within each region. All this was done in exactly the way already described in explaining the choice of the Survey of Sickness sample.³ The houses to be visited in each town were drawn at equal intervals from local Rating Lists, a random list of substitute addresses being secured at the same time to make up for empty houses, absence from home, and other uncertain factors which might be discovered in calling at houses in the main sample.

In the sequel the target proved to be rather higher than was necessary and it was lowered to 11,276 households, which contained 35,941 persons living at home at the time of the enquiry. Certain checks on the validity of the sample were possible and showed it to be very satisfactory. For instance, comparison was made between the age distribution of the 35,941 persons sampled and the Registrar-General's mid-1945 estimate of the age distribution of the civilian population.

In the sample of 11,276 households visited, persons in employment of age 60 and upwards were found to number 1,571. Their names and addresses were noted in order that they might be revisited later in the year. When these second visits were paid, some of the elderly people had moved, others refused to co-operate, and all the ground could not be covered in the time permitted. The consequence was that the total of elderly persons, about whom more detailed information was obtained, only numbered 961. The age distribution of the original sample compared with that of the reduced sample was as follows:

<i>Age-groups</i>	<i>Per cent Distribution of Old Persons Sampled</i>	
	<i>At first visit</i>	<i>At second visit</i>
60-64	51	49
65-69	31	34
70-74	14	14
75-79	2	2
80+	1	1

The two sexes were sampled in correct proportion, but there was a slight over-representation of the age-group 65-69 and under-representation of the age-group 60-64 in the later sample. An occupational comparison showed that it also contained a slight excess of persons in the lowest economic grade.

Pre-coding Answers to the Questionnaire—A copy of the questionnaire used in this survey is reproduced at the end of the chapter. The pre-coding for the most part is self-explanatory. The housing classification descriptive of the type of dwelling is an exception, but reference to the text of the report shows that the code used was to be interpreted thus:

1	2	3	4	5
detached	semi-detached	terraced	block-flat	house-flat

The occupation and industry were to be stated as precisely as possible, and the classification was left to the indoor staff to avoid danger of error by the less experienced field workers. The broad groupings distinguished were as follows:

OCCUPATIONAL CLASSIFICATION

1. Labourers.
2. Operatives, unskilled, doing work of a routine or repetitive nature.
- ,, skilled and semi-skilled, such as fitters, turners, carpenters, bricklayers, machinists.

OCCUPATIONAL CLASSIFICATION

2. Operatives, non-manufacturing, such as caretakers, shop-assistants, transport workers, attendants, those engaged in personal or domestic service.
3. Clerks.
4. Managerial and Supervisory.
5. Professional and Technical.
6. Self-employed.

The household was the unit of enquiry, and for each household a separate schedule was completed. For example, information was sought as to the composition of the household: space was therefore allotted on the schedule for recording the relationship to the housewife of each member. By the devised scheme of pre-coding the sex, marriage state, and age-group of each member were readily distinguished. The schedule showed also which members were working and any who might be temporarily away from home, in addition to several other particulars relating to the house or its inmates.

When all the schedules had been checked, amended, and completed if necessary, and when any open questions had been coded, the stage was set for punching Hollerith cards and the sorting and tabulating could begin. The final analysis finished, a report was drafted giving an account of the findings under these heads:

The employment of old persons, describing their conditions of work and their attitude towards employment; *Their previous employment history*; and *Their personal circumstances*, whether still at work or not.

It may be useful to pick out one or two points of interest under each head, starting with the last, as examples of the conclusions reached. The reader should try to relate each conclusion to the relevant questions asked, to assess critically the kind of evidence on which it is based.

Personal Circumstances of the Old—The proportion of old people living quite alone was 11 per cent, 6 per cent of

the men and 15 per cent of the women. If these figures were representative, it may be inferred that the total number of elderly persons living alone in England and Wales in 1945 was about 600,000, nearly four-fifths being women.

The proportion living alone increased with age. It was 3 per cent for men in the age-group 60 to 64 and 10 per cent in the age-group 75 and over. It was 12 per cent for women in the age-group 60 to 64 and 19 per cent in the age-group 75 and over. Of the old women living alone 97 per cent, and even of the old men 82 per cent, did their own cooking.

The number of old people who were bed-ridden amounted to no more than 1 per cent of the total sampled, but 7 per cent were recorded as either unable or unwilling to go out of doors. On the other hand, 81 per cent of the women in the sample claimed to be active housewives, able to share to the extent of at least one-half in the house-keeping.

It appears that 62 per cent of the old people lived with younger folk, often grown-up sons and daughters; 93 per cent of them did not have to climb higher than the first floor to go to bed and 90 per cent made some payment for their accommodation. About a quarter of these—living mainly in the higher economic grades—gave no information as to what they paid. Those who gave particulars were recorded as paying less than 10s. a week.

Old Persons Still at Work—The proportion of men over 60 in the sample found to be still occupied was 53 per cent, and of women 9 per cent. Of all persons, both sexes combined, still at work beyond the age of 60, one-half were of age 60-64 and nearly one-third of age 65-69. The great majority over 75 had ceased to work.

The occupations in which they were engaged are shown in the following table, the number of men sampled being 1,261 and women 310.

One-fifth of the old persons were recorded as having been always in the same occupational group; a further two-fifths

OCCUPATIONS OF SAMPLE OF PERSONS AGED 60 AND OVER

<i>Occupational Group</i>	<i>Percentage Distribution</i>	
	<i>Men</i>	<i>Women</i>
Self-Employed	16	26
Professional, Technical, Supervisory, and Managerial	12	9
Clerical	6	5
Operatives, Skilled and Unskilled . .	12	6
Labourers	21	1
Non-Manufacturing Operatives . .	32	50
Unclassified	1	3

had not been in more than two groups. Between 80 and 90 per cent of the total sample were paid by time. The men in full-time employment worked on an average 45 hours a week and the women 48.

A question was asked to test how far old people continued to work because they wanted to do so, and how far they felt obliged to go on working for economic reasons. Of the 930 questioned, 54 per cent said they worked because they must, 25 per cent because they *also* preferred to work, and 20 per cent because they wished to work though there was no sense of compulsion.

Past Occupations of the Retired—For old persons of 60 and over not now at work, a record of their occupations over the past ten years was asked, so far as they were able to give it. It was admitted that the data, depending as they did on the memory and patience of elderly persons, could not be entirely accurate and were certainly not complete, but it was claimed that the broad outline was clear. In the following table the past occupations of the retired are compared with the actual occupations of those still at work. Men and women are combined, the total size of sample being 791 for the retired and 1,571 for those at work.

OCCUPATIONS, OR PAST OCCUPATIONS, OF OLD PERSONS

<i>Occupational Group</i>	<i>Percentage Distribution</i>	
	<i>Retired Persons</i>	<i>Persons still at Work</i>
Self-Employed	7	18
Professional, Technical, Supervisory, and Managerial	13	12
Clerical	6	6
Operatives, Skilled and Unskilled .	17	10
Labourers	17	17
Non-Manufacturing Operatives .	39	35
Unclassified	1	2

There is a higher proportion of the self-employed among those still at work, compensated by lower percentages of operatives, including the miscellaneous group made up of shop assistants, transport workers, and such as those engaged in personal or domestic service.

REFERENCES

¹ The report on this survey was written by Mr. Geoffrey Thomas under whose direction it was made.

² *Current Trend of Population in Great Britain*, 1942, p. 11 (H.M.S.O., Cmd. 6358).

³ See Chapter XIV, pp. 185-190.

THE EMPLOYMENT OF OLDER PEOPLE N.S.60

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Region	1	2	3	4	5	6	7	8	9	10	12
--------	---	---	---	---	---	---	---	---	---	----	----

Date .

i. *Economic Class of Household* 1 2 3 4 5 N.A.— 0

j. *Occupation of C.W.E.*

k. *Who is C.W.E.? (Relation to Housewife)*

if Yes, for how many hours per week?...

[illegible]

Code letter on Classification

- a. Pensioner?
 Yes . . . Y
 No . . . X
 If Yes what sort of pension?
 O.A.P. . . . 1
 Supplementary . . . 2
 Widows . . . 3
 Blind . . . 4
 Superannuation . . . 5
 Specify other . . .

- b. Any other source of income?
 Yes . . . Y
 No . . . X
 No A. . . 0
 If Yes—what?

III. PERSONS 60 OR OVER

- c. Householder?
 Yes . . . Y
 No . . . X
 d. Do you pay for accommodation? (i.e. Rent, Rates, Repayment)
 Yes . . . 1
 No . . . 2
 N.A. . . . 3
 If Yes—how much?

- and does this include:
 Full board . . . 4
 Partial board . . . 5
 None . . . 6
 N.A. . . . 7

- e. To Women Housewife?
 Yes . . . Y
 No . . . X
 f. Bedridden . . . 4
 Housebound . . . 5
 Neither . . . 6
 g. On what floor is your room?
 Basement . . . Y
 Ground floor . . . X
 1st floor . . . 0
 2nd floor . . . 1
 3rd floor . . . 2
 Higher . . . 3
 h. Live in Alms house . . . 6
 Special accom. for O.P. . . 7
 Neither . . . 8

- i. If you live alone, do you do your own cooking?
 Yes . . . Y. No . . . X. Don't live alone 0. N.A.
 and if Yes have you proper cooking facilities?
 Yes . . . 2 No . . . 3 N.A. . . 4
 j. Working Full-time . . . 6
 Part-time . . . 7
 Not working . . . 8
 If working Full or Part-time Occupation?
 No. of hours weekly
 Name of person 60+ years old and working

IV. EMPLOYMENT RECORD OF ALL PERSONS 60+ WHO ARE NOT WORKING NOW

- a. Have you worked during the last ten years? Yes 1 No 2 And if Yes, give details for each job below.

b. Occupation	c. Industry	d. Age Enter	e. Reasons for entry into occupation	f. Age Left	g. Reasons for leaving occupation	Codes
A.						
B.						
C.						
D.						
E.						
F.						
G.						
H.						
I.						
J.						

- b. Have you ever thought of returning to work? Yes Y. No N. D.K. 0. N.A. 1. And if yes, why didn't you?

WARTIME SOCIAL SURVEY EMPLOYMENT OF OLDER PERSONS N.S. 60/2

[illegible]

Town	Investigator	State	Date
..	..	..	..

Age last Birthday..	No. of Hours worked weekly
.....	

I. What do you think of the job you are doing now? (How does it suit you?)

Health Working Hours Pay Strain of Job Worry Eyesight Hearing Companionship

2. Employment Record

Occ.	Ind.	Town & County	Age Enter	Left
A	Reasons for Entry			
	Reasons for Leaving			
Occ.	Ind.	Town & County	Age Enter	Left
B	Reasons for Entry			
	Reasons for Leaving			
Occ.	Ind.	Town & County	Age Enter	Left
C	Reasons for Entry			
	Reasons for Leaving			
Occ.	Ind.	Town & County	Age Enter	Left
D	Reasons for Entry			
	Reasons for Leaving			
Occ.	Ind.	Town & County	Age Enter	Left
E	Reasons for Entry			
	Reasons for Leaving			

Occ.	Ind.	Town & County	Age Enter	Left
F	Reasons for Entry			
	Reasons for Leaving			
Occ.	Ind.	Town & County	Age Enter	Left
G	Reasons for Entry			
	Reasons for Leaving			
Occ.	Ind.	Town & County	Age Enter	Left
H	Reasons for Entry			
	Reasons for Leaving			
Occ.	Ind.	Town & County	Age Enter	Left
I	Reasons for Entry			
	Reasons for Leaving			
Occ.	Ind.	Town & County	Age Enter	Left
J	Reasons for Entry			
	Reasons for Leaving			
i	ii	iii	iv	v
			vii	viii
			ix	x
				xi
				xii

3. (a) Are you working because you must do so or because you prefer to do so?	Must Prefer it	Y X
(b) Why?	Must and Prefer it D.K. N.A.	0 1 2
4. (a) Are you paid by:	Time Piece Bonus System Other	Y X 0 1
(b) If OTHER, describe.		
5. What time do you leave home to go to work?		
6. What time do you get back home if you come straight from work?		
7. How long does each journey to or from work take you? Going? Coming Back?		
8. Is your present home Convenient or Inconvenient for your place of work?	Convenient Inconvenient D.K. N.A.	6 7 8 9
9. (a) How long do you intend to carry on working?		
(b) Why?		

APPENDIX

(THE following examples, some worked, some to be worked, are designed to illustrate matters discussed in certain chapters of the book. Reference should be made to the original sources quoted wherever possible.)

Chapter IV—(1) The reader will find it a useful exercise to attempt for himself the dual classification, by occupation and by means, of the families inhabiting Bendigo Street and Marble Street (North), without looking at that given in the two relevant tables but making use of any other information supplied in Chapter IV as to Booth's definition of classes.

(2) In the Appendix to the first paper contributed by Charles Booth to the Royal Statistical Society¹ will be found a table showing in thick type the figures which are the basis of his poverty estimate for Whitechapel. The other figures in the table have been calculated on the assumptions stated on pp. 43, 46 of Chapter IV. A few typical calculations should be checked, bearing in mind that an unknown allotment of adult males has been made to sections 1 and 2 from the unscheduled population.² An extract from the Whitechapel Table is reproduced on pp. 52, 53, Chapter IV.

Thus, if we omit sections 1 and 2 from the calculation, in view of the unknown allotment of males to them, the number of unmarried males over 20 and widowers in section 3, should bear roughly the same proportion to the total of unmarried males over 20 and widowers in all other sections, as the number of male heads of families with school children in section 3 bears to the total of male heads of families with school children in all other sections,

$$i.e. 174 : 8,776 - 795 - 973 = 143 : 5,932 - 45 - 228.$$

Chapter VI—(1)

AGE DISTRIBUTION OF OCCUPANTS OF RANDOM SAMPLES OF WORKING-CLASS HOUSEHOLDS, NORTHAMPTON AND READING, 1924*

<i>Age-Group</i>	<i>Number of Occupants in each Age-Group</i>	
	<i>Northampton</i>	<i>Reading</i>
Men over 18 . . .	1,137	1,121
Women over 16 . . .	1,299	1,259
Boys and Girls 14+ . . .	157	200
Children 5-14 . . .	502	572
Infants under 5 . . .	297	324
Number of Households	826	819

* The data of this table were compiled from figures given in *Has Poverty Diminished?* pp. 72, 75, 76, 120, 124, 125.

Make suitable calculations to compare the proportions of occupants in each age-group and also the mean number per household in each age-group in the two towns.

(2)

WEEKLY RENTALS OF HOUSES IN NORTHAMPTON*

(1)	(2)	(3)	(4)	(5)
<i>Weekly Rent</i>	<i>5-Roomed Houses</i>	<i>All Houses</i>	<i>Weekly Rent up to</i>	<i>Total No. of Houses of all sizes</i>
Up to 3s. 10d.	—	5	s. d. 3 10	5
s. d. 3 11 and up to 4 10	—	8	4 10	13
4 11 " " 5 10	22	69	5 10	82
5 11 " " 6 10	63	104	6 10	186
6 11 " " 7 10	88	117	7 10	303
7 11 " " 8 10	167	180	8 10	483
8 11 " " 9 10	98	108	9 10	591
9 11 " " 10 10	101	121	10 10	712
10 11 " " 11 10	36	44	11 10	756
11 11 & over	51	65	11 11 & over	821

* *Has Poverty Diminished?* p. 69.

The rentals table will serve to explain a method of estimating the *median*, a form of average frequently used by Bowley in his Five Towns Survey. Columns (4) and (5) are additional to those given in the book, Column (5) being readily obtained by successive addition from Column (3).

The median is defined as the rent of the middle house, in this case No. $\frac{1}{2}(821 + 1) = \text{No. } 411$, when they are arranged in order from the house of least rent to the house of greatest rent. If there is a card corresponding to each house, it is a simple matter to arrange them in order of rental, to pick out the middle card, and read off its rental. For an even total of houses there would be two middle cards, and the median would be taken as the mean between the rents of the two middle houses.

To estimate the median when the only information available is that shown in the table, assuming, that is to say, that there is no access to the cards themselves, use would then be made of the data as rearranged in the last two columns.

It would then be argued that, since the first 303 houses, arranged in ascending order of rental, run up to 7s. 10d. in rent, the rent of house No. 303 may be taken as approximately 7s. 10d; similarly, the rent of house No. 483 may be taken as approximately 8s. 10d. Thus, a difference of 180 houses in this part of the table corresponds to a difference of 12d. in rent.

Actually, we do not want to make a jump of 180 houses (303 to 483), but a jump of 108 (303 to 411) to reach the middle or median house.

If, then, a jump of 180 houses means an addition of 12d. in rent, a jump of 108 will mean an addition of $\frac{12 \times 108}{180}$ d. in rent

$$= 7d. \text{ approx.}$$

Since the jump starts from the rent of House No. 303, the *median rental* = 7s. 10d. + 7d. = 8s. 5d.

The reader might estimate for himself in the same way the median rental of 5-roomed houses in Northampton from the statistics given in Columns (1) and (2) of the table. He might also check the results for both 5-roomed houses and all houses

by the graphical method explained in Chapter VIII, Question 2. Further he might check the graphical results of Chapter VIII, Question 2, for median and quartiles by the method of calculation explained in this question.

(3)

DISTRIBUTION OF PERSONS IN RELATION TO ROOMS IN A RANDOM SAMPLE OF WORKING-CLASS HOUSES, STANLEY, 1923*

Number of Rooms	Number of Persons in each House															Total
	2	3	4	5	6	7	8	9	10	11	12	13	14	18		
	Number of Houses															
2	11	28	17	17	20	3	5	1		1					103	
3	16	42	47	52	38	15	12	4	2	4		1			233	
4	12	27	31	20	27	22	11	10	4	2	1	1			168	
5	3	5	8	5	1	7	3	6	2	3		2	1	1	47	
6				1	1		2	1		1					6	
7								1							1	
9								1							1	
TOTAL	42	102	103	95	87	47	33	24	8	11	1	4	1	1	559	

* *Has Poverty Diminished?* p. 171.

From the above table calculate the percentage of houses occupied by (a) more than 1 person per room and (b) more than 2 persons per room. Also calculate the percentage of persons living (c) more than 1 person to a room and (d) more than 2 persons to a room.

Chapter VIII—(1) Check the following prices of items in Bowley's standard food budget^a, as in October, 1928 and July, 1914, and the resulting cost of his budget at those dates, from data as to retail prices and the cost of living to be found in the *Ministry of Labour Gazette*. The figures in the second column relate to weekly consumption for an adult male. The figures in brackets in the last two columns were interpolated.

<i>Item</i>	<i>Quantity</i>	<i>Pence per Unit*</i>	
		<i>October, 1928</i>	<i>July, 1914</i>
Bread . .	10.40 lb.	2.125	1.49
Flour . .	1.10 „	2.21	1.50
Bacon . .	0.75 „	16.75	11.25
Meat . .	2.00 „	8.23	5.90†
Fat, lard, etc. .	0.30 „	(6.50)	(6.00)
Margarine . .	0.50 „	7.50	7.00
Milk . .	2.80 pt.	3.25	1.75
Cheese . .	0.75 lb.	15.00	8.75
Peas . .	0.20 „	(4.00)	(2.50)
Potatoes . .	2.50 „	1.00	0.68
Vegetables . .	0.50 „	(2.00)	(1.50)
Sugar . .	0.32 „	3.25	2.00
Tea . .	0.125 „	28.75	18.25
Cocoa . .	0.032 „	(32.00)	(20.60)
Coffee . .	0.023 „	(26.00)	(16.70)
Cost of Budget	. . .	7s. 6d	5s. 1d.

* The unit is a pound except for milk when it is a pint.

† Average of foreign only.

(2) By a graphical method estimate the lower decile, lower quartile, median, upper quartile, and upper decile wages for men of 20 to 65 years of age in the Eastern, Western, and Whole Survey Areas, respectively, and see how they compare with the results recorded at the foot of the table, obtained by direct reference to the original data.⁴ It will be noted that the mean wage in both Eastern and Western Areas is the same and rather higher than the median wage.

<i>Range of Weekly Time Wages</i>		<i>Percentage Distribution of Workers</i>			<i>Cumulative Frequency for Whole Area</i>
		<i>Eastern</i>	<i>Western</i>	<i>Whole Area</i>	
<i>Over</i>	<i>Not Over</i>				
<i>s. d.</i>	<i>s. d.</i>				
	34 0	3	4	4	4
34 0	37 6	1	1	1	5
37 6	42 6	3	4	4	9
42 6	47 6	4	4	4	13
47 6	52 6	11	8	9	22
52 6	57 6	12	15	14	36
57 6	62 6	17	18	18	54
62 6	67 6	13	10	11	65
67 6	72 6	11	11	11	76
72 6	77 6	7	7	7	83
77 6	82 6	9	8	8	91
82 6	87 6	3	3	3	94
87 6	92 6	3	3	3	97
92 6	97 6	1	2	1	98
97 6	102 6	1	1	1	99
102 6	112 6	0·4	0·4	0·4	99·4
112 6	112 6	0·2	0·3	0·3	99·7
122 6		0·1	0·2	0·1	99·8

	<i>L.D.</i>		<i>L.Q.</i>		<i>Med.</i>		<i>U.Q.</i>		<i>U.D.</i>		<i>A.M.</i>
	<i>s.</i>	<i>d.</i>	<i>s.</i>	<i>d.</i>	<i>s.</i>	<i>d.</i>	<i>s.</i>	<i>d.</i>	<i>s.</i>	<i>d.</i>	<i>s. d.</i>
Eastern Area	45	6	53	6	62	0	72	0	81	6	63
Western Area	44	0	53	9	61	6	72	6	82	6	63
Whole Area	44	6	53	6	61	6	72	6	82	0	63

The figures in the last column are obtained by successive addition from those in the preceding column. A similar procedure should be followed for both the Eastern and Western Areas. The following interpretation can be given to the figures in the last column;

4 workers earn wages up to approximately 34s.

5 " " " " " " 37s. 6d.

9 " " " " " " 42s. 6d.

and so on. It is therefore possible, on a suitably chosen scale, to draw a cumulative frequency graph, as it is called, marking off wages 34s., 37s. 6d., 42s. 6d. . . . along a horizontal base and plotting points at heights proportional to 4, 5, 9 . . . above these wage marks, showing approximately the wages obtained by the 4th, 5th, 9th . . . workers. If these points are joined up, a reasonably smooth curve will result, from which can be read off the estimated wages of any particular worker, *e.g.* the one who occupies a position one-tenth of the way from the bottom, the so-called *lower decile* worker; or the one who occupies a position one-quarter of the way from the bottom, the *lower quartile* worker; or the one who comes half-way along the scale, the *median worker*; and so on.

Given the raw material, the procedure followed would be to arrange the cards—assuming one card to each worker—in the order of the wages earned, from the one who earned least to the one who earned most, and then to pick out the middle card or cards as explained on p. 215 in dealing with Northampton rentals. Similarly, one could determine the lower and upper decile and quartile wages. This, presumably, was the method adopted to get the results given at the foot of the table on p. 218.

(3) In Bethnal Green⁵ the number of working-class families in the random sample was 1,280 and the sampling factor was 21 so that the total size of the "universe" from which the sample was drawn may be taken as 21 (1,280). The number of families housed at a density of 2 or more persons to a room in the sample was 396. Calculate the percentage of families one might expect to find accommodated at this density in Bethnal Green and its standard error. Interpret your result in terms of limits outside which it is unlikely the percentage would fall.

Chapter IX—Adopting the overcrowding standard laid down in the Housing Act of 1935, how many rooms would

suffice and of what minimum size should they be to accommodate a family of:

(1) Husband, wife, a child of 3, and a boy of 11;

(2) Husband, wife, a child of 3, boys of 7 and 11, and a girl of 13

without overcrowding?

Chapter XI—(1) A formula is given in a note at the end of Chapter VI for the standard error of a proportion due to sampling. Sometimes two samples are drawn from the same universe, or from like universes, and one wishes to know whether there is any significant difference between the resulting proportions in the two samples. The appropriate formula for the standard error of the difference between the two resulting proportions is then slightly different.

If n_1 is the size of the first sample, and p_1 is the resulting proportion, and if n_2 is the size of the second sample, and p_2 the resulting proportion, the standard error of the difference between p_1 and p_2

$$= \sqrt{\text{sum of sqs. of standard errors of } p_1 \text{ and } p_2}$$

If we may assume n_1 and n_2 small compared to the size of the universe from which each sample is drawn,

$$\text{the S.E. of } p_1 = \sqrt{\frac{p_1 q_1}{n_1}}$$

$$\text{and the S.E. of } p_2 = \sqrt{\frac{p_2 q_2}{n_2}}$$

$$\therefore \text{S.E. of diffce. bet. } p_1 \text{ and } p_2 = \sqrt{\frac{p_1 q_1}{n_1} + \frac{p_2 q_2}{n_2}}$$

To take a concrete example, suppose that in one particular trade out of 2,000 men of age 25 sampled, 400 die before they reach the age of 50; while, in another particular trade, out of 1,000 men of age 25 sampled, 175 die before they reach the age of 50. Is there any significant difference between these death rates?

We have $n_1 = 2,000$, $p_1 = \frac{400}{2,000} = 0.2$, $q_1 = 0.8$;

$n_2 = 1,000$, $p_2 = \frac{175}{1,000} = 0.175$, $q_2 = 0.825$;

$\therefore p_1 - p_2 = 0.2 - 0.175 = 0.025$

And S.E. of $p_1 - p_2 = \sqrt{\frac{(0.2)(0.8)}{2,000} + \frac{(0.175)(0.825)}{1,000}}$

$$= \sqrt{\frac{0.08}{1000} + \frac{0.1444}{1000}}$$

$$= \sqrt{0.0002244}$$

$$= 0.015^6$$

Hence $p_1 - p_2 = 0.025 \pm 0.015$

Since the difference between the two proportions is barely twice the standard error, which measures the amount of difference that might quite well arise by chance, we can say that it is scarcely significant.

(2) As another example of the application of this formula the reader might test the statement in Chapter XI, pp. 132, 133, that there was no significant difference between the proportion of acquired deafness among near relatives of the deaf and the proportion of acquired blindness among near relatives of the blind, the number of deaf persons sampled being 475 and the number of blind persons sampled being 845, the numbers with deaf and blind relatives being 12 and 31 respectively.

Chapter XII—Of the 8,905 industrial households who kept budgets of their total expenditure for four weeks, 2,100 kept also a detailed record of what they spent on clothing and footwear for twelve months. On this more reliable evidence the total average expenditure on clothing was estimated at 8s. 1d. a week. We thus have the following distribution of expenditure. Check the new weights shown in Column 3.

<i>Expenditure on</i>	1937-38		1914 <i>per cent</i>
	<i>Cost</i>	<i>per cent</i>	
	<i>s. d.</i>		
Food	34 1	40	60
Rent and Rates	10 10	13	16
Clothing	8 1	9½	12
Fuel and Light	6 5	7½	8
Miscellaneous	25 7	30	4
TOTAL	85 0	100	100

The question may be asked what difference would the new weights have made, if used in place of those shown in Column 4, in the Cost of Living Index. To answer this question we must make sure precisely what it means. If we are to maintain unchanged the pre-war standard of living and we want to compare the cost of the pre-war budget in 1914 and in 1937-38, the correct procedure is to weight the price changes of the items food, rent, and rates, etc., between the two dates as in Column 4. The means of the official price increases for the four dates nearest to the budget weeks, taken from the *Ministry of Labour Gazette*, were as follows:

Food, 42 per cent; Rent and Rates, 59½ per cent;
 Clothing, 110 per cent; Fuel and Light, 80½ per cent;
 Miscellaneous, 75 per cent.

This leads to the conclusion that the increase in the Cost of Living between July, 1914, and 1937-38 was 57 per cent.

But now, suppose we take as the standard of living that shown in Column 2, and ask what it would have cost to live at that standard in July, 1914, had that been possible. Food, Rent, and Rates, etc., would all have cost less, and the reduced cost can be readily calculated since we know that expenditure on food must be reduced in the proportion 142 to 100, and so

for each of the remaining groups. The resulting cost of the 1937-38 budget in 1914 turns out to be 52s. 9d. In other words, the average budget of 1937-38 cost 61 per cent more than in July, 1914.

There is, of course, one obvious weakness in the above comparison. The content of each group had radically changed between 1914 and 1937-38. There had been a change in quality and variety of food; there had been a decided improvement in housing; the range and quality of clothing and even the kind of clothes worn had altered enormously; electricity and gas for cooking had become far more common; but the most significant change of all was in the greatly enlarged miscellaneous group, which—as already pointed out—is probably one of the best guides we have to the standard of living.

One important conclusion is to be drawn from this example. It is not possible to maintain a strict and at the same time practically useful statistical comparison over a long period of years, because almost inevitably a change in kind as well as in quantity takes place in the process of time.

Chapter XIII—Orr gives tables of estimated consumption per head of certain foods in the United Kingdom at 1909-13 and 1934, and the food values of the same, as follows.⁷ Compare the percentage changes in the different quantities consumed and in their food value.

<i>Food Items</i>	<i>Annual Consumption per Head</i>	
	1909-13	1934
Wheat Flour	211 lb.	197 lb.
Meat	135 „	143 „
Eggs	104 no.	152 no.
Butter	16 lb.	25 lb.
Margarine	6 „	8 „
Cheese	7 „	10 „
Sugar	79 „	94 „
Potatoes	208 „	210 „
Other Vegetables . .	60 „	98 „
Fruit	61 „	115 „
<i>Food Value</i>	<i>Mean Daily Consumption per Head</i>	
Protein	86	87
Fats	99	124
Carbohydrates . . .	436	425
Calories	3,057	3,246

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¹ *J.R.S.S.*, Vol. L, 1887, pp. 326-401.

² *Ibid.*, pp. 373, 374.

³ *New Survey*, Vol. III, p. 429.

⁴ *Ibid.*, Vol. VI, pp. 78, 79.

⁵ *Ibid.*, Vol. III, p. 441.

⁶ This result can be read off from a table of square roots.

⁷ *Food, Health and Income*, pp. 24-25.

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NOTE.—Reference has been made in this handbook to a small number of works which embody the results of social research after the pattern set by Charles Booth. Many such works have appeared, particularly within the last ten or fifteen years. The above list includes, in addition to the more relevant books and papers mentioned in the text, a selection only of other studies and reports chosen as representing different types of survey. Some are more limited in scope than others and all are not social survey records, in the narrow sense of the term, but all have some special interest.

Besides research that is the result largely of private enterprise, a continuous stream of valuable material dealing with social conditions flows now from official quarters and the student should make himself familiar with these sources. Prior to the 1939-45 war a comprehensive *Guide to Current Official Statistics* was published each year, which was an indispensable pointer to material coming from Government Departments. The second issue, relating to 1923, gave also back references to the more important earlier official publications dating mainly from 1900. Each year too, under the title *Statistical Abstract for the United Kingdom*, the Board of Trade published a volume of statistical tables, covering a wide range of subjects relating to national affairs. It summarized in convenient form the more detailed figures to be found in various departmental publications. Also, the Ministry of Labour published periodically summary tables from official

sources relating more directly to the life and work of the people, under the title: *Abstract of Labour Statistics*. For more elaborate study it was necessary to refer to the *Consolidated List* of Annual Reports and occasional publications of the separate Government Departments. For current information about Government activities the *Board of Trade Journal* and the *Ministry of Labour Gazette* were, and still remain, two of the best sources available.

The publication of the *Guide to Current Official Statistics* has not yet been resumed, but most Government Departments have started again to issue their Annual Reports and other literature which ceased during the war. Also, the Central Statistical Office has now (1948) brought out an *Annual Abstract of Statistics*. This first post-war issue relates to the period 1935-46, and covers much of the ground surveyed in the pre-war Statistical Abstracts. At the end of the new Abstract will be found a most useful and well-arranged *Index of Sources* of all the data included in the tables, and the reader who requires a quick reference to Government Statistics relating to social conditions would be well advised first to consult this Index. In addition to the articles about current affairs to be seen in the *Board of Trade Journal* and the *Ministry of Labour Gazette*, the latest figures bearing on a variety of subjects are to be found in the *Monthly Digest of Statistics*, prepared by the Central Statistical Office since January, 1946. Under the auspices of an Interdepartmental Committee on Social and Economic Research, No. 1 of an important series of Departmental Guides to Official Sources has just been issued (1948) on *Labour Statistics*. All these official publications can be ordered through a book-seller from H.M. Stationery Office. Access to other material, such as the valuable reports prepared by the Social Survey, though not open to the general public, can sometimes be obtained by suitably qualified people.

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