SOCIAL STATISTICS
IN
BRITAIN
1830 - 1852

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Summary.

The purpose of this thesis is to discuss the statistical movement in Britain in the 1830's and 1840's. That movement sprang up in the early 1830's with the expansion of the government's role in collecting official statistics on social matters as well as the sudden appearance of a number of statistical societies throughout the country. Most of the societies were short-lived but their brief existence marks the period out as one of enthusiasm for social statistics in which much of the foundations were laid for the later development of British sociology. Yet the movement was a unit in itself, not simply a precursor.

The first chapter sketches the growth of social statistics in Britain from their genesis in the works of John Graunt and William Petty in the 1660's through to about 1830, covering the concentration of the eighteenth century on vital statistics, the growth of non-demographic social statistics, the inception of the census, the creation of graphical techniques, and the introduction and changing meaning of the term "statistics" itself. The second chapter discusses the passage of the Civil Registration Act of 1836 for England and Wales, a crucial development in the improvement of social statistics which arose out of the desire of religious dissenters (or some of them) to gain full civil equality. The succeeding five chapters are concerned with the statistical organizations, their foundation, personnel, activities, and varying fortunes.
Finally, the last five chapters deal with some of the statistical writings of the period.

It is the main argument of this thesis that the statistical movement was in many senses a failure, yet a failure in which there lay a coherent social philosophy. That philosophy rested on a precarious balance between an environmental and a moral view of the reasons for the condition of the lower classes. The middle class statisticians saw the remedy in a two-fold programme of educational and public health reform which would create a stable, self-reliant, hierarchical society. It was the aim of the statisticians to convert public opinion to this view by means of statistical surveys and arguments which were considered in some sense to be objective and incontrovertible. It is hoped that the reader will gain further knowledge about these statisticians, their organizations, their surveys, and their philosophy.
Preface.

As the summary implies, it is not my purpose to provide an introduction to and discussion of the sources for the social statistics of the 1830's and 1840's. Rather it is to delineate the main features of the statistical movement of those years, a movement which has been remarked upon by many recent historians as one of the distinguishing features of the period. My main intention has been to see how the movement organized itself, its achievements, and, from an analysis of the major surveys and writings of the members of the movement, to see if it possessed a distinguishing philosophy. Where it seemed particularly useful to do so I have also tried to comment on the accuracy of the figures collected.

It should also be made clear that this is not a study of all the people who produced works with quantitative material in the period but of those men who coalesced into a movement. This probably includes the great majority of the social statisticians of the time, especially in England, but it does mean that some surveys produced for particular purposes will not be mentioned. Moreover, a few men whose importance only begins in the late 1840's have been excluded. I have been concerned to describe a movement which began in the 1830's, flowered in the late 1830's and 1840's, but then began to wither, or at least change considerably, and may be said to have ended in 1852 when two of its leading figures died.
Many people have been of assistance in my work, but in particular I would like to acknowledge the help of Mr. I.H. Blenkinsop of the Royal Statistical Society, Miss Margaret Dowling of the University of Edinburgh Library, Professor M.W. Flinn and Mr. R.J. Morris of the University of Edinburgh, Professor D.V. Glass of the London School of Economics, Dr. J.R.B. Johnson of the University of Birmingham, and, finally, my mother, who typed this thesis and removed some of the solecisms.
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Abbreviations.

Apart from standard abbreviations (such as P.R.O. for Public Record Office) the following have been used:

App. Mins.: Appendix to the Minutes of the Manchester Statistical Society.


Diary: J.E. Drinkwater’s diary consisting of the minutes of the committee of the Statistical Section of the British Association for the Advancement of Science from June 1833 to March 1834.

GBPP: Great Britain, Parliamentary Papers.

JRSS: Journal of the Royal Statistical Society.

JSSL: Journal of the Statistical Society of London (superseded by JRSS 1887).


Local Reports ... Scotland: Local Reports on the Sanitary Condition of the Labouring Population of Scotland.

MCSSL: Minutes of the Council of the Statistical Society of London.

MLSC: Minutes of the Leeds Town Council Statistical Committee.

MPCCE: Minutes of the Privy Council Committee on Education.

MPDD: Minutes of the Protestant Dissenting Deputies.

MSSL: Minutes of the Statistical Society of London.

MUGC: Minutes of the United Committee on Protestant Grievances.

PEW: Charles Henry Hull (ed.), The Economic Writings of Sir William Petty together with the Observations upon the Bills of Mortality more probably by Captain John Graunt (Cambridge, 1899).


TPMSA: Transactions of the Provincial Medical and Surgical Association.

Trans. BAAS: Transactions of the British Association for the Advancement of Science.

"Statistics, the vogue in this age, though new only by name, constitute a science of facts presented under their natural relation, and vesting them with the character of evidence; but failing certain conditions, scarcely surmised by the fact-collectors who abound, it sinks into a science of deception".


"In most of the accounts which have come under our observation, whether proceeding from statistical societies, or from the Central Society for Education, it is impossible not to discern a kind of foregone conclusion ... in quarters where the professed principle is to "exclude all opinion", opinions to this effect are perpetually insinuated".

Chapter I

From Political Arithmetic to Statistics: 1660-1830.

It seldom occurs that there is something like general agreement about the precise chronology of the genesis of a particular discipline, even more rare that those origins should be seen as concentrated within a very short time span. For the statistical study of social problems there is agreement, only G.N. Clark dissenting from the conclusion that it began with Captain John Graunt and William Petty in the 1660's. This near unanimity might arouse suspicion but there is no need to indulge in an exercise in historical revision. Clark was perhaps justified in his belief that from the early Renaissance period in "England statesmen made an increasing use of commercial information we can hardly refuse to call statistical", 


but this is not enough justification for implying that the "political arithmetic"\(^1\) of Graunt and Petty "built higher a long-standing structure".\(^2\) The systematic collection of information with at least some pretensions to accuracy and, even more importantly, its analysis with a degree of quantitative skill is not to be found in Britain before the 1660's. When Graunt's *Natural and Political Observations on the Bills of Mortality* was published in London in 1662 it represented a new approach to the study of society.

Such novelty demands an explanation. The first point which comes to mind is that there is nothing natural in applying quantitative methods to social studies; it has only come to appear natural with the passage of time. Yet if we start from the assumption that the growth of quantification cannot be regarded as part of a deterministic pattern in the history of the social sciences then it soon follows that to "explain" the *Natural and Political Observations* is a very difficult exercise indeed (and one for which a historian of ideas would be better suited than a social historian). However, it seems reasonable to argue that explanations of this kind operate at two levels: the personal and the societal.

1. The term was invented by Petty and probably first used in a letter to Lord Anglesea dated 17 December 1672 (Charles Henry Hull (ed.), *The Economic Writings of Sir William Petty* together with the *Observations upon the Bills of Mortality* more probably by Captain John Graunt* (2 vols., Cambridge, 1899), I, p.234). The Hull collection is hereafter referred to as P
c2. Clark, op. cit., p.120.
At the societal level interest centres on the general trends in seventeenth century thought in England, especially those factors which have been picked out as crucial in the great flowering of science which occurred in the Restoration period. They are, however, the subject of long-continuing controversies among specialists. We may choose from a list of often mutually exclusive and contradictory interpretations. The most obvious possibility is the Baconian heritage of empiricism as championed by Jones and Purver.¹ The objection to Baconianism as a cover-all explanation is that empiricism implies fact collection in general, rather than the specific form those facts take (e.g. statistics). Most historians of science would probably agree with C. Webster that Francis Bacon's real importance to seventeenth century English science was as a kind of "totem" which provided psychological underpinning for the scientists.² Equally unable to supply a coherent theory of the forms of the ideas of the virtuosi is the notion that their origin is to be found in Puritanism (the most popular interpretation among sociologically orientated historians). The leading exposition of the neo-Weberite approach was made by R.K. Merton.³ Merton and the other writers in this tradition are faced with serious difficulties when dealing

with specific questions. The nebulosity of the answers is well illustrated by the following quotation:

"The Puritan insistence upon empiricism, upon the experimental approach, was intimately connected with the identification of contemplation with idleness, of the expenditure of physical energy and the handling of material objects with industry".¹

That overworked hobby-horse, the Calvinist doctrine of justification, palpably buckles at the knees in this instance. Moreover, the extreme view of Merton and the neo-Weberites has led to one scholar moving to the other pole. Lewis S. Feuer argued that the roots of seventeenth century science were to be found in a spirit of individualism, utilitarianism, and hedonism.²

Two more opinions may be noted. Lynn Thorndike has emphasized that a distinctive feature of the men of the seventeenth century was a craving for novelty.³ G.N. Clark, on the other hand, tried to ascribe to the period an early over-riding concern with pansophism and then "pantometry", "the belief that all things can be measured". This Clark saw as a natural outcome of the domination of mathematics,⁴ a domination which in some unexplained way was "fixed" by the importance of music in the seventeenth century.⁵

These theories have certain common features. They tend to be too ingenious and too dependent upon the skilful

1. Ibid., p.452.
5. Ibid., p.72.
use of language rather than content. They fail to provide a framework for the kind of case-study in which we are interested. Furthermore, whether or not their facts are reliable they border uncomfortably on the heresy that a descriptive generalization is an explanation. It follows that theories operating at the societal level are unsatisfactory. Consequently, we must return to the personal level if the first stirrings of social statistics are to be given any coherence. But here lies the rub: which person should we be investigating, John Graunt or William Petty? Although it is agreed that the Natural and Political Observations was the first statistical work of any significance it is not agreed that John Graunt wrote it. The reasons for doubt lie largely in the fact that Graunt was a London merchant who published very little else (and that on different topics) while his friend, William Petty, was a man of wide experience, successful, who wrote many essays and books on political arithmetic. Moreover, sections of the Observations closely resemble known works by Petty both in style and content. Finally, many contemporaries with good sources of information, such as Aubrey and Evelyn, at various times identified Petty as the author.¹

¹. The main support for Petty’s claims can be found in two works by the Marquis of Lansdowne: The Petty Papers (2 vols., London, 1927), II, pp.273-84 and The Petty-Southwell Correspondence (London, 1928), pp.xxIII-xxxII. Recently, the list of contemporaries citing Petty as the author has been added to in P.D. Groenewegen, "Authorship of the Natural and Political Observations upon the Bills of Mortality", Journal of the History of Ideas, XXVIII, 1967, pp.601-2. Groenewegen adds John Houghton and Thomas Hale but Greenwood had already noted the former (Medical Statistics, p.37).
On the other hand, the list of authorities who have
decided that Petty's role in the work was strictly limited
is an impressive one and includes all the important
economists, demographers, and medical statisticians who
have written on the subject.\(^1\) Their argument springs from
an underlying distrust of Petty as an intellectual gadfly,
a distrust which is backed by the obvious superiority of
arithmetical and demographic skills evident in the \textit{Observa-
tions} to those demonstrated in the known works by Petty.
The most which these writers allow to Petty is that he may
have suggested the work to Graunt, helped on a few details,
possibly wrote the conclusion and also persuaded Graunt to
insert what has commonly been called a life table.\(^2\)

1. General agreement on the nature of Graunt's primary is
to be found in the following works: Bernard Benjamin,
"Tercentenary of John Graunt's 'Natural and Political
Observations'; The Royal Society Meetings", \textit{Journal of
the Institute of Actuaries}, \textit{LXXIX}, 1963, pp.66-70;
Benjamin, "John Graunt's 'Observations', With a fore-
word", \textit{J.Inst.Act.}, XC, 1964, pp.1-61 (the foreword is
at pp.1-3. This is the only modern reprint of the first
dition and is cited hereafter as \textit{Observations}); D.V.
Glass, "Graunt's Life Table", \textit{J.Inst.Act.}, LXXVI, 1950,
pp.61-4; Glass, "John Graunt and his 'Natural and Poli-
tical Observations'", \textit{Proceedings of the Royal Society,
Series B}, CLIX, 1964, pp.2-32 (also in \textit{Notes and Queries},
XIX, 1964, pp.63-100); Greenwood, op.cit., pp.36-9;
Charles Henry Hull, Graunt or Petty? The Authorship of
the 'Observations upon the Bills of Mortality' (Boston,
1896) (appeared originally in \textit{Political Science Quarterly,
XI}, No.1, 1896, pp.105-32); Hull, "Introduction", \textit{PEW,
I}, pp. xxxix-liv; Robert Kargon, "John Graunt, Francis
Bacon, and the Royal Society: The Reception of Statisti-
cs", \textit{Journal of the History of Medicine}, XVIII, 1963,
pp.337-48; Shichiro Matsukawa, "The 300th Anniversary
of J. Graunt's Observations (1662)", \textit{Hitotsubashi Journal
of Economics}, XIII, 1962, pp.49-60; D.F. Renn, "John
Graunt, Citizen of London", \textit{J.Inst.Act.}, LXXXVIII, 1962,
pp.367-9; Ian Sutherland, "John Graunt: a Tercentenary

2. Hull, Graunt or Petty?, pp.130-2; Greenwood, op.cit.
In allowing this much Greenwood, Professor Glass, and the others have allowed a very great deal. As professional demographers and economists they are naturally swayed by the mastery of technique demonstrated by the writer of the Observations. Technique, however, is a minor matter compared with the creative intelligence required to conceive of an entirely new discipline. No one can deny that Petty was a poor arithmetician. Simple problems became complex in his hands, and the practicalities of calculations where "the algorithm is more operose, and when the stock is all the truth in nature that can be expressed in number, weight, and measure" were luckily scarcely ever entered into. Yet this does not seem a sufficient reason for elevating technique to a position of greater eminence than theory, especially at the foundation of a discipline.

The reasons for concentrating on Petty as the founder of British social statistics rest on a firmer base than just the fact that he may have suggested to Graunt the subject of the latter's essay. If Aubrey is to be trusted, Petty was discussing social statistics some three years before the publication of the Observations for Aubrey stated that Petty was putting his ideas forward at Harrington's Rota Club in 1659. Unfortunately, very little can now be discovered of this important body and Aubrey cannot be checked, though there is no cause to doubt him.

1. E.g. see Petty-Southwell Correspondence, p.319.
2. The phrase occurs in Petty-Southwell Correspondence, p.322.
Moreover, a list of Petty's writings dated 6 October 1671 in the manuscripts at Bowood includes the cryptic entry "1660. Observations on the Bills of Mortality". The presumption must be that Petty had already begun to develop his concept of "political arithmetic" well before the Observations were published. Indeed, another of the Bowood papers, which bears the date 1660-1, is entitled "Question of an Irish land registry" and warrants detailed examination for it shows how developed Petty's theories were at that early date.

In the paper he called for "Accompts of the Inhabitants" in order to discover the occupational structure of the population, the number of people transported in the Civil War - Commonwealth era, and the religious structure of Ireland's population. He also called for a general register of births, deaths, and marriages to collate the parish registers and thus help to reveal the numbers married, the age-structure of the population, the occupational and religious distribution, and the wealth of any particular area. The aim was to help the land-buyer, the effective administration of taxes, to let people know "whether we can live", the amount available for export, the number required to work and the means of rationalising production. A somewhat confused vision, admittedly, but one which demonstrates that by 1661 Petty had already formulated many of the basic principles and proposed procedures of the early phase of social statistics.

2. Ibid., pp.81-90.
Therefore, it is to Petty that we must look for the ideas which generated the statistical study of society. William Petty was born in 1623 the son of a small Essex clothier. He received some elementary education but at fourteen went to sea as a cabin boy. A broken leg resulted in his being left ashore at Caen where he studied for some years, probably under Jesuits. Another brief spell in the navy gave way to a much longer period as scholar, inventor, and amanuensis. It was in the last-named capacity that he made the acquaintance of Thomas Hobbes, serving him for a while as a secretary in the mid-1640's. By 1650 Petty was a Doctor of Medicine and a Fellow of Brasenose College, Oxford. Through the aid of John Graunt he became Professor of Music at Gresham College. In 1652 he went to Ireland where he was to become Surveyor-General, undertaking the famous Down Survey, and then secretary to Henry Cromwell. This period was the foundation of Petty's fortune. In 1659 he returned to London, managed to ingratiate himself after the Restoration with Charles II, and was active in the embryonic Royal Society.¹

By 1661, then, Petty was a highly successful man, a man on the make. Nevertheless, he had much to live down. He had served the Commonwealth well and in association with a Cromwell. His actions in Ireland had come

¹. There are two biographies of Petty in English: Lord Edmond Fitzmaurice, The Life of Sir William Petty, 1623-1687 (London, 1895) and E. Strauss, Sir William Petty (London, 1954). Both are competent but there is need for a fuller study by a specialist in the period making full use of the Bowood papers.
under attack from jealous and land-hungry gentry. He had been involved in the now disreputable Rota Club. He had been in contact with Thomas Hobbes. It may well have been Hobbes who set Petty on the path to political arithmetic. The "arch-atheist" had been interested in the applicability of mathematical methods to social and political analysis.\(^1\) A number of writers have agreed that this had a profound impact on Petty's thought. Lewis S. Feuer has referred to Petty as "an inheritor of the Hobbesian mantle" while Wilson Lloyd Bevan pointed out many years ago that Petty "follows Hobbes in assigning to mathematical proof the highest place" and that the only English philosophical writings on a reading list that Petty drew up for his sons were Hobbes's *Logic* and *De Cive*.\(^2\) Most recently Quentin Skinner has ventured the opinion that Petty's political arithmetic "was built out of studying Hobbes".\(^3\) It might also be remarked that Petty most likely derived his sensational psychology from Hobbes.\(^4\) In the study of society the primacy which Hobbes gave to geometry at some point became translated in Petty's mind to arithmetic and quantification.

2. For the list see Petty Papers, II, p.5.
4. For Petty's sensationalism see, for example, Petty Papers, I, p.165 where he stated that "Reason is only the addition or subtraction of Sensata".
In view of the fact that Petty is first reported as spreading his theories after his return from Ireland it would appear feasible that the surveying work in Ireland (with its unavoidable emphasis on the arithmetical aspects of geometry) was crucial in the development of his thought.¹

Although this hypothesis rests to some extent on pure speculation it has been dwelt on because it goes a long way towards explaining Petty’s coyness in not publishing earlier and his desire to test the acceptability of his studies via the less controversial figure of John Graunt. The early members of the Royal Society shared a determination to dissociate themselves from accusations of atheism. As Westfall has noted, "Thomas Hobbes, who was notorious in [the virtuosi’s] eyes as an atheist, did not apply and was not suggested for membership in the Royal Society".² In the tense political and intellectual atmosphere of 1661-2 Petty could scarcely afford to risk notoriety. Moreover, Petty was naturally cautious all his life over publishing his works, largely for fear of political repercussions; most were never published until the Marquis of Lansdowne produced the Petty Papers in 1921, while others were postponed for many years, some not appearing until three or four years after Petty’s death.

It seems reasonable to assume, therefore, that the Natural and Political Observations represented more than

¹. Strauss notes the importance of the Down Survey as the model for Petty’s later thought (op.cit., p.196).
the product of an off-hand remark as far as Petty's role was concerned. Graunt may have written the body of the work but the general framework and the whole conception were Petty's. The second dedication of the Observations, to Sir Robert Moray, President of the Royal Society, suggests Petty's influence with the studied ambiguity of its opening: "The observations, which I happened to make (for I designed them not)." This is not to dismiss Graunt from his honourable position in the history of social statistics. He was not the true founder but the Observations bear the mark of a man skilled in arithmetic, careful, judicious, and full of common-sense in his deductions. Without Petty it seems most improbable that Graunt would ever have written on the subject but had it been left to the former the finished product would have been inferior. As it was, social statistics emerged as a well-developed infant.

The Natural and Political Observations was an analysis of the London Bills of Mortality which formed the only readily available source of demographic data. From this unpromising material Graunt extracted a large number of

2. To be fair to Petty it should be remembered that any writer on statistical problems benefits greatly from independent criticism. Graunt had that from Petty but, as far as we know, Petty's writings never received such treatment.
3. The early history of the Bills is not known to any high degree of certainty. The evidence suggests that they first appeared in 1519. Until 1603 they were published spasmodically being intended as a means of information in times of high plague-risk. Continuous series were available from 1603 and from 1629 other causes of death than plague were listed.
conclusions including, as Hull said, some of the most important facts of vital statistics: the regularity of social phenomena, the excess of male over female births, the approximate numerical equality of the sexes, the high rate of mortality in the early years of life, and the excess of urban over rural death rates. More significant in many ways than the conclusions was the high degree of methodological skill. Before analysing any statistical data Graunt discussed its reliability. In other words, it was realized from the beginning that all social data were to some extent or other inaccurate, the question being whether they were accurate enough to justify further manipulation. While the searchers who examined the corpses were but "ancient matrons", Graunt was satisfied that the Bills were not entirely useless since "many of the casualties were but matters of sense, as whether a child were Abortive, or Stillborn". Similarly, "in case of a man of 75 years of a cough (of which had he been free, he might have lived to ninety) I esteem it little error (as to many of our purposes) if this person be in the table of casualties, reckoned among the Aged and not placed under the title of Coughs".

This was true for most diseases. Others, "which are aptest to be confounded and mistaken", needed to be studied further if their incidence was to be discovered. The secret of Graunt's method was the observation that,

1. PEW, II, pp.lxxv-lxxvii.
3. Ibid., p.21.
4. Ibid., p.22.
epidemic and malignant diseases apart, the others "bear a constant proportion unto the whole number of burials". ¹ Once this assumption was allied with an awareness that similar diseases were likely to be confused with each other then a powerful statistical tool had been forged. For example, Graunt found that very few were entered in the Bills as dying of the "French-Pox" (syphilis). This was because the parish clerks of St. Giles and St. Martin's alone were so blunt as to assign deaths to that cause; elsewhere they were put under "Ulcers" or "Sores" or the searchers might even "after the mist of a cup of ale, and the bribe of a two-groat fee" enter "Consumption" as the cause of death.²

In the same way the sudden appearance of "Rickets" as a cause of death in 1634 was not to be explained by the growth of a new disease but rather by the fact that "Liver-grown", "Spleen", and "Rickets" must be considered as one entry and it was a matter of chance into which category a death was put.³ The general increase in the proportional incidence of these diseases matched the increase under "Stopping of the Stomach" and "Rising of the Lights". Therefore, "it seems to me, that they depend one upon another".⁴

The power of the method of noting serial correlations came out most clearly when Graunt discussed the plague. He decided at first that 1603 had been the worst plague

1. Ibid., p.23.
3. Ibid., p.27.
4. Ibid., p.28.
year before 1662 since in that year plague deaths bore the highest proportion to total deaths.¹ But both 1603 and 1625 had the same ratio of burials to christenings (8:1). It followed that 1625 was as bad as 1603. To "reconcile these two positions, we must allege that in the year 1625 there was error in the accounts, or distinctions of the casualties; that is, more died of the Plague than were accounted for under that name".² In 1625 35,417 were supposed to have died of the plague and 18,848 from all other causes. The usual number of burials in the 1620's was seven to eight thousand. Therefore, about 11,000 died of the epidemic but were entered under other causes, the total plague deaths being 46,000 in 1625 or four-fifths of the total (roughly equal to 1603). From this Graunt drew the conclusion that in other years plague deaths may have been a quarter more than the Bills of Mortality indicated (he did not feed this conclusion back into the 1603 data which might have been an embarrassing procedure).³

The notion of criticizing and manipulating inaccurate figures was probably the greatest insight of the Observations and the part Graunt most likely had the major part in producing.⁴ Some other sections of the Observations, though equally well-known, were technically much inferior.

1. Ibid., p.31.
2. Ibid., p.32.
3. Ibid.
4. It should be noted how different this is from the empiricism of the fact accumulation type. The regularity of social phenomena was an assumption, not a deduction, in the Observations. The regularities were demonstrated by assuming regularities existed.
The observation that there were roughly the same number of men as women was a valuable one to make but it was also an obvious one. Of more interest were the practical conclusions drawn for government policy (such as the encouragement of marriage). Perhaps that section was written by Petty who was almost certainly responsible for the insertion of a section on "The Number of Inhabitants". This included an attempt to guess the age-distribution of the population from very unsatisfactory data. W.F. Willcox thought this too bold a step for such a cautious thinker as Graunt. The "life-table" itself was not intended primarily as a survivorship table but as a means of estimating the number of fencible men - Edmund Halley is more commonly regarded as the inventor of the life-table. The Petty-Graunt "life-table" rested on the totally incorrect premise that if forty per cent of a non-stationary population survived to sixteen and six per cent to fifty-six then thirty-four per cent of the population were aged sixteen to fifty-six.

The figures themselves were largely guesswork plus clever rather than reliable arithmetical manipulation. Whoever wrote the section fell into the trap of assuming a non-stationary population for the calculations. It was shown

2. Cited in Greenwood, op.cit., pp.32-3 and 38-9. Greenwood himself remained unconvinced because, like Halley, Petty would have seen "the epoch-making importance of an idea which was to transform the business of selling annuities" (p.33) if he had drawn up the life-table. Greenwood seems to have assumed that the principles of annuities in the 1660's were the same as modern ones (even in the 1690's Halley was decades ahead of his time).
that thirty-six per cent of the deaths occurred among children aged less than six from which it was assumed that sixty-four per cent survived to age six.\(^1\) However, it would be unfair to carry these criticisms too far. As the first serious writers on demographic problems Graunt and Petty can hardly be expected to avoid all the major pitfalls; the noteworthy thing is that they avoided so many. Though limited in scope compared with Petty's later writings the Observations remains one of the English classics of the social sciences.

* * *

"It may now be asked, to what purpose tends all this buzzing and groping?" Thus opened the conclusion to the Observations, very probably written by Petty.\(^2\) After offering the answer that such work was interesting in itself and that "there is pleasure in doing something new" he decided that he had to justify the new discipline in terms of utility. The purpose was to understand "true politics" or "how to preserve the subject in peace and plenty". A good knowledge of the numbers of "each sex, state, age, religion, trade, rank, or degree, etc." would enable the State to direct trade to the more profitable areas. It would also show how few were engaged in productive employments but were idle women and children, scholars, lawyers, soldiers, or traders in luxuries.\(^3\)

1. Greenwood was blinded to this point by his excessive admiration for Graunt (op.cit., pp.31-2).
3. Ibid., pp.51-2.
Despite the unpleasantly familiar ring of his justifications Petty was the most significant theorist of social statistics in Britain, at least until the heroic decade of the 1830's, and even then no single figure stood out with his overall view of the purposes and methods of social quantification. More than that, Petty was the first expression of a type to be found repeatedly in the history of social statistics: the reformer who saw the collection of facts as an indispensable preliminary to practical and effective reform. The facts he chose to collect, as with later statisticians, were designed to demonstrate the necessity and desirability solely of those reforms which he desired.

The range of possibilities mentioned in the conclusion to the Observations was no more than a slight advance on the ideas expressed in the "Question of an Irish land registry of 1660-1\(^1\) and another unpublished paper of the same year "The Registry of Lands, Commodities, and Inhabitants [for Ireland]\(^2\). In the latter Petty raised the question of relating the geographical spread of taxation to population.\(^3\) But after the favourable reception of the Observations Petty published the Treatise of Taxes. As with the conclusion to the Observations Petty's notions were unformed compared with their later exposition. Some of the arguments in favour of economical reform of the two unpublished papers were developed. The most original

2. Ibid., pp.77-9.
3. Ibid., p.78.
feature was the suggestion that reform would enable more resources to be devoted to increasing expenditure on public works programmes for the able-bodied poor.¹

Petty's other major work of the 1660's, the *Verbum Sapienti*, added nothing, but in a number of unpublished papers in the 1670's he foreshadowed most aspects of the schemes he proposed in the last four or five years of his life. In 1671 he thought of a plan for a "Registrar General of People, Plantations, and Trade of England". The Registrar General was to keep accounts of a wide variety of social and economic data and make abstracts which would give "the King a true state of the nation at all times".² Petty frequently reverted to this grand design and in the 1670's, years in some ways of unfulfilled promise for him, he came more and more to rest his hopes on social statistics. They were the means of bringing to politics that order which was being placed on the physical universe by Newton. Instead of being bedevilled by opinions and pre-judices politics would become a matter of facts. As he put it in a passage in his *Political Arithmetic* (written somewhere between 1671 and 1676 though not published until 1690),

"instead of using only comparative and superlative Words, and intellectual Arguments, I have taken the course (as a Specimen of the Political Arithmetic I have long aimed at) to express myself in Terms of Number, Weight, or Measure; to use only Arguments of Sense, and to consider only such Causes, as have visible Foundations in Nature; leaving those that depend on the mutable Minds, Opinions, Appetites, and Passions of particular Men, to the Consideration

1. PEW, I, pp.29-30.
of others ... Now the Observations or Positions expressed by Number, Weight, and Measure ... are either true, or not apparently false, and which if they are not already true, certain, and evident, yet may be made so by the Sovereign Power ... Nor would it misbehave Authority itself, to clear the Truth of those Matters which private Endeavours cannot reach to".¹

This passage, which may be regarded as Petty's statement of faith, ended with an implied call for the establishment of a census. In the last years of his life he elaborated his plans in numerous unpublished papers which show great maturity of conception.² The extent of demographic information that Petty thought it advisable to acquire was shown in one of his last papers, "Quaries concerning the nature of the Natives of Pensilvania" (1686).³ But his overriding concern, almost an obsession, was the establishment of a government agency and one undated paper, "Of Lands and Hands", showed an increasingly radical trend in his thought. A detailed study of demography would demonstrate the inequalities of parliamentary representation (an anticipation of his descendant, Shelbourne) and the small number of adult males who had the franchise. Control of the dissenters would be made easier by knowing their numbers. Investigation into the relationship between the number of marriages and the number of births and between the latter and the number of mothers would reveal the effect of suckling on fertility. Petty also returned to earlier themes: life tables would show

1. PEW, I, pp.244-5.
2. By no means all of the Petty Papers are mentioned in this chapter and even the Petty Papers are only a selection from the very large number at Bowood.
the value of estates for life and years; if the make-up of the working population were known then so was the scope for new trades; if the number of impotents then charity could be properly organized; the potential population growth would be deduced from the numbers married; information about the number of fencible men would help the organization of the armed forces and so on.

Petty began to see himself in the role of chief government statistician. Yet his own achievements in practice were severely limited. Petty was an incomparably greater man than Graunt in the breadth of his vision but he failed to produce any first-rate models or examples for later writers and it does not seem unlikely that those of his works that were published were more admired than read.

The major features of Petty's exercises in political arithmetic were a somewhat cavalier attitude towards facts, which were manipulated to suit the argument, and a reliance on over-lengthy chains of deductions from initially dubious material. However, although examples of these faults are easy to find, if Petty is compared with his predecessors (excepting Graunt) rather than his successors then he was

1. This question was first raised in the Treatise of Taxes (see FEW, I, p.45) and, pace Greenwood, shows Petty early appreciated one use for a life-table.

2. Petty Papers, I, pp.193-4. For similar views see "The Weight of Crownes, 1687", ibid., pp.263-4; "Magnalia Regni: Survey" (1687), ibid., pp.264-76; "Things to bee done by the King and his 4 Councills", ibid., pp.5-7; "The Method of Inquiring into the State of any Country", ibid., pp.175-8; "The Uses of the Booke mention'd by W.P." (1679), ibid., pp.172-5; and "The Application of the 5 Booke's to the King's Revenue" (c.1685), ibid., pp.184-7.

a master of statistical techniques and a paragon of carefulness. His main achievement was to lay out a grand design. In the terms used by Thomas S. Kuhn,\(^1\) Petty was a man who tried to establish the "paradigms" for a new science and also suggested most of the "puzzles" which it would be worth solving. Because he associated population with wealth and power the new science was intended to have demography at its core. Even so, it was not demography as such but a kind of hybrid of all the social sciences using quantitative techniques and its end was the production of what was later to be called "useful knowledge".

* * *

To a large extent Petty failed. Walter E. Houghton, talking of the English virtuosi in general, has referred to the period 1680 to 1710 as "The Decline of the Movement".\(^2\) Petty was scarcely a movement but therein lies the reason for his inability to found a school. There was no one to succeed him and the term "political arithmetic" became debased. Social statistics were confined within a narrow demographic channel.\(^3\) This is not to deny the real achievements of demography in the late seventeenth and eighteenth centuries. Demography, of all

3. This has largely been overlooked since the history of social statistics has usually been written by demographers or statisticians. G.M. Clark argued the eighteenth century failed to fulfil the promise of the late seventeenth (Science and Social Welfare in the Age of Newton, pp.142-6).
the social sciences, earliest, and perhaps alone, attained the status of what Kuhn would call a "normal science". However, we must not allow the still common "Whig" theory of the history of science (development by accumulation along a continuum) deceive us into thinking that the men of the eighteenth century were raising higher a structure begun by Petty.

The attempt to describe the situation of states in terms of demographic phenomena received further expression in the late seventeenth century from Pett, Davenant, and King. Sir Peter Pett's *The Happy Future State of England* of 1688 was not a competent piece of demographic analysis but it did adhere to the idea, central in Petty's thought, that power depends on population.¹ The thesis was elaborated by Charles Davenant for whom power depended upon trade, trade on production, and production on population.² Davenant did not produce himself any statistics but is remembered for his use of data from Gregory King.³ King's contribution to demography is well-known - his table on the numbers and wealth of each rank in society has gone beyond the realm of historical source to historian's cliche⁴ - but his work was not published in full until the

3. I owe this point to Professor D.A.G. Waddell of the University of Stirling.
second edition of George Chalmer's *An Estimate of the Comparative Strength of Great Britain* in 1802. King's intentions are not clear but the large amount of material on land and livestock suggests that he too was primarily concerned with gauging the nation's power. The demographic sections are renowned for their accuracy,¹ but it must be wondered how far this was due to luck.²

King's work, together with that of Edmund Halley two years earlier, indicates that the reduction of political arithmetic to demography was an almost instantaneous process. Halley was particularly important for he made the first serious attack on a problem suggested by Petty and Graunt - the construction of an adequate life-table. Halley was the first writer in English to place this in the context of life insurance and annuities. There was little impact on practical insurance schemes until the mid-eighteenth century but it did generate one of the most popular classes of early demographic investigations. Halley's essay was outstanding. He was the only seventeenth century writer to understand that the construction of an accurate life-table depended upon the concept of a stationary population. Either a stationary population had to be used or the figures adjusted in such a way as to allow for the criterion.³ Halley "had realized an

². Laslett, op.cit., p.245.
important truth which did not become part of even expert knowledge for more than a century. Unfortunately, Halley had to rely for his information on Caspar Neumann, an evangelical pastor of Breslau. Neumann did not appreciate the point and Halley's work suffered accordingly. Nevertheless, he managed to draw up a life table which was probably the best available for the next seventy years. The truly seminal part of the essay was the application of the table to the "Price of Insurance upon Lives".

Halley started a long line of investigations. Looking at the first eighty years or so they were not particularly numerous - perhaps a dozen major works. Even so, they followed a distinct pattern and constituted a definite genre. It must be emphasized that the effects of these early writings on the principles of life insurance were limited. As one study of public superannuation schemes in England between 1684 and 1859 points out, eighteenth/schemes were dependent more on rough and ready guesses than life tables. The first life insurance business to base itself on recognizably modern actuarial methods was the Society for Equitable Assurances for Lives and Survivorships which began in 1762.

The details of the early actuarial inquiries need not detain us long. One of the most interesting was also one of the earliest: Abraham de Moivre's The Doctrine of

Chances written before 1718 but published in 1724. De Moivre was a brilliant mathematician who applied probability theory to annuities with great competence. He was also the first person to describe a life-survivorship table in mathematical rather than empirical terms. He was soon followed by Richard Hayes who published a kind of actuarial ready reckoner in 1727. It was probably very unreliable but more readable than Weyman Lee's book ten years later which, nevertheless, had some worthwhile criticisms of other writers. In 1742 Thomas Simpson constructed a life table for London by adjusting Halley's table according to the Bills of Mortality. His work was something of an advance in another way since it was a combination of actuarial ready reckoner and a complete textbook of actuarial methods. A similar type of book was produced by James Hodgson five years later.

A general if uneven trend of increasing competence is discernible in these works, an improvement which was

1. Probability theory arose out of games of chance. In 1730-1 Daniel Bernouilli did significant work in purely theoretical discussions of insurance problems.
very noticeable in the most famous and popular of eighteenth century treatises, Richard Price's *Observations on Reversionary Payments* of 1771, Price introduced some new life tables: the Northampton tables in 1771, the Swedish tables in the fourth edition of 1783. In technical competence and completeness it was matched in the eighteenth century, if at all, only by the work of Price's nephew, William Morgan, in 1779.¹ With the publication of these two books and of Francis Maseres monumental but completely derivative text in 1783² the first period of actuarial investigations in Britain may be said to be complete.³

One problem which did not receive a great deal of attention in most of the early works was the reliability of the available life-tables and other demographic data. Some authors, notably Price,⁴ did discuss the question but the strongest doubts were usually expressed by others, notably those writing specifically on the bills of mortality in the Graunt fashion. However, as early as 1729 in a general description of London William Maitland included

3. One other work towards the end of this period should be mentioned: William Dale, *Calculations ... intended as an introduction to the doctrine of annuities* (London, 1772).
4. Price stated in 1779 that better tables were required for the Equitable Society since the ones they were using were based on the London Bills of Mortality which greatly underestimated life expectancy. Halley's table and the Northampton and Norwich tables were better, the best being the Chester tables of Dr. John Haygarth (see Price's introduction to Morgan, op.cit., pp.xv-xvi. Also see Price, *Observations* (5th edn., London, 1792), I, pp.320-68). By 1792 he felt the Swedish tables were best.
a short section on the bills in which he reckoned that apart from the 29,722 burials mentioned there were 3,038 Dissenters who did not appear because they were not buried by ministers of the Church of England. Thomas Templeman's A New Survey of the Globe made the same point.

One of the most comprehensive attacks on the state of the vital statistics records in the eighteenth century was made in two books by Thomas Short. He wanted to compare the incidence of mortality with the state of the climate and soil. He was hampered in this, not only by the lack of statistical techniques, but also by the deficiencies in many registers which were incomplete and unreliable. Apart from the carelessness of individual ministers major omissions arose from the fact that the parish registers were, according to Short, completely inadequate from the time of the rise of organized Dissent, which he placed at 1644. Even without the exclusion of Dissenters it must be questioned how far the registers were complete. Ralph Bigland in 1764 gave examples from what, in his opinion, was a fairly typical register. One burials page included such entries as "A prentice of Mr. Sliford", "Black John", "Gammer Mitchell", "An oul man from the W.H." with no mention of age, cause of death, or kin. These entries may be redolent of a more personal

world we have lost but their value demographically would be very limited.

By the middle of the century a rough consensus existed on the faults of the parish registers and the bills of mortality, a consensus expressed by William Heberden in 1759. Heberden repeated that the bills included baptisms only and thus omitted all Roman Catholics and nearly all Dissenters as well as those who died before baptism and many of the lower classes who were never baptized in any case. Much the same criticisms applied to the figures given for burials which also failed to include those carried out of London for burial.¹

One interesting feature of some of these works and of others was the way in which the authors' discussion of mortality rates led them to consider the possibility that those rates might be lowered. Indeed, the major effort to decrease mortality in the eighteenth century generated some early statistical studies both empirical and theoretical. This was the introduction of inoculation for smallpox in England in 1716-7.² Statistical studies of the effectiveness of this were begun by Thomas Nettleton who

¹ [William Heberden (ed.), A Collection of the Yearly Bills of Mortality (London, 1759), p.4. Some more original conclusions were made by Corbyn Morris in 1751. He argued that the divisions into ages in the bills were not small enough for infants and there was no break-down for all burials into age-specific rates for diseases. See "Observations on the Past Growth and Present State of the City of London in A Collection of the Yearly Bills of Mortality, pp.92-3.

wrote a letter to James Jurin, Secretary to the Royal Society, in June 1719.¹ Jurin took up the question and published a number of works in the mid-1720's which purported to show the effectiveness of inoculation by a comparison of the natural mortality from smallpox and that occurring from inoculation.² Genevieve Miller feels that the studies of the 1720's were largely responsible for establishing the respectability of the practice,³ although it should be noted that writers much later in the century found it necessary to defend inoculation.⁴ On a more theoretical level there was the question of assessing the effect on the overall mortality rate of the elimination of smallpox.⁵

The most common explanation of the high mortality rates of the time, especially those in cities, resulted largely from an anti-urban anti-luxury bias from which it may be argued the later public health movement partially sprang. Corbyn Morris in 1751 estimated the loss of life due to London for the period 1688-1750 at over 500,000.⁶

1. Ibid., pp.111-4.  
2. For example, see A Letter to the Learned Caleb Cotesworth, M.D. Containing a Comparison between the Mortality of the Natural Small Pox, and that given by Inoculation (London, 1723). This was one of the earliest instances of a controlled statistical experiment although Petty had suggested such experiments, for example one to show the (non-)effectiveness of doctors.  
4. For example, see John Coakley Lettsom, Medical Memoirs of the General Dispensary in London, For parts of the Years 1773 and 1774 (London, 1774).  
He had four main remedies: one public authority to carry out sewage disposal and the cutting of straight roads through the city into the countryside so as to provide fresh air and encourage exercise; foundling hospitals; the wealthy should reduce the number of their female servants; finally, an attack on the retail trades was suggested (in particular to remove hawkers who "solicit and enflame the pride of every farmer's wife and daughter in the kingdom"). The clergy were to take the lead in an onslaught on the gin trade. The strong anti-London tone is interesting in view of the provincial anti-urban bias of the early public health movement. The roots seem to lie well before the problems posed by an industrialized society became obvious.

Similar attitudes were expressed by Thomas Short in 1767. For Short the Restoration era saw the checking of London's increase by "the shocking Deluge and Prevalence of Vice, especially Swearing, Drunkenness, and Whoredom, and their Effects". Gin-drinking compounded these evils in the eighteenth century. The large cities were slaughterhouses weakening the nation. Short called the country gentry to encourage marriage, suppress vice and promote virtue, and "Mend the Air". That "mending the air" could be seen as a remedy points to the importance of prevailing notions of the causation of disease with their emphasis upon the dangers of the disease-causing exhalations from decaying animal and vegetable matter. This "miasma" theory

1. Ibid., pp.115-7.
2. Short, A Comparative History, p.25.
was to reach its peak in the writing of Edwin Chadwick and the Somerset House doctors in the late 1830's and early 1840's. As William Heberden saw it it was possible to reduce the quantity of bad air as was shown by the disappearance of plague in London consequent upon the post-Fire rebuilding which had widened the streets and reduced the density of housing. Also beneficial were the cleansing effects of the Thames and the New River.  

It was not a full exposition of a public health theory and little in the way of practical reform followed from the agitation of Heberden and the others, but they played a role in preparing the ground.

In terms of practical effects much the same might be said of the sporadic controversies on the level of population which flared up in the eighteenth century. Two of these were important in the history of social statistics. The first occurred in the mid-1750's. It began with a debate between William Brakenridge and the Rev. Richard Forster in the _Philosophical Transactions_ for 1754-5. Forster argued for an increase, Brakenridge

2. The major exception was Joseph Hanway's writings on mortality among foundlings and pauper children in London, especially _An Earnest Appeal for Mercy to the Children of the Poor_ (London, 1766) and _Importance of the Rising Generation_ (London, 1767). A reforming Act was passed in 1767. Pauper children were to be removed to the country after not more than three weeks and there were clauses tightening up the provisions of the codifying Acts of 1597 and 1601 relating to pauper apprentices in order to prevent exploitation. It would seem unlikely that such an Act could have been, or even was intended to be, effectively enforced.
for a decrease since a peak in 1728-43. The latter's theories produced a rambling but telling reply from G. Burrington in 1757. Burrington saw that Brakenridge had taken insufficient account of the effect of the omission of large numbers of Dissenters from the Bills of Mortality.\(^1\) This did not deter Richard Price from largely following Brakenridge's analysis in 1767, although he added that the trend had recently been reversed.\(^2\) Twelve years later Price returned to the subject. Using Davenant's works, which had been reissued in a collected edition in 1771, Price felt that there had been a decline in the population of England and Wales since Gregory King's estimates were made.\(^3\) This provoked two replies from William Wales and the Rev. John Howlett, the contents of which are sufficiently indicated by the title of Howlett's book.\(^4\) The dispute was an unedifying one which only served to reveal the insufficiency of reliance upon returns of assessable houses and the bills of mortality as indices of growth or decline. The few attempts to rectify such ignorance failed and before the last years of the century there

1. G. Burrington, An Answer to Dr. William Brakenridge's Letter concerning the Number of Inhabitants within the London Bills of Mortality (London, 1757).
4. William Wales, An Enquiry into the Present State of the Population in England and Wales; and the Proportion which the Present Number of Inhabitants bears to the Number at former Periods (London, 1781); Rev. John Howlett, An Examination of Dr. Price's Essay on the Population of England and Wales; and the Doctrine of an Increased Population in this Kingdom, Established by Facts (Maidstone, 1781).
was no more than a sporadic campaign for promoting such reforms as a national census.¹

* * *

In the fifty years from 1780 to 1830 some signs of expansion and diversification in social statistics began to appear. A national census was instituted, medical statistics unevenly but discernibly broadened into wider but more immediately applicable areas, new techniques of statistical analysis were discovered, while available techniques were applied to previously unquantified issues. Finally, the whole question of the inadequacy of available vital statistical data was re-opened. Yet seeds were often laid down which were long in germinating and even failed for lack of nourishment so that re-planting had to occur later. The range of material to be studied is wide - too wide to be properly encompassed within the short

¹. In 1753 a Bill - "Potter's Bill" - was given a second reading which aimed at taking a national census. Despite some support from the government the Bill was defeated on the basis that it was an attack upon the liberty of the people. In his speech William Thornton asked if members were "to amuse themselves with determining speculative questions, upon a mere possibility that in some future period of exigence and distress, the political arithmeticians might calculate, with greater facility, and the tax-gatherer exact the utmost gathering of a capitation?" [See Gentleman's Magazine, XXIII, 1753, pp. 549-52. For Potter's speech see pp. 499-502). The most important private attempt to take a census was made by Alexander Webster in Scotland some time between 1743 and 1755 but not published until J.G. Kyd's annotated version with an introduction appeared under the title "Scottish Population Statistics including Webster's Analysis of Population 1755", Publications of the Scottish History Society, 3rd ser., XLIV, 1952. The best scheme for a census of England and Wales before the 1780's was perhaps Arthur Young's Proposals to the Legislature for Numbering the People (London, 1774).
space allotted to it in this work and we have to confess to a failure to treat the period with anything like the breadth and depth of analysis that it requires.

In medical statistics the period opened with William Black's Observations Medical and Political, on the Small-pox\(^1\) which was both the culmination and full flowering of previous trends and a work of originality. Black was judicious for his time in the use of statistical material—a familiarity with the sources was combined with some scepticism as to their value and reliability as well as a desire to avoid the defect of many earlier writers who "have obscured their works in a cloud of arithmetick and calculation. Therefore the reader must have no small portion of phlegm and resolution to follow them through with attention; they often tax the memory and patience with a superfluity of figures, even to a nuisance".\(^2\)

Of particular value was a postscript wherein Black discussed the defects of the London bills of mortality. In a splendid phrase they were described as "Gothic ruins, which it is wasting time to prop and plaster". His own solution was a system of civil registration plus a septennial census.\(^3\) His suggestions were by no means impracticable but they were ignored. However, a few years later he sketched a plan for a national census.\(^4\) For Black disease was the product of a complex of environmental factors connected

1. 2nd edn., London, 1781. The first edition had been published the same year.
2. Ibid., p.195.
3. Ibid., pp.268-77. Black described a complete administrative machine for the task.
with the political, geographical, and social characteristics of a country. He was full of wise insights such as the warning (not heeded then or later) against mortality rates as indices of morbidity.

Black's last important work was perhaps the first application of the statistical method to insanity. He had few early imitators though Andrew Halliday produced a survey of the extent of insanity in Scotland. Another area in which a few studies appeared was the health of the armed forces. The outstanding figure was Gilbert Blane who first wrote on the diseases of seamen in the late 1770's and was to carry on for many years charting the progress of the health of the navy and supporting improvements on the basis of experimentally justified remedies (such as the use of lemon juice). The army was not so well served but one work of note was contained in part of a mammoth study on the occurrence of diseases in India by James Annesley published in 1828. Annesley was later to cooperate with the Statistical Society of London on the health of the army in India.

Blane in particular was an example of a type which began to increase in numbers somewhat towards the end of

1. Ibid., p.xx.
2. Ibid., p.63.
4. Andrew Halliday, Some Remarks on the State of Lunatic Asylums, and on the Number and Condition of the Insane Poor in Scotland (Edinburgh, 1816).
the eighteenth century: the man who used quantification to justify the introduction of particular reforms. Major Greenwood stated many years ago that all "the pioneers of Social Medicine based most of their arguments on statistical reasoning". This was particularly true of John Heysham at Carlisle who collected vital statistical data for that town and then campaigned for public health reforms. Another example was John Haygarth of Chester. At Manchester Thomas Percival took a leading role in the creation of the Manchester Board of Health in 1796.

These and other cases were, however, scattered and uncoordinated. The achievements in a practical sense of the provincial medical statisticians must remain open to serious question and it would be difficult to argue that, in the main, the first decades of the Industrial Revolution saw any significant growth of medical statistics beyond a continuation and elaboration of the trends of the previous century. It was not until the very eve of that efflorescence which in this book is called the statistical movement that medical and public health statistics began to show signs of moving into a new phase. It was in other ways that the period 1780 to 1830 was crucial.

3. E.g. see Sketch of a Plan to Exterminate the Casual Small-Pox from Great Britain (London, 1793).
One of the strangest of these was the introduction of the term "statistics" into the English language. This was to become a vogue word in the 1820's and later yet its meaning was only just becoming fixed and the process of changing definition was to go on to the end of the nineteenth century if not beyond. "Statistics" was almost certainly first used in English in 1770 in a translation of a German book. Following German usage the term was defined to mean the science which "teaches us what is the political arrangement of all the modern states of the known world". It may, therefore, be compared with the much earlier "statist" for politician or statesman. It was Bielfeld's opinion that Gottfried Achenwall (1719-72) had been the first to make the subject a separate science under the title of "statistics" and his opinion was repeated for many years thereafter. The Danish mathematician and historian, Harald Westergaard, described this as an over-simplification. Achenwall was the popularizer of the term but the notion of a systematic comparative study of states went back to Hermann Conring of Brunswick, a contemporary of William Petty. The discipline was otherwise known as "staatenkunde" and in some form or other could be traced back to

2. Ibid., III, p.269.
Aristotle of course. But during the eighteenth century it became a serious academic discipline in Germany with its own rules of procedure. However, at the beginning of the nineteenth century a dispute broke out between those who advocated the use of a synopsis in tabular form ("tabellenstatistik") and those who opposed the drift towards a quantitative emphasis.

It is not apparent that the dispute greatly affected the course of development of the term "statistics" in Britain. After Hooper's early use there was a gap until 1787 when a book by a German of the "tabellenstatistik" school, E.A.W. Zimmerman, was published in English. At the same time an Englishman travelling in Europe acquired a taste for "statistics" and determined upon preaching the German science to his countrymen. His book was not published until 1790 but it still marked a stage in the acquisition of a new word by the language. The next year "statistics" was firmly established in English by the publication of the first volume of Sir John Sinclair's Statistical Account of Scotland. This was not a work of statistics in the modern sense but in a looser version of the old German one. Sinclair defined statistical enquiries as those "respecting the Population, the Political Circumstances, the Productions of a Country and other Matters of State". Sinclair was so taken with the term and the

1. Ibid., p.4.
2. Ibid., pp.11-12.
idea it incorporated that he talked of sending "Statistical Missionaries" round the country.  

His advocacy was soon effective and the 1797 edition of the Encyclopaedia Britannica described "statistics" as "a word lately introduced to express a view or survey of any kingdom, county, or parish".  

This definition shows the impact of the Statistical Account for it was something of a debasement of the German usage.  

Somehow over the next thirty or forty years it became more and more accepted that statistics involved at least an element of quantification. As early as 1801 Benjamin Capper criticized Sinclair for being "too voluminous" and himself included a section of "statistical tables".  

But the definition of the word remained, in Daniel Boileau's phrase, "the knowledge of the existing political state of a country".  

Boileau, however, also stressed a concept that was to come to prominence: "statistics" were not dependent upon politics but were merely "facts".  

It was the union of the two ideas (brevity, possibly by the use of tables, plus objectivity) put forward by Capper and Boileau which may have determined the shift towards quantification. Statistics were facts in a condensed form which revealed the condition of a state. Yet as late as 1842 J.R. McCulloch rejected the idea "that everything

1. Ibid., p.xviii.  
2. Encyclopaedia Britannica (3rd edn., Edinburgh, 1797), XII, p.731.  
5. Ibid., p.61.
in statistics may be estimated in figures".¹ The contents of the Journal of the Royal Statistical Society would suggest that it was not until this century that "statistics" came to solely mean numbers and the methods of analysing numbers. In the early 1830's the term was still in a state of flux for while it had normally acquired a quantitative connotation this was still subsidiary to the main definition as "that department of political science which is concerned in collecting and arranging facts illustrative of the condition and resources of a state".² Bisset Hawkins in 1829 was very advanced in defining medical statistics as "the application of numbers to illustrate the natural history of man in health and disease".³ Against this example may be set works described as "statistical" yet obviously using the term in a non-quantitative sense. One quaint usage occurred in 1834 when the Broughamite Quarterly Journal of Education attributed to Napoleon a "great statistical error" in remaining in Moscow in 1812.⁴ Hence by the early 1830's a clear definition had yet to emerge. Even insofar as quantification was used

the techniques of statistical analysis were (outside actuarial science) relatively undeveloped. One technique of particular interest was the use of graphs and other visual representations. These had a strange history for they appeared in a well-developed form as early as the 1780's yet fell out of use again and virtually had to be re-invented in the 1830's and 1840's. Their first use was entirely associated with one man, William Playfair. Playfair was born in Dundee in 1759, the younger brother of the more famous John Playfair. 1 His first publication to include graphs was The Commercial and Political Atlas of 1787 in which the graphs were largely of British exports and imports to and from various places. 2 Eleven years later he produced his Lineal Arithmetic, a more complicated work with thirty-seven coloured graphs, one of which compared the movement of the balance of payments, exports, and the interest on the national debt. 3 The book was also notable for an explanation of the methods employed as well as a very modern justification of them in terms of the need in an age of increasing knowledge to "abbreviate and facilitate the modes of conveying information from one person to another, and from one individual to the many". 4

By 1801 Playfair came close to suggesting that statistical

4. Ibid., pp.5-8.
works should be limited to quantitative data. He also produced the first circle graphs and pie diagrams.

Unfortunately his example was not followed. H. Gray Funkhouser found no mention of Playfair's writing by an England statistician until Jevons in 1879. In the first fifty volumes of the Journal of the Statistical Society of London graphics appeared only fourteen times. The earliest example after Playfair that I have found was by Layton Cooke in 1827 with well-drawn coloured graphs of a number of economic indices. It was still a long time before graphs were widely used. In 1835 Charles Ansell produced some graphs of age-specific mortality and sickness rates recording the experience of various friendly societies. The same year John Rickman, the census-taker, also graphed age-specific mortality rates but did so by cramming no less than twenty lines into one small graph. Technical leadership had passed to the Continent and in Britain graphic representations were to remain crude and scarce throughout the 1830's and 1840's.

3. Ibid., p.294.
Progress, therefore, was very uneven in graphical techniques in the period 1780 to 1830. One achievement of that time does stand out: the creation of the national census in 1800. It has usually been assumed that the first census resulted from the publication of Malthus's thesis in 1798 on population and subsistence. The population controversy of the late eighteenth century had of course aroused some interest in the exact numbers. But insofar as one man was central that man was John Rickman, not Malthus. In 1796 Rickman, then an obscure twenty-five year old son of a Hampshire clergyman of lengthy pedigree but little fortune, wrote an essay in favour of taking a census. Rickman's M.P., George Rose, communicated the paper to Charles Abbott, the future Speaker. It was Abbott who proposed a Population Bill in 1800 (by which time Rickman was a rising young man in London). When the Bill had been passed Rickman was offered the job of supervising its execution and in a letter to Southey he claimed that the Bill had been passed at his suggestion. In a forthcoming article Professor D.V. Glass adds to Rickman's advocacy the influence of foreign example.

Yet neither Rickman's advocacy (dating from 1796) nor foreign example can explain the passage of the Bill in 1800. At first blush it would seem unwise to eliminate

3. Ibid., p.38.
4. I have to thank Professor Glass for allowing me to read this article in advance of publication.
Malthus entirely from the story for in his speech proposing the Bill Charles Abbott referred to the need to know the population "in times like these when the subsistence of the people is in question". However, Abbott was almost certainly not referring to Malthus's law but to the near disastrous economic state of the country. A few days after Abbott's speech one member moved for a select committee on the state of the nation. Indeed, "the present high price of provisions" was the first item in the King's Speech and had caused an early resumption of Parliament in November 1800, eight days before Abbott presented his Bill. One of Abbott's main arguments was the desirability of assessing food requirements "not only for the uses of the current year (for which it must necessarily come late) but also for the year that is to follow". The short-term character of the reasons for taking the census are apparent. The Bill was passed on 31 December 1800 and the census taken on 10 March 1801.

Rickman was in charge. The machinery he controlled was perhaps as well oiled as could be expected. In England and Wales the overseers of the poor, in Scotland the schoolmasters, were to make returns of the number of inhabited and uninhabited houses, the numbers of males and females, the number of persons mainly employed in

2. Ibid., col. 601.
3. Ibid., col. 495-6.
4. Ibid., col. 598.
agriculture, trade, and manufactures and handicrafts as well as obtaining from the clergy lists of the baptisms and burials for each tenth year from 1700 to 1780 and for every year from 1754 onwards.¹ That the census was inaccurate in the direction of not insignificant under-enumeration is well-known but we have little idea of the size of the error.² It is generally agreed that the next three censuses, which Rickman also supervised, were more accurate in total though Professor Glass enters a caveat that the change from the occupations of persons in 1801 to the occupations of families in 1811 probably increased the error under that head. Nor was the census of age in 1821 likely to have been very accurate. Moreover, Glass may be being over-optimistic about the 1801 census of occupation since Rickman later stated that there had been a confusion of persons and families in the returns which made them useless.³ Nevertheless, the foundations of a decennial census were laid even if the death of Rickman and the institution of civil registration made the 1841 census a quite different event (at least for England and Wales) from those of 1801 to 1831.

The census was not the only innovation of the early years of the nineteenth century in social statistics. National criminal statistics began to be published by the

1. 41 Geo III, c.15.
Home Office in 1810.\(^1\) Scottish figures first appeared in 1812 but regular returns did not start until the figures for 1832.\(^2\) The background to the initiation of the returns for England and Wales has not been studied in any detail but there is little doubt that the explanation is to be found in the contemporary controversy over capital punishment with reformers like Sir Samuel Romilly campaigning for a reduction in the number of capital offences. In 1809 Romilly was forced to withdraw a motion in the Commons for returns of the numbers committed for trial and their sentences upon a government excuse that it was not possible to provide the returns at that time.\(^3\) The next session Romilly introduced bills to remove capital punishment for some types of theft.\(^4\) As part of the campaign Romilly successfully moved for the same returns that he had called for the previous year.\(^5\) It was out of the particular issue of capital punishment, therefore, that national criminal statistics were born.

Once the figures were available arguments could begin over their significance. By the time of the 1828 Select Committee on Criminal Commitments and Convictions it could be agreed that most of the apparent increase in crime based on the rise in commitment was due to changes in the classification of criminal offences and to more effective

1. For the first returns see GBPP 1810 XIV. The returns begin with the figures for 1805.
2. See GBPP 1812 X and GBPP 1833 XXIX.
4. References to the debates over the bills are to be found in the reports for 1810 sessions but a fuller account is to be found in Cobbett's Parliamentary Debates, XIX (1811), Appendix.
enforcement rather than an actual increase in crime. 1

The Select Committee on the Police of the Metropolis came
to the same conclusion. 2 However, the latter committee
gave a startling proof of just how poor official arithmetic
could be in the late 1820's. A change from twenty to
fifty-two under one head became a decrease of 225 per cent.
Even more idiosyncratic was the method for working out
percentage differences. The years 1811-17 and 1821-7 were
compared by taking the average number of crimes per year
in each period, ignoring the fractions, subtracting the
difference, and then calculating the percentage change.
Thus in the first seven years no bills were brought in
in eighteen cases of crimes of violence or two per year
(ignoring the fraction). In the second period there were
thirteen or one a year. The decrease was one or fifty
per cent! 3 The official statistics of crime presented
ample scope for improvement.

The official statistics of education were rather
different for they were never put upon a regular basis
during the period covered by this work. Official surveys
and private ones co-existed and were perhaps of equal
importance. But the three national surveys - 1818, 1833,
and 1851 - were all "official" in one sense or another.
The private inquiries predate 1818 by some years though
as early as 1804 the Society for Bettering the Condition

   Rep., p.4; GBPP 1828 VI.
   GBPP 1828 VI.
3. Ibid., p.4.
of the Poor proposed a national investigation to the government.\footnote{Mary Sturt, The Education of the People (London, 1967), pp. 47-8.} The earliest work was undertaken by bodies like the British and Foreign School Society, the West London Lancasterian Association and even the St. Giles's Irish Free School. For some reason there was a flurry of such surveys in 1813 though the results did not become widely publicized until the 1816 Select Committee on the Education of the Lower Orders of the Metropolis.\footnote{See Education of the Lower Orders of the Metropolis. Sel.Ctte; GBPP 1816 IV.} In the same year the Select Committee on Children Employed in Manufactureries provided a forum for non-metropolitan societies and their endeavours.\footnote{See Children Employed in Manufactureries. Sel.Ctte; GBPP 1816 III.} These two Committees were the first of a series on education which reached their apex in the 1818 Select Committee on the Education of the Lower Orders. It was that committee, chaired by Brougham, which decided to institute a national survey of the means of education. Circulars were sent to all the parochial clergy in England, Scotland, and Wales.\footnote{Education of the Lower Orders. Sel.Ctte. Second Rep., p. 3; GBPP 1818 IV.} The returns were digested and printed in 1819.\footnote{See GBPP 1819 IX, GBPP 1820 XII.} Since the sources used were biassed, the basis of the returns unclear (attendance or number on the books, the inclusion or otherwise of dame schools), and there are no other surveys to be used as a check, the accuracy of the figures must be considered
highly suspect. Except for a private sample survey carried out by Brougham in 1828 little further happened until the flood of enquiries which forms part of the statistical movement proper.

Crime and education statistics were supplemented by other early exercises in social statistics such as those connected with the health of factory children which were uncovered by the 1816 factory committee. But these were spasmodic and of little value. It was in the long-established discipline of actuarial statistics that the most work was done in the 1810's and 1820's rather than in any more recently mapped areas of social inquiry. Concern grew about the existing vital statistical data and the deductions made from them. In 1810 and 1813 Francis Baily rejected William Morgan's book on contingent annuities as inaccurate.1 In 1815 Joshua Milne, actuary to the Sun Life Assurance Society, produced perhaps the best study of vital statistics until Farr. In it he took the material collected by John Heysham and deduced the Carlisle tables which were sometimes used thereafter in place of the Northampton tables.2 But even the Carlisle tables came under suspicion a decade later when Parliament examined the state of the friendly societies. Joshua Milne gave evidence and boldly rejected the available information on sickness and the number of

marriages and births as incomplete.\textsuperscript{1} There was also the still controversial issue of the supposed decline of the death rate to deal with. Traditionalists, like William Fremd of the Rock Life Assurance Institution, who wished to retain the Northampton Tables, had to argue that there had been no change in life expectancy.\textsuperscript{2} The more general opinion that there had been an increase was put by the government's own chief actuary, John Finlaison, who went so far as to state that "any society founding its calculation on the Northampton tables, must necessarily be insolvent".\textsuperscript{3} While the Carlisle tables were the best yet produced Finlaison felt that there were no completely reliable tables of mortality.\textsuperscript{4} Finlaison, Milne, and the other critics carried the committee with them and the report concluded that the rates of mortality and sickness in England were not "sufficiently well ascertained to justify a Parliamentary enactment of any particular set of Tables".\textsuperscript{5} Another committee two years later recommended in very vague terms "the adoption of measures for making an accurate and extensive collection of facts" for the construction of tables.\textsuperscript{6}

More precise solutions were also forthcoming. Francis Corbaux wanted a legally enforceable registration of births and deaths.\textsuperscript{7} He was followed by Bisset Hawkins who now

\begin{enumerate}
\item Laws Respecting Friendly Societies. Sel.Cttee. Mins.of Ev., pp.56-7; GBPP 1825 IV.
\item Ibid., p.87.
\item Ibid., p.59.
\item Ibid., p.91.
\item Ibid., Rep., p.17.
\item Laws Respecting Friendly Societies. Sel.Cttee. Rep., p.11; GBPP 1826-7 III.
\end{enumerate}
addition the possibility of registering the causes of death. All saw the major defect of the parochial registers as their exclusion of Dissenters – a defect which would have to be remedied if the registers were to be of any value in correcting the Northampton and other life tables. For John Rickman, by 1830 an obstacle to any form of innovation in vital statistics, a non-ecclesiastical registration of births and deaths could not be established in England. But it was not up to Rickman for the Dissenters, or at least part of them, were riding a growing wave of reform which had repealed the Test and Corporation Acts in 1828, was soon to strengthen their electoral power by the 1832 Reform Bill, and hopefully would sweep away their other grievances. Within six years of Rickman's statement one of the key institutions of the statistical movement, the civil registration of births, deaths, and marriages, had been created.

Chapter II

The Making of Civil Registration.

At first sight the passage of the Act for Registering Births, Deaths, and Marriages in England in 1836 and of its sister Act, an Act for Marriages in England,\(^1\) seems inevitable. The existence of the grievances of the large and influential Dissenting community forced to submit to the dictates of the Established Church if it wished to have its births and deaths properly registered and its marriages celebrated in a way recognized as valid in the eyes of the law; the generally admitted defective state of the parish registers; the desire of medical men, actuaries, and others to obtain better demographic data; these three considerations make the passage of the two Acts an easily comprehensible exercise in the politics of reform according to the usual rules of the second quarter of the nineteenth century - a parliamentary committee, massive petitioning, the conversion of politicians, a few abortive and unsatisfactory bills leading to the final achievement.\(^2\) Yet, as we shall see, the story is more complex than that.

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1. 6 and 7 Gul. IV, cc. 86 and 85.
The Acts of 1836 were the culmination of a long series of successful and unsuccessful measures considered by Parliament to regulate what were usually regarded as the separate problems of the marriage law and the improvement of the parish registers. The defects of the latter generated in 1812 an Act which tried to tighten up the slackness of the parish clerks though it ignored the other inadequacies of the registers. The measure had been so mutilated in the Lords that one clause of the Act imposed the sole penalty of transportation for fourteen years while another provided that one half of all penalties should go to the informer and the remainder to the parish poor. It is most unlikely that the Act wrought any significant change in the effectiveness of registration though at least one historian implies that it did. Meanwhile the legal situation regarding the registers was becoming more serious. In 1811 and 1820 two cases finally demonstrated that the Dissenters' registers were not even admissible evidence in law and in 1824 it was decided that Anglican registers could only be taken as evidence of baptism, not birth. The unresolved

1. 52 Geo.III, c.146. Usually known as "Rose's Act".
legal problems led to the introduction in 1824 of "A Bill to authorize the Establishment of a Metropolitan Register Office, for concentrating and preserving the Registers of Baptisms, Marriages, and Burials, in England". This was a limited solution which would have set up a central office for housing documents collected by the methods of the 1812 Act. The Bill never proceeded to a second reading.

Of much more moment for the future in 1824 was a Bill to change the marriage law. In the early nineteenth century marriages were governed by Hardwicke's Act of 1754 whereby, apart from those of Jews and Quakers, marriages could be recognized only if they took place under the auspices of the Church of England. The Bill of 1824 would have added Unitarians to the list of exempted groups. Unlike other Dissenters they resented the fact that the Anglican marriage ceremony forced them to subscribe to Trinitarian views so that the service became a mockery for the Unitarians and for the performing minister. The Bill had weighty support since it was moved by Lansdowne and backed by Liverpool, the Archbishop of Canterbury, and other bishops but it was killed by those who opposed any dismantling of the monopoly of the Established Church. Essentially the same bill was introduced into the Commons at the beginning of the next session by William Smith, parliamentary leader of the Dissenting interest and a Unitarian himself. In the speeches of Dr. Lushington and Peel the younger the idea began to emerge that relief to

1. See GBPP 1824 II, 671-80.
"tender consciences" on the marriage question could not be separated from an overhaul of the machinery for registration. One of the most radical suggestions was put out by Peel who felt that it was better to have "some proper office" to register Unitarian marriages than to force the Church of England to do so. But at that stage relief was to be limited to Unitarians and there was no hint that a national civil registration of births, deaths, and marriages was desirable. In the Lords the division on the second reading was the same as the previous year with Lansdowne, Liverpool, and the Archbishop of Canterbury leading those for and Eldon and the Bishop of Chester those against. The reading was lost fifty-two to fifty-six but only by the proxy votes which divided twenty-five to twenty against. Success within a short period was likely and although the Bill was not presented in 1826 in 1827 Smith got it through all its stages in the Commons against little opposition. It went into committee in the Lords but ran out of time with the early end of the parliamentary session in the confused state of politics that year.

Had the Bill passed it would be impossible to predict that within a decade civil registration would have been instituted. Splits were already appearing among the various bodies representing the Dissenters which were to weaken

1. Ibid., XII, coll. 1236-45.
2. Ibid., XIII, coll. 1025-31.
3. Ibid., XVII, coll. 1343-5, 1407-27.
them politically. With some concession to the Unitarians made there is no reason to assume that civil registration would have fallen so long before the other Anglican monopolies. As early as 1819 the most important custodian of Dissenting interests, the Protestant Dissenting Deputies, had declined to join the Unitarians in a campaign to change the marriage law. The Deputies consisted of delegates from the Baptists, the Congregationalists, and the Presbyterians for twelve miles around London. Usually they acted as the national representative of the Dissenters in political matters. In 1824 the Deputies once again showed dissensions within its ranks when a sanguine report by William Smith on the marriage issue was deleted from the minutes. The preoccupation with the Test and Corporation Acts from 1827 and the disinclination of any of the other Dissenters to fight purely Unitarian causes led John Wilks's Protestant Society for the Protection of Civil Liberty to decline in March 1829 to present any bill on Dissenters' marriages in general or give any special support to a measure for Unitarians alone. On the other hand, Wilks had shown an early interest in the question of registration. In 1826 he persuaded the Protestant

3. For the history of the Deputies see Manning, op. cit.
4. Ibid., p.273.
5. Ibid., p.272.
Dissenting Deputies to form a joint committee with his Protestant Society to review the problem. At the annual meeting of the Society in 1827 a new system of registration of births was called for, largely on the grounds of injustice to Baptists. However, little was done as both the Deputies and the Protestant Society were soon putting all their energies into the repeal of the Test and Corporation Acts.

Once this had been achieved movement could begin again in other directions. In early 1829 the secretary of the Protestant Dissenting Deputies, Robert Winter, prepared a plan for a general registration of births, deaths, and marriages and once again Wilks's society called for a reform of the registration of births at least. At the Society's anniversary meeting Wilks justified reform on the grounds of legal clarity and statistical value. But the main body of the Deputies lacked enthusiasm for this cause or were prepared to leave matters to others. A sub-committee set up to examine the possibilities decided to wait for the Royal Commission on the Laws of Real Property to act before themselves making a move. This lassitude may be partly explained, as Manning sees it, by political cunning but the suspicion must remain that internal conflicts were slowing the drive for united action.

Antipathy between Unitarians and other Dissenters had already reached a peak in Lancashire which, apart from

London, was the major area of Unitarian influence. There the leaders of Trinitarian Dissent were more militant than the politiques of London who were too close to Westminster for their own purity of soul. The problem in Lancashire was a simple one. In the eighteenth century the congregations known as Presbyterian had largely become Unitarian in doctrine as had the General Baptists. They continued, however, to use the chapels and trusts founded by more orthodox Presbyterians. With the extension of the Toleration Act to Unitarians in 1813 the latter were able to state more openly their views which many orthodox Dissenters regarded as heretical if not un-Christian. Opposition grew to the use by Unitarians of originally Trinitarian foundations and a number of protracted wrangles occurred which were not settled until the passage of the pro-Unitarian Dissenters' Chapels Bill of 1843.1 Meanwhile, the dispute had spread to London. Because of the necessity of presenting a united front to Parliament the Deputies tried to cohere but strains were showing. The Unitarians were little interested in the separation of Church and State but in the remedy of particular grievances, primarily the state of the marriage law. Many Trinitarians, even in London, found it less easy to divorce particular grievances from the general issue. Those that did set different priorities among the grievances. Over the next few years the various factions were in a state of constantly changing relationships. Luckily for the history of statistics the faction that wished to remedy grievances, starting with

1. Ibid., pp.53-93 for an anti-Unitarian account of the split.
registration, was always strong.

The first overt sign of conflict in London came in 1830 when the Unitarians' monopoly of the right of address to the monarch was challenged. Then, in 1832, William Smith retired and the major pacifying influence departed. Smith had already retired from Parliament in 1830 and John Wilks had assumed the leadership of Dissent in the Commons. As a Calvinist Methodist Wilks belonged to the Deputies more by courtesy than right and his real power base was the Protestant Society for the Protection of Civil Liberties. Wilks was no Dissenting Cobbett flailing at all and sundry but a highly astute parliamentarian. He realized that the separation of Church and State was scarcely practical politics in the 1830's. His natural inclination, therefore, was to work on piecemeal reform but he wished to carry with him the Unitarians whose priorities were too selfish for general Dissent. Relief for specific grievances, if properly packaged in terms of the rights of free-born Englishmen and the national interest, was in the realm of the possible. In January 1831 Wilks approached the Deputies' sub-committee on the marriage laws with a proposal for united action on a Unitarian marriage bill. Despite promising communications with the Bishop of London the project lapsed because of the opposition of Grey and the domination of political affairs by the Reform Bill.1 Although Wilks and the Unitarians were

1. Minutes of the Protestant Dissenting Deputies, VIII, ff. 2-4, 15, 17, 21-3, 52, Guildhall Mss. 3083. Hereafter referred to as MPDD.
later to differ on priorities the abortive bill of 1831 established his credentials in their eyes. As for registration, the Deputies decided again in January 1832 that this was to be left to Sir John Campbell’s Real Property Commission.  

Any plans that did exist went temporarily awry when Lord Nugent, a past supporter of relief for Dissenters, moved for leave to bring in a Bill for a general registry of births in February 1832. Nugent concentrated on the legal problems affecting all because of the dubious status of the Dissenters’ registers as evidence in courts of law. A number of members spoke in favour of the principle of the bill, including Wilks who also emphasized the legal aspect and the necessity of registration for "accurate statistical information". 2 As brought forward in March the Bill was very limited providing for a tightening up of the regulations governing parish registers. 3 The Protestant Dissenting Deputies considered the Bill in April and suggested amendments, most of which were inserted. 4 When the Bill finally emerged from the Commons it included provision for Dissenting ministers and rabbis to register the baptisms and burials of their own congregations, the books being sent annually to the churchwardens. Presumably this was what the Deputies were prepared to accept, in

1. Ibid., f.88.
3. For the various drafts of the Bill see GBPP 1831-2 I, 257-61, 265-9, 553-66.
4. MPDD, VIII, ff.74, 99.
1832, as a satisfactory measure even if they preferred a more general reform. The Lords rejected the amendments agreed to by the Commons and when Nugent moved for a recommittal he was persuaded by Sir John Campbell to postpone the measure so that a more adequate and better drafted bill could be submitted later. It had been a worthwhile trial for it was shown that if properly presented reform of parochial registration had at least a moderate chance of success.

Moreover, in arguing that Nugent should wait for a more satisfactory bill the Solicitor-General had not been being merely hypocritical. Campbell's Real Property Commission had on a number of occasions tried to bring Parliament's attention to the difficulties caused by the inadequacies of the parochial registers. In its first report in 1829 it had specifically recommended the institution of civil registration despite the lack of interest of most witnesses in the question. In 1830 it had distributed questionnaires which included a number of leading questions on registration. Over half of the responses were in favour of civil registration and the admission of Dissenters' registers, six alone out of seventy-seven being definitely against. Many, however, saw no need to connect this question with the more generally desired general registration of deeds. Support could, therefore, be expected from some legal circles but the initiative would have to come from elsewhere. There

1. Hansard, 3rd Ser., XIII, col.l.938-44.
2. Real Property. R.Comm.First Rep., pp.59-60; GBPP 1829 X.
3. Ibid. Second Rep. Appendix; GBPP 1830 XI.
could well be a division too over the options of reforming the existing system or of setting up an entirely different one: the newly formed Legal Examiner favoured the latter course in 1832, one of its correspondents the former.\(^1\)

The Deputies' hope of relying on the Commission was consequently ill-conceived and the first move would have to come from somewhere within the Dissenters' ranks. With the Reform Bill passed and a new Parliament in sight the Deputies set up in October 1832 a sub-committee to consider the marriage laws (the committee of 1831 that Wilks approached had presumably lapsed). The sub-committee was probably under Unitarian influence for it immediately decided to act in concert with Edgar Taylor, the legal adviser to the British and Foreign Unitarian Association.\(^2\) There is no reason to assume any overt dissension at this stage but it would not be pushing inference too far to see the Unitarians already beginning to move away from other groups in the Deputies. By the end of November contact had been made with the government and with Taylor.\(^3\) Shortly before Christmas a communication was received from the Congregational Board of Ministers who proposed to canvass the government. The same day it was agreed to buy the marriage bill Taylor had prepared for the Unitarian Association for £50 (not the phraseology used but the meaning is clear).\(^4\) The bill was considered on Boxing Day and a

2. MPDD, VIII, f.110.
4. Ibid., ff.125-6, 128.
circular letter to be sent to the local associations of Dissenters was approved which called for a flood of petitions.¹

Little further happened until February 1833. At the beginning of the month consideration of Taylor's bill was resumed and by 4 March it had been printed, considered by a general meeting, and amendments made.² It now seemed to be a relatively straightforward matter of getting the bill through Parliament while consideration could be given to the technically more difficult question of registration. In fact the fragile unity among the key London Dissenters had been blown apart. As early as 4 February the Independents had been meeting separately. Robert Aspland, a leading Unitarian, accused them in his diary of "striving to be considered by Ministers as the Dissenters".³ At the meeting of the Deputies of 5 March to choose a new United Committee to consider grievances battle was joined.⁴ The main issues are clear: the Unitarians wanted to limit action to specific grievance taking the marriage law first and separately. The one important Unitarian with extremist views was W.J. Fox, editor of the Monthly Repository, who was forced to admit that he was losing Unitarian readership because of his opinions.⁵ A strong section of the

1. Ibid., ff.139-41.
2. Ibid., ff.145-8, 151.
4. Ibid. p.533.
Trinitarians considered the time ripe for an all-out assault on the Established Church and did not wish to waste time on incidentals. Finally, there was John Wilks and the Protestant Society who soon explained their position as different from both groups in not wanting "to press forward urgently and instantaneously those grievances which do not appear most essential and which by their number and multiplicity might impede rather than lead to success". The Protestant Society wished to concentrate on registration and gaining exemption from poor rates for places of religious worship. After a long discussion the meeting produced some sort of compromise in that a United Committee on Grievances was set up "to take into immediate consideration all the Causes of Complaint".

The new committee drew up a list of six "practical grievances". The moderates, including the followers of Wilks, were stronger on this committee than among the Deputies at large for the order of the grievances was changed by the committee so that registration came first and the marriage law second. But the moderates needed to show some achievement if the extremists were to be outflanked. On 12 March the first petition was laid before the Commons but Richard Potter, the Liverpool Unitarian now M.P. for Wigan, wrote to a friend that he thought that the

2. Minutes of the Protestant Dissenting Deputies' United Committee on Grievances, I, ff.4-6, Guildhall Mss.3086/1, Hereafter MUCG.
3. MPDD, VIII, f.152.
4. Ibid., ff.155-6.
Dissenters were not alive to their interests and should petition concerning specific grievances. In this and another letter three days later he asked his friends to get the petitions flowing in. But the lead was not in the hands of Potter and the Unitarians so much as John Wilks. His addition to the Grievances Committee's sub-committee on the marriage laws in late March was a prelude to that sub-committee remaining largely dormant while concentration was fixed upon Parliament. Wilks now found himself in disagreement with the Grievances Committee, which wished to attack simultaneously the marriage law, while he kept advising delay. Without Wilks's direct backing the committee could do little more than indulge in a fruitless mission to Earl Grey in late May which secured nothing better than general promises.

Wilks was convinced that a united effort on registration alone could achieve a major success. But to beat the radical dissidents he had to persuade an overwhelmingly Anglican Parliament to spend time on Dissenters' grievances in what promised to be a packed session. His successful motion for a Select Committee on Parochial Registration on 28 March was a masterly exercise in a propaganda war fought on two fronts. Richard Potter could write to Hadfield and Grove, the Manchester solicitors who acted on behalf of

1. Potter Papers, XIII, ff.19-20 (Potter to Ralph Greenough); f.21 (Potter to Mrs Carpenter). These papers are housed in the British Library of Political Science and Economics (L.S.E.)
2. MPDD, VIII, f.162.
Dissenters, to tell them of the appointment of the Committee and to boast that "you would see that I have been advocating the claims of the Dissenters".¹ Potter was himself on the Committee as one of a brace of non-Anglicans including Wilks, Joseph Brotherton, Edward Strutt, M.D. Hill, and Charles Langdale (a Roman Catholic).

The Committee had in fact been chosen with care. Originally it comprised twenty-seven members, two more being added on 3 April, and one on 19 June.² Only two of the members were Tories - Henry Goulburn and T.G.B. Estcourt. Of the rest about half were considered to be Liberals or Radicals, the other half being more orthodox Whigs.³ A large majority in favour of reform was assured. Moreover, the Select Committee was a neat blend of the most important sectional interests. The Whig politicians were present in force: Campbell, Russell, Morpeth, Stanley, and Sir George Grey. Campbell headed the legal interest which included Romilly, Bonham Carter, Ewart, Godson, and Hill (Estcourt, Grey, and Wilks had also had legal training). Romilly, Wolryche Whitmore, and Hill provided a contact with the Cambridge Liberals; Romilly, Hill, and Strutt with the Philosophic Radicals. The industrial areas of the Midlands and the North, whose representatives were bound to remember Dissenting interests, were heavily represented.

1. Potter Papers, XIII, f.32.
2. For a full list of the Committee see Appendix I.
There was even an old-fashioned City of London radical, Alderman Matthew Wood, safely without "pretensions to talent".¹

This balancing of interests was indicative of the tactics which Wilks was to follow. The semblance of a coalition was to be created which would present the reform of parochial registration as not just a remedy for an injustice to Dissenters but also in the national interest. In his speech moving the appointment of a select committee Wilks played down the former aspect and highlighted the latter: "it is not of individuals but of the system I complain, and in these complaints how can the House or the country refuse to agree? Is there not a guardian or a parent who will not concur in my conviction, that such irregularities and imperfections should, ere long, disappear?" Baptisms were no proof of age, the marriage registers were better but implied a religious inequality, a general registry of deaths was needed for security of property and statistical information. The registers of four million Dissenters were not acceptable evidence, a deficiency which affected all. Finally, a trump card among reformers in the 1830's, Britain was behind the age. Holland, Belgium, Italy, Austria, and especially France were ahead -

"How little have we sought for accurate statistical information, or endeavoured, by attention to our

births and deaths, our diseases, and periods, and causes of mortality, such as correct registration would afford, to understand our real situation in many matters which a statesman should ever regard". 1

The Tory benches were silent. If this was part of the feared revolution by a Convention Parliament then it was unfair that the arguments should be so well-constructed and palpably correct.

The evidence before the Select Committee was suitably overwhelming in its indictment of the faults of the existing system. Favourable witnesses were allowed a free hand to make their points and, where they faltered, were firmly led to the right conclusions (presumably by Wilks who chaired all nine meetings). Out of 120 pages or so of evidence by twenty-seven witnesses Edgar Taylor's comments occupy twenty-two pages and those of J.S. Burn more than fifteen in three separate appearances. Finlaison, the York Herald, assorted writers on parish registers, and John Bowring (Bentham's disciple) all agreed to the advantages of some form of national civil registration. Bowring persuaded Adolphe Quetelet to attend, 2 and the great Belgian statistician duly expressed his amazement that England did not have adequate population documents. This had been a matter for discussion at the British Association meeting at Cambridge a few days before when the Statistical Section

2. L.A.J. Quetelet, "Notes extraites d'un voyage en Angleterre aux mois de juin et de juillet 1833", Correspondance Mathematique et Physique, VIII, 1835, p.15.
had been founded.¹

The sole opposition to the parade of favourable witnesses came, naturally, from representatives of the Church of England. The Vicar of St. Pancras was manoeuvred into acquiescing in the suggestion that the registers were defective and could be improved by the minister becoming a civil officer in fact if not in name. But he held out against registration of the cause of death on the grounds that "many families lose their friends from diseases they would not like to have publicly proclaimed".² Of stouter stuff was the Rev. William Hale, Secretary to the Bishop of London. While he was prepared to admit the incompleteness of the registers he could envisage no plan of reform acceptable to the Established Church. Civil registration was unthinkable and ministers could not be expected to register anything other than baptisms, marriages, and burials carried out according to the rites of the Church of England. That Church could not swallow its conscience so the Dissenters had better learn to digest theirs.³

Meanwhile, other pressure groups had made their views known. On 30 March a Dr. George Gregory of Marylebone wrote to the London Medical Gazette pointing out that Wilks had leave to bring in a bill for better regulating the registers (sic). Gregory suggested a campaign to ensure the insertion of the cause of death in the registers.⁴

¹. Parochial Registration. Sel.Cttee.Min.of Ev., pp.119-22; GBPP 1833 XIV. Also see below, Chapter IV.
². Ibid., pp.20-2.
³. Ibid., pp.36-44.
This was taken up in July at the first anniversary meeting of the Provincial Medical and Surgical Association (the forerunner of the British Medical Association). It was agreed that a letter should be sent to the Select Committee expressing satisfaction that the subject of registration was under review and saying that "great benefits might be expected to accrue to Medical Science, and consequently to the community at large, if arrangements were made for recording the causes of death in the provincial registers of mortality". ¹ A recommendation also came from the 1833 Factory Commission. John Elliot Drinkwater, co-founder of the Statistical Section of the British Association, referred to the difficulty of deriving accurate life tables which were essential to the secure establishment of superannuation schemes for the lower classes. He also ascribed to the lack of national statistics the belief that industrialization rather than urbanization was the cause of high urban mortality rates. ² Bisset Hawkins confirmed this and expressed the belief that effective regulation of child labour would be ineffectual without a more efficient registration of births. ³

Drinkwater's remarks (and the evidence of two witnesses in support of them) and the resolution of the Provincial Medical and Surgical Association were reprinted

¹ "Proceedings at the First Anniversary Meeting", TPMSA, II, 1834, p.xxix.
² Employment of Children in Factories. R.Comm. Rep.C.1, pp.7, 159-65; GBPP 1833 XX.
in the appendix to the report. The appendix also contained a number of suggested forms of registers for births, deaths, and marriages. The report itself was not entirely unanimous. It rehearsed the wide variety of interest groups which had been examined and recommended the institution of civil registration with a national office. Tinkering with the existing system was seen to be pointless; it was unfair to non-Anglicans, onerous to many Anglican clergy, incomplete and thus "even as to members of the Church it is detrimental and absurd". Its "vast expense, utter uncertainty, capricious charges" resulted in the production of no accurate statistical information. The point of divergence came over the issue of the appointment of registrars. Three possibilities were presented: a new local civil officer, the employment of the parochial clergy as civil officers, or the annual or triennial election of the registrar by the local ratepayers. As a final flourish the Report closed with a peroration on intolerance, the legal and statistical advantages of registration, the national honour, and political unity. Presumably only the most hard-hearted Church and King Tories were expected to remain unmoved by such an appeal.

The essential point had been made, not that there had been much doubt that it would be. Throughout the session petitions had been coming in from Dissenting congregations - the Mirror of Parliament lists around 120 to the Commons

2. Ibid., Rep., pp.3-11.
and thirty-three to the Lords - seeking redress of grievances concerning registration, marriage, and church rates. Far from being a heavy response this was very poor and suggests a small minority of Dissenting congregations were as yet interested in these specific grievances.¹ Civil registration had only just been placed on the agenda and could easily have been removed.

* * *

In retrospect Wilks might have been better advised to have moved straight ahead with a bill in the 1833 session instead of preparing the ground so thoroughly. The 1834 session was a bad one for Dissenting action. The government was weaker, the rifts among Dissenters much greater, and, in the middle of the session, Wilks himself became involved in a tedious dispute at the Moorfields Tabernacle which resulted in the severing of his links with any form of organized Methodism.² The order paper was as full as it had been in 1833. Finally, the government was growing disenchanted with the Dissenters.

This was brought about by the inability of the Protestant Dissenting Deputies to avoid making some general statement against the Established Church because of the extremists within and the solid sentiment for disestablishment in the provinces. In September 1833 a meeting at

¹. Significantly, the very moderate Wesleyan Methodist Magazine called for more petitions in May (3rd Ser., XII, 1833, pp.366-8).
Brighton threatened the Grievances Committee that if it did not act others would in order to put "forward the Question of a National Establishment as the main point". Although the committee rejected the report of the Brighton meeting it did urge petitions on grievances and the "unscriptural union" of Church and State. This aroused the fears of Aspland, another Unitarian, that such petitions would look like a "Declaration of War against the Church of England". Aspland realized that greater radicalism raised doubts about the strength of the Deputies' negotiating position and antagonized the Whigs who could be persuaded to chip away at the buttresses of the Establishment but were emphatically opposed to knocking the wall itself down. Hence when Earl Grey was approached in mid-January by the Grievances Committee he stated he was willing to consider particular grievances but no more.

An unsatisfactory compromise was worked out in the petition approved on 4 February 1834, in which a nod was made in the direction of disestablishment, while winks were given for registration, marriage, burials, admission to universities, and church rates. This failed to mollify the Whigs and when Aspland and Edgar Taylor went to see Lord Holland on 19 February they were informed that the Cabinet was displeased with "the violent party".

1. MUCG, I, ff.85-91.
2. Ibid., ff.95-6.
3. Ibid., f.105.
4. Ibid., f.125, 141-3; Manning, op.cit., p.387.
tried to remedy the situation by writing to Lord Holland on 4 March setting out the moderate viewpoint. The splits within the Dissenters were becoming so serious that Aspland sarcastically suggested renaming the United Committee "disunited". The Committee possessed "no common understanding, no confidence, disowned almost by the Government".\(^1\)

In March, pressure came from the provinces for a national meeting on disestablishment\(^2\) while a new Unitarian magazine, the *English Presbyterian*, made its first appearance incorporating a letter from the aged William Smith defending a policy of moderation and piecemeal reform. Consequently, the more moderate Trinitarians found themselves being squeezed in the middle and by the end of the year one of their leading spokesmen could describe the union with the Unitarians as "purely civil and secular" not religious, though still condemning the extremism of "some of our ortho¬dox brethren".\(^3\)

The final split of the "civil and secular" union could not long be delayed. It was perhaps hastened by the fact that the government had made its first move. The Unitarians in the Grievances Committee had at least managed to keep the marriage question to the forefront and leading Whigs such as Lord Holland and the Marquis of Lansdowne recommended action on this rather than registration in early February.\(^4\) Grey wrote a letter stating that a marriage bill was in preparation\(^5\) and Lord John Russell, the Home

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5. Ibid., f.160.
Secretary, moved for leave to bring in a Bill on 25 February. It was to avoid civil marriage. Dissenting ministers were to register their own marriages and send a copy to the (Anglican) registrar of the diocese. The Grievances Committee rejected the Bill immediately and over the next few weeks insisted on the need for a national, not sectarian, registration. In the Commons radicals like Hume, Buckingham, Ewart, and Faithfull lambasted Russell for separating the question of marriage from that of civil registration. Faithfull labelled it a "minute and contemptible measure". Their anger was understandable for passage of the Bill might have meant defeat for civil registration, at least in the foreseeable future. Russell lamely if justifiably replied that civil registration would "require much complicated machinery and compulsion". Within a week the first petitions against the Bill were laid before Parliament.

Russell persisted for a while. He wrote to the Deputies regretting their opposition and on 10 March the Bill received its first reading. Russell confessed it was inadequate and proposed to allow seven weeks for the Dissenters to express their views and indicated he was willing to abandon the Bill if the opposition was too great. Seven weeks were scarcely required for Potter immediately

7. Hansard, col.1400; Mirror, p.626.
wrote a letter condemning the Bill\(^1\) and the next day petitions were presented from the Deputies and others. In a short debate the Parliamentary Dissenters felt it necessary to apologize for the way in which the red herring of the separation of Church and State had been served up in the petitions but made clear their opposition to Russell’s Bill. On 28 April the Bill was abandoned and Russell consented to wait for Wilks to present a substitute.\(^2\)

It was the introduction of Russell’s Bill which had caused a raucous meeting of the Grievances Committee on 17 March for it strengthened the hand of the extremists by suggesting that worthwhile concessions on specific issues would not be forthcoming. Within the Committee the moderates largely carried the day and the cracks were papered over by calling for a uniform system of national civil registration, stated to be the prerequisite of an acceptable marriage bill, Wilks being thanked for his efforts.\(^3\) The Wilks policy had triumphed over both the Unitarians and the extremists. But outside further trouble was brewing up. In April the Congregational Union called for a public meeting to demonstrate for disestablishment.\(^4\) Wilks’s Protestant Society was unanimously against such a meeting and initially the Committee opposed it twelve to one.\(^5\) But the pressure from outside continued and the

4. MUCG, I, ff.185-6, 192-4.
5. Ibid., ff.196-200.
Deputies' own Publication Committee, which was more radical, started making arrangements. The Grievances Committee had no choice but to agree to the meeting as an "emergency". The meeting was held on 8 May and the Grievances Committee presented a report designed to demonstrate their continued activity.¹

The report was not unjustified. Even before the meeting of 17 March William Brougham had been approached about drafting a registration bill and concerting action.² As long as the extremists could be contained then it was possible to present registration as a national, not sectional, benefit. The magazines of the Dissenters continued to press the legal and statistical advantages of registration. They were supported by various statisticians and members of the legal profession. At the fourth annual meeting of the British Association at Edinburgh it was agreed to set up two committees of the Medical Section, one in London and one in Edinburgh, to communicate with the Statistical Section and the Statistical Society of London on any measure relating to the registration of deaths - "this desirable object".³ This was the kind of support Wilks sought and he had become a founder-member of the Statistical Society of London. More explicit support came from the London Medical Gazette in April which discussed the advantages fully, condemned "patch-work legislation", and advocated general compulsory legislation

1. Ibid., ff.206-7, 210-36.
2. Ibid., f.175.
"as leading to the adoption of well-organized plans of medical police".¹ In three articles in January and February civil registration had also received the support of the Legal Observer.² Further legal support came from Andrew Amos in his law lectures at London University.³

The wide backing for some reform, usually civil registration, was embarrassing for Anglican pamphleteers. As William Hale Hale pointed out, the Dissenters who were pushing for civil registration were glad to use the lawyers and statisticians.⁴ But this made it more difficult to avoid some reform. The young Disraeli, Henry John Rose, and even some of the more acrid pamphleteers were forced to admit the inadequacy of the existing system if not its injustice.⁵ This does not imply, however, that a bill acceptable to the mass of Dissenters would have been welcomed by many supporters of the Church of England. Civil registration implied the ending of the Church's monopoly and a further and not insignificant inroad into its position as the national religious body.

If the guardians of the Establishment were in some disarray the Dissenters were obviously more so. 1834 probably marks the end of any active united front on a legislative programme. It was an impressive end in one way for during the session well over a thousand petitions were presented to the Commons and over seven hundred to the Lords, nearly all of which followed the pattern laid down in February. Only a handful were presented in 1835 and less than a hundred in 1836. Even during 1834 the minutes of the Protestant Dissenting Deputies suggest a more passive role being imposed by the contradictions within and without.

Thus the timing and content of Brougham's bill were largely decided by him while the Deputies thanked the United Committee for its efforts. Brougham had drafted his bill in collaboration with J.E. Drinkwater, now legal counsel at the Home Office, and after consultation with Charles Babbage, the mathematician. Leave to bring in a Bill was not moved until 13 May which suggests that Brougham was mainly interested in preparing the ground for the next session. Brougham stripped away much of the national interest wrapping paper and based his case entirely on the desirability of remedying Dissenters' grievances when introducing the Bill. It provided for a general

1. The Commons Journal lists nearly 1200 to the Commons, the Mirror of Parliament under 1100. The Mirror of Parliament lists 734 to the Lords. The petition from Wilks's Protestant Society called only for civil registration.
2. MUCG, I, f.207.
registry office with inspectors and registrar-general appointed by the government. The local officers were to be drawn from the existing administration for taxation. Registration was to be compulsory and limited in time (event to be notified within three days, particulars within fourteen). There was no mention of the cause of death, either in the Bill or in the appended schedules.\(^1\) The second reading took place on 27 May and the Bill was committed on 11 June (no important amendments were made). There is an air of unreality about the rest of the proceedings for desultory discussions between Brougham and the Grievances Committee led to the suggestion by Brougham on 23 June that a committee should be set up to prepare marriage and registration bills for the next session.\(^2\) The Bill was in fact discussed and re-committed in early July with amendments made. The government was not prepared to back the Bill and with Brougham and the Grievances Committee looking to 1835 it lapsed. It was to prove in the light of events in 1836 a useful rehearsal of the drafting problems but it was becoming clear that nothing would be achieved until the government considered the time appropriate to introduce a satisfactory measure. At times the Grievances Committee still seemed more interested in the marriage question than civil registration so that there

\(^1\) A Bill to Establish a General Register of Births, Deaths, and Marriages in England; GBPP 1834 III, 459-77. For the Bill as amended on 11 June see 477-88 and for the recommitted Bill of 7 July see 499-520.
\(^2\) MUCG, I, ff.252, 258, 259.
was no reason for optimism at the end of the 1834 session. The trend of events and opinions was such that, at least for a time, civil registration might have gone the same way as general nationalization in the Labour Party in the 1960's, a mumbled incantation rather than a serious programme of action.

This was not so with reform of the marriage laws. Both Whigs and Tories (in the person of Peel) had accepted the principle of reform. Thus when William IV dismissed Melbourne in November 1834 and called Peel to office it seemed likely that a bill would be produced. A few Dissenters did not wait upon Tory providence - on 13 December Derby wrote to Peel on behalf of the Committee of United Dissenters of Manchester enclosing a petition to the King. Three days later Peel was reminded of the problem by a letter from what appears to have been a member of the Grievances Committee pointing out that "a timely communication with the Committee representing [the Dissenters] could disarm them from all opposition, and very probably lead to their support". It was a clever ploy. Peel had an unusual, eventually disastrous, ability to be persuaded by argument as well as a desire to settle potential sources of conflict by timely measures of statesmanlike reform. Within four days he had received a memorandum on the marriage laws from Lord Ellenborough and a number of other

1. For consideration of a draft marriage bill see MUCG, I, ff.263-4, 269, 270, 271-3.
3. Peel Papers (Borradaile to Peel, 16 December 1834), BM Add. Mss.40405, f.276.
unsigned memoranda, one of which included a general system of registration.  

It comes as no surprise, therefore, that the Tamworth Manifesto included a reference to a reform of the marriage law (but none to a reform of registration).  

With the election over Peel could consider the subject more seriously. Henry Goulburn was put in charge of the measure and told to shop around for ideas. Hobhouse, the middle-ageing radical, was favoured with Peel's evolving thoughts but the next day a letter to Goulburn implied that Peel's thoughts were far from settled and that Goulburn should continue to seek advice, especially from Edgar Taylor who "will give information or assistance". A draft bill was prepared the main provision of which was that Dissenters could marry by licence after a declaration of Dissent. Peel came to the conclusion that the best solution was a civil ceremony that was not labelled as such.

This was the substance of the Bill for which leave was moved on 17 March 1835. It was an uneasy half-answer to a reform of the marriage and registration laws that was worse than none and the Dissenting interests said so.

1. Ibid., ff.293-9.
4. Peel to Hobhouse, 7 January 1835; BM Add. Mss.40409, ff.208-10 (draft).
5. Peel to Goulburn, 8 January 1835; BM Add. Mss.40333, ff.233-4.
The declaration of belief by Dissenters was seen as an invidious distinction. In Parliament Wilks, Lord John Russell, Lennard, and Ewart all pointed out the lack of any change in the system of registration.¹ Peel had already made it clear that registration would not be considered, using the complexity of the issue as an excuse.² Peel's reform was in fact not timely or statesmanlike enough. An insufficient marriage bill would be bitterly attacked by many Dissenters and new strength injected into the demand for civil registration. But Peel's Marriage Bill of 1835 did not fail because of Dissenting opposition, nor did it fail because of the growing awareness that the registration and marriage laws would not be reformed separately: it failed because of the weakness and eventual collapse of the government. The legislative foundling was dumped on to the laps of the returning Whigs who killed it by overlaying it with the Municipal Corporations Bill. It finally disappeared in mid-July when there was no quorum to discuss it.

During this period of parliamentary activity the Dissenters had to a large extent been paralyzed by their internal feuds. The strongest objections Peel received came from provincial bodies.³ In London as late as 6 April, when the count over the unconscious Tory government had reached nine, the Grievances Committee had been content

2. In the Speech from the Throne (Mirror of Parliament, 1835, I, p.68).
3. See BM Add. Ms.40417, passim.
with calling the Bill "very questionable" and forwarding suggestions to its "friends in Parliament". The Committee expected the Bill to pass its second reading. The Committee's report on the Bill was not ready until mid-May when a deputation went to the government. It was as well that they should jog the memories of Melbourne and Russell for the first of the two drafts of the address to the Crown had not mentioned the Dissenters. The second promised to "remove all the well-founded grievances of the Protestant Dissenters", a broad enough phrase to cover a multitude of legislative sins. Russell enquired whether Peel's Bill should be dropped altogether, an extraordinary indication that the Whigs at that stage had no clear plans and were primarily interested in political advantage. The Committee's reply is unknown but the Bill lingered on for six weeks. It was obvious by now, as one speaker stated in the Commons in June, that a government measure on marriage and registration could alone succeed.

Whether there would be one was another matter and at the end of June the Grievances Committee demonstrated its frustration by threatening the government with severe consequences in the event of a general election if no action were taken. This was a crude attempted finesse rather than a lead from strength, especially since Melbourne and Russell were not planning a general election. However,

2. See Russell Papers, PRO, 30/22/IE, ff.90-3.
3. MUCG, I, f.324.
the same day Wilks managed to extract from Russell a promise that new bills would be introduced in the next session. Wilks may not have been entirely convinced for by the end of the session he was muttering dark threats in the Commons about the next session and moderation leading to no results. Wilks personally, more than the agent of a near-impotent collapsing body, was likely to influence the government. To a weak Whig government Wilks could be a serious nuisance. The Melbourne ministry needed all the parliamentary support it could manage and was not opposed in principle to the required reforms. But the ministry would continue to be guided by expediency. On the other hand, the Whigs must have been aware that the weakness of the Dissenters in 1835 was partially illusory since Wilks had allowed Russell's Municipal Corporations Bill to take precedence. It was time for the quid pro quo a shaky government could not defer long. With sentiment in the country moving away from the reforming high point of 1830 to 1833 it behoved the Whigs to satisfy their constituents. In this way the feeble hatchet-waving by the Grievances Committee on 29 June may have had some effect.

* * *

The last chapter, therefore, in the legislative story opened in late 1835. The government half-heartedly pondered. The Grievances Committee sent a draft marriage bill in

December.¹ But they were no longer the initiators of reform and the first sign of significant movement came in mid-January when Russell suggested that the Committee should consult with J.E. Drinkwater who was responsible for drafting the projected bills. Henry Waymouth, Edgar Taylor, and Richard Gale formed a sub-committee for that purpose.² The Committee did not play a significant role in the making of the civil registration and marriage bills, the Deputies as a whole none. The reason is plain – at the beginning of March the Protestant Dissenting Deputies finally split, with nearly all the Unitarians, including Edgar Taylor, seceding.³

Luckily the government was already committed for leave to bring in the Bills had been moved on 12 February and the Bills introduced five days later.⁴ The main innovation of the Registration Bill was the discovery by the government that the new Poor Law had provided, or at least was in the process of providing, a ready-made hopefully efficient local administration which solved what had been one of the more intractable problems of detail. The Registrar-General was to be a government nominee, the Registrars and Superintendent Registrars were to be selected by the Poor Law Commissioners. In general the Bill was the same as the 1834 one drafted by Brougham and Drinkwater with registration being compulsory. Even the names and dates

1. MUCG, I, f.329.
2. MUCG, II, ff.3-4, Guildhall Mss.3086/2.
in the proposed registers were the same and the sole important alteration was the administrative one.

With no more than a small core of opposition to the principle of the Bill, composed of Tory diehards, it might at first seem surprising that the Bill did not have an entirely easy passage. The main problem was the low priority the government in practice placed upon it with the Bill usually well down the order paper. When it came up for its second reading on 26 February it was pushed out by local questions of paving, drainage, and railways.¹ Thereafter it tended to hang on the tail of the Irish Municipal Corporations Bill and was wagged a number of times before it was read on 15 April. The committee stage was similarly protracted. It began on 18 April.² Further consideration was set down for 2 May but was postponed four times until 6 June when the Whigs made one crucial alteration whereby the local Boards of Guardians were to appoint the Registrars and the Registrar-General the Superintendent-Registrars (who oversaw the Registrars and directly administered the marriages part of the Bill).³ It is difficult to read into this action anything other than a desire to set up a vast new area of local patronage which would greatly strengthen the government. Nothing could be more indicative of the weakened state of Dissenting influence than this delay. On 16 May Drinkwater had been "too busy" to see the secretary of the Grievances Committee and a deputation was sent to Russell a week later to express concern

2. For the Bill as amended on 18 April see GBPP 1836 I, 329-47.
at governmental "apathy". ¹ A contributing factor was the absence of John Wilks from the Commons almost continuously from 22 April to the end of June. ² By then the Bill had finally passed all its stages in the Commons and without Wilks the Committee had been powerless to hurry things along or obtain alterations in it or the Marriage Bill.

During the next three weeks the Bill passed through its first two stages in the Lords. The one point of interest was an outburst by Lord Ellenborough during the second reading against the fact that registration "was required to be done just to satisfy the statistical fancies of some few philosophers, in order that they might know how many persons died, and how many were born in a year". ³ That particular idiocy caused the young William Farr to list in his journal the advantages of registration and note that "statistical calculations are supplied by intuition in profound statesmen like his Lordship". ⁴

The musings of a little-known young doctor with a passion for statistics would be irrelevant were it not for the fact that within a fortnight that same peer was to bring about a change in the Bill which greatly affected the work of the statistician. For Ellenborough was wrong

1. MUCG, II, ff.19-21.
2. Wilks was normally a highly regular attender. His name appears in one division list on 22 April but not in two later ones and in no other of the division lists until the end of June in the Mirror of Parliament. He presented petitions on 2 June and 17 June but did not speak and does not appear to have spoken from 21 April until 29 June. The Leeds Mercury reported him ill in its issue of 14 May.
in thinking that the Bill as it stood in early July represented the aims of the statisticians. At least for many medical statisticians the omission of the cause of death was enough to make the Bill much less than perfect. The analysis of causes of death on a national basis was coming to be seen as essential, an optional extra without which their new vehicle would be worth little more than the old parochial char-a-banc. The medical statisticians also felt it had been promised, for Wilks had been glad in 1833 to use this issue to gain support with the Provincial Medical and Surgical Association and the London Medical Gazette who saw the chance of obtaining information by virtue of the reform of parochial registration. As we have seen, they were backed in 1834 by the Medical Section of the British Association. Soon after the introduction of the 1836 Bill another writer in the London Medical Gazette pointed out the advantages of registering the causes of death and, in case Russell missed the article, wrote to him.¹

Despite this background of recommendations, and Drinkwater’s own still close links with statistics, the Bill remained unaltered. The government was not very enthusiastic about the Bill as anything other than politically advantageous and were not prepared to accede to what was very much a minority demand (before the 1833 Select

¹. Henry Belinage in London Medical Gazette, XVII, 1835-6, p.949 (12 March); Belinage to Russell, 17 March, PRO. H.O. 44/29. Thomas Wakley, editor of the Lancet, claimed he raised the subject in the Commons (Lancet, 1835-6, II, p.789). This was written after the Bill passed and is not corroborated by earlier evidence.
Committee Finlaison stated that he saw no need for actuarial purposes to register the cause of death). Once the Bill had cleared the Commons there was no reason to hope the cause of death would find its way in. That it did seems most likely to be explained by the fact that a serious conflict in medical politics came to a head in the late spring and summer of 1836.

It is this crisis which probably accounts for the extraordinary phenomenon of Ellenborough moving an amendment in the committee stage in the Lords on 21 July whereby the cause of death was inserted in the draft death register. This was agreed to in the Lords when the committee stage was reported and remained in the Bill through the last minor amendments. Ellenborough could only have done that as a favour for someone else. As S.E. Finer has pointed out, that someone was Edwin Chadwick.

Chadwick was a late adherent to the statistical cause. His article on insurance in the Westminster Review in 1828 in no way foreshadowed the development of a coherent plan of civil registration. The major influences which caused him to change his views on this particular topic are unknown, but it might be relevant to note that his colleague Southwood Smith had published a book in 1835 in which he castigated the "extraordinary indifference recently

manifested by the legislature in relation to the proposed measure for securing a better registration of births, marriages, and deaths", since such a measure would be of great benefit in framing a public health policy.¹ As late as 3 July 1836 Chadwick wrote a letter to Russell in which he condemned the Registration Bill without mentioning the necessity of including the cause of death. His sole concern was with the changes that had occurred in the Commons in the administrative machinery. In Chadwick's view, to allow the Boards of Guardians to appoint the local Registrars would lead to inefficiency, unnecessary expense, and jobbery. Moreover, the Guardians were likely to appoint local officers of the Poor Law Unions who would be unfit for the task and who would be distracted from their work on pauperism.² Apart from this letter there is one other source which might give direct evidence for Chadwick's views at this time. After the Registration Act was passed he had his 1828 article reprinted (again anonymously) with new footnotes which gave a more prophetic look to his 1828 views. The preface is dated 12 September and despite a confused last footnote referring to the "Bill now pending" there is no reason to assume that it was not written until after the passage of the Bill.³ The Act was "pending" in that it was not in operation. Consequently the advocacy of the accurate registration of the causes of death in the

2. Chadwick Papers, Chadwick to Russell, 3 July 1836; University College, London.
last footnote must date from the first half of September. In early July Chadwick's concern was with control by the Poor Law Commission, not with public health schemes.

Yet we know with a fair degree of certainty that some time between 11 July, when Ellenborough attacked the Bill, and 21 July, when he foreshadowed a number of amendments carried a week later, Chadwick and he had had an interview. This had been at the suggestion of Frankland Lewis who was concerned at the direct political control that the Whigs were likely to operate over the appointment of Superintendent Registrars.¹ This complaint was shared by Ellenborough who saw the details of appointment as a ruse which "would have distributed through the Unions a strong battalion of Whig attorneys to act as Party Agents at the Public Expense".² The letters which tell us these facts are interesting for Chadwick was trying to wriggle out of an accusation of having drafted the 1836 Act and Ellenborough was only too happy to claim of the changes "I did it. The blame ... rests with me". Chadwick went so far as to write in his draft that "You have undoubtedly rendered very high service to the public (by that measure; by making them register the cause of death)" scrawled in between the lines as an afterthought. Ellenborough did not mention this - Chadwick can scarcely have sent that part of the letter. Later Chadwick was to boast of his

1. Chadwick Papers, draft letter Chadwick to Ellenborough, 27 October 1841.
2. Chadwick Papers, Ellenborough to Chadwick, 27 October 1841.
role in getting Ellenborough to insert the cause of death. It seems likely that this was part of a bargain whereby Chadwick got less than he had originally wanted on the administrative side. By the amendments that Ellenborough carried the Superintendent Registrars were to be appointed by the Guardians, with the Clerk to the Board of Guardians having first refusal, but subject to any rules the Registrar-General might lay down concerning qualifications and responsible to the Poor Law Commission. Ellenborough also made births registration voluntary (a victory for the Church party), a change which was unlikely to have been discussed with Chadwick. From the changes which were discussed Chadwick might hope to exercise for a short period a large say in the appointment of the local Registrars. In the 1844 letter to Laycock he explained:

"I got the Poor Law Commissioners to go out of the way to recommend the appointment of medical men as registrars expecting here and there that some one would be found to take an interest in the subject".2

Chadwick's reconstruction of the circumstances was accurate as far as it went. But it did not go very far and leaves unstated that under heavy pressure Chadwick had conceived a scheme to buy off some of his most irate enemies and extend his influence. On the 27 August the Morning Chronicle reprinted, at Chadwick's request, a copy of a circular to the Clerks of the Boards of Guardians

1. Chadwick Papers, Letterbook No.3, ff.19-21, Chadwick to Dr. T. Laycock, 13 April 1844.
2. Ibid.
from the Poor Law Commission stating that local Registrars had to be appointed capable of registering the cause of death. Therefore, it was suggested, the most suitable appointment would be the medical officer of the Union (not just "medical men" as in the 1844 description and an appointment which would interfere with work on pauperism, the cardinal sin of the 3 July letter to Russell). But for little extra work the medical officers would gain more money.

This was one of Chadwick's most cynical actions, totally lacking in good judgement. For what Chadwick did not mention in his letter to Laycock or the circular was that in mid-July 1836 his quarrel with the medical profession was reaching its peak.¹ The previous year the Provincial Medical and Surgical Association had set up a committee to consider the controversial issue of medical relief to the sick poor with special reference to the 1834 Poor Law Act. Most of the speeches at the meeting were bitterly opposed to the tender-system for which it was assumed Chadwick was responsible.² Under this system doctors tendered to the local Boards of Guardians for their services, a system which resulted in needy doctors offering their services at very low rates. Moreover, the duties were thought to be too heavy while the doctors were treated as menials by the Guardians. All these criticisms were dwelt on in a biting report presented to the fifth meeting.

2. See TPMSA, IV, 1836, pp.xxvii-xxxiii.
of the Provincial Medical and Surgical Association on 21 July 1836, the same day Ellenborough moved his amendments. Even more militant was Thomas Wakley of the *Lancet* who in October 1836 founded the short-lived British Medical Association primarily to fight the medical provisions of the new Poor Law. Wakley used the *Lancet* to attack the 1834 Act and on 16 July 1836 he expressed the hope that the Provincial Association would not mince words at its forthcoming meeting. Already, at the end of June, the Medical Association of Dorsetshire had written to Lord John Russell to protest against the tender system. It would be disingenuous to suggest that this mounting conflict was not a factor in Chadwick's calculations. By including the cause of death Chadwick could win the favour of the Provincial Association, which had wanted it, as well as providing an excuse for bribing the medical officers with the offer of the Registrarship.

Once he became interested in civil registration from other motives Chadwick got carried away with grand visions. He tried to persuade Lord John Russell to appoint Charles Babbage as Registrar-General. Luckily he failed for Babbage was completely unsuited to the task. However, he did succeed in getting William Farr into the new office.

1. See TPMSA, V, 1837, pp.1-36.
4. Second Annual Report of the Poor Law Commissioners, Appendix (c), No.5, p.468; GBPP 1836XXIX Pt.I.
having had Farr recommended to him by Neil Arnott.\(^1\) Chadwick must have hoped to control Farr and had some now indiscoverable plan whereby Chadwick's office would collate medical statistics including figures on epidemics.\(^2\)

It was all in vain. His crass scheme for using the medical relief officers did no more than arouse further resentment. An editorial in the *London Medical Gazette* on 3 September quoted a letter which presumed that the advertisement in the *Morning Chronicle* had been written by "one of the Downing Street 'industrious fleas'". The editorial thought that the insult of being expected to serve under parish clerks was intolerable on top of the injury of "having put the members of a liberal and learned profession on a level with their butchers and bakers who contract by tender".\(^3\) A letter the next month was even more violent. For their pains in trying to get the medical officers to act as Registrars the Poor Law Commissioners were described as "discreet, delicate, generous men, with large salaries, 'small brains, and no bowels'". The writer hoped doctors "considering what is due to their profession, and to the cool impudence of the Somerset House triumvirate, and their scribe, will have rejected this contemptible offer" which was part of a scheme "to degrade general practitioners into a race of

1. Chadwick to Laycock, 13 April 1844. It is possible Farr was also recommended by Sir James Clark, a physician in royal favour. This was stated by N.A. Humphreys in his introduction to the memorial volume of Farr's works, *Vital Statistics* (London, 1885), p.xii.
2. Chadwick Papers, Farr to Chadwick, 13 February 1837.
petty pedlars and parish clerks, and they consequently, are able to appreciate their present politeness”.1

Chadwick fared no better with Farr. Farr was no-one's pawn and bluntly informed Chadwick that the Poor Law Commission was too busy and inexperienced to do much for medical statistics. Farr in fact saw no need for interference at all and sent Chadwick an article in the British Annals of Medicine (presumably written by Farr as editor) suggesting that the Poor Law Commission should have nothing to do with registration,2 with Russell's brother-in-law, T.H. Lister, "a very good novelist who cared nothing for the subject" in Chadwick's phrase,3 safely installed as Registrar-General Chadwick had lost all round.4 Once the difficult phase of appointing local officers and gearing up the machinery of administration had been passed the story could move out of the realm of factional politics and striving for advantage in which it had so long lain. The statisticians, whose role so far had been to wave their flags as Wilks and the rest hauled the issue off to Parliament, now came into their own.

2. Chadwick Papers, Farr to Chadwick, 13 February 1837.
3. Ibid., Chadwick to Laycock, 13 April 1844.
4. For some of the manoeuvrings over this appointment see Russell Papers, PRO 30/22/2C, ff.1-2, 14-15, 22-5, 77-8. Joseph Hume wanted John Marshall appointed and as late as 1853 his failure rankled (Farr Papers, I ff.105-6, Hume to Farr, 16 December 1853).
Chapter III

The Statistical Department of the Board of Trade.

By the time of the passage of the Registration Act of 1836 the first government statistical agency had been in existence for four years. The Statistical Department of the Board of Trade was founded in 1832 to improve and collate the growing number of returns made to Parliament in a routine manner or called for by individual Members of Parliament. The pursuit of the Mirage of a central statistical office as an administrative rationalization of the information gathering agencies of government is, like the rediscovery of the extent of poverty, a recurring theme in the history of British statistics. The pursuit may be said to have begun with Petty's plans and has patently not finished yet. In an era such as that of the great reform period which lasted from 1828 to 1846 it was likely that an attempt would be made to provide a central agency for the generation of statistics demanded to support arguments over the necessity or otherwise of particular reforms. Apart from this Dr. Lucy Brown, in her excellent study of the Board of Trade in the 1830's, has suggested a cogent reason which may have influenced official thinking. There was a great need for reliable information on provincial Britain, especially its trade and manufactures. Parliamentary debates had shown great ignorance at the official

1. In 1970 the General Register Office and the Central Statistical Office were merged into the Government Office of Population Censuses and Surveys.
level on the extent and nature of economic distress. While in office Sir Robert Peel, among others, had cause to complain of the impossibility of obtaining information.  

The extent of the deficiency was perhaps brought home to the Board of Trade when James Deacon Hume, Secretary to the Board, was sent on a tour of observation through the principal seats of manufacture. But the spur to action probably came from another official, William Jacob, the septuagenarian comptroller of corn returns. In early 1832 he circulated a paper on statistics within the Board. The paper was returned to him but fortuitously is available to us for in December 1834 and January 1835 he read it to the newly-formed Statistical Society of London since it was of general as well as departmental interest. The paper is revealing of the attitudes of the Board of Trade and the governing Whigs which led them to favour statistical studies. As Jacob explained,

"little statistical information has been collected, and that chiefly by the industry of the two Houses of Parliament, but that little has been so mingled with a vast mass of irrelevant, or unimportant, or tiresome details, and is scattered through such a number of ponderous folio volumes, that it has presented an appalling labour to all but the most indefatigable inquirers. It is true that, of late years, accurate indexes have been framed to the parliamentary papers, which have given better facilities for references than were before afforded:

3. For brief sketches of Hume and Jacob see Brown, op,cit., pp.23-5.
but at the same time the number of the annual volumes have continued to increase, so that even with those helps, they present an array that requires courage to encounter".  

Jacob's complaint might well be echoed by the historian of the nineteenth century. But Jacob went further and put forward a classic argument which serves to tell us that behind much of the statistical movement that was evolving in the early 1830's lay more personal political motives. In the troubled situation of 1832 it was somewhat more than relevant to suggest that "the best mode of allaying disquietude and of diffusing contentment on the subject of public affairs is an open and clear disclosure of their condition and management". The prophylactic effect of statistical studies was so significant that Jacob repeated the point:

"A more general diffusion of accurate knowledge regarding the state of public affairs would tend to check that excitement and party spirit which has often been created by misrepresentation or exaggeration, and has produced an annoyance to the government, and at least a temporary disaffection of the public mind".

It would be premature at this time to try to delve deeper into what was meant by such loaded terms as "diffusing

1. William Jacob, "Observations and Suggestions Respecting the Collation, Concentration and Diffusion of Statistical Knowledge Regarding the State of the United Kingdom", Transactions of the Statistical Society of London, I, pt.1, p.1. That it is Jacob's original paper is shown by the advocacy of a Statistical Department which in a footnote is stated to have since been formed (ibid., p.2), Dr. Brown does not appear to have been aware of the existence of the paper which is understandable for the only copy of the Transactions I know of is in the library of the Royal Statistical Society.  
2. Ibid.
contentment" and "accurate knowledge" but the general
drift is apparent. Given a full knowledge of the condition
of the country assent to the obviously correct principles
of the existing government was a foregone conclusion.
What was needed was a Statistical Department of the Board
of Trade. Consequently it was decided to approach the
Treasury.¹ In his letter to the Treasury Thomas Lack,
Assistant Secretary, explained that the purpose of the
department would be "to obtain and systematically arrange
returns upon the Wealth, Commerce, and Industry of the
United Kingdom". Material covering the previous ten years
was to be gathered together while it was hoped that by
methods akin to those of the first four censuses (the
letter was vague on this point) the department would be
able to provide estimates of the produce of agriculture,
mining, and industry. More specifically, there already
existed grandiose if nebulous plans for the study of the
currency, crime, insolvency, mendicity, education, county
rates, church rates, poor rates, the distribution of funded
property, savings banks, the tonnage using canals and arti-
ficial docks, as well as colonial and foreign topics.²

In its consent to the creation of a department the
Treasury ignored this formidable list and simply agreed
with the need for good information and the value of saving
money by rationalization.³ George Richardson Porter was

1. Public Record Office, B.T.5/40, f.489 (Minutes,
30 March 1832).
2. B.T.3/23, ff.226-33 and B.T.24/1, ff.1-3 (Thomas Lack
to Treasury, 31 March 1832).
3. B.T.3/25, f.21 (In-letters, 13 April 1832).
appointed to be in charge of the work for an initial period of three months with Richard William Lack as assistant clerk. The latter, from his name, was an obvious beneficiary of jobbery, Porter a less obvious one. The man initially approached was Charles Knight, at that stage at the peak of his precarious career as publisher to the Society for the Diffusion of Useful Knowledge (and hence well-known to Lord Auckland, the President of the Board of Trade). Knight recommended Porter who had written a section on life assurance for one of the S.D.U.K's publications, the Companion to the Almanac. Porter, born in 1792, was a brother-in-law of Ricardo's but the significant fact about him was his membership of Henry Brougham's S.D.U.K. which brought him into contact with other members of the charmed circle of the Whig-Liberal intelligentsia who were to dominate the parliamentary enquiries and statistical investigations of the 1830's. Dr. Brown has noted that Porter's own views were not necessarily settled in their final form in 1832 since in 1830 he had published a book on the sugar industry dedicated to the Marquess of Chandos and the standing committee of West Indian planters and merchants. But the book said little or nothing in

2. For a biography of Knight see Althea C. Cherry, A Life of Charles Knight (1791-1837), with special reference to his political and educational activities (unpublished London M.A. thesis, 1942).
4. Ibid., p.28.
favour of protection and was an obvious attempt to salvage Porter's sugar-broking business, particularly by persuading the industry to adopt a patent he and J.T. Beale had taken out in 1828. ¹ Certainly once Porter was inside the Board of Trade he "emerged as a free-trader". ² His views became so notorious that when he died suddenly in 1852 Disraeli remarked that his death "was occasioned, I suppose, by the accession of a Protectionist Ministry". ³ A liberal wit might well have replied that the truth was not greatly different since Porter had died of the aftermath of a gnat's sting. ⁴

In 1832 all this lay in the future and it was not even clear whether the new section was planned to be permanent or not. Reorganization on a permanent footing did not take place until the end of 1833 by which time a Parliamentary Select Committee on Public Documents had considered the best means of providing information "with a view to Economy, facility of Access, and clearness of Arrangement". ⁵ Its major recommendation was the extension of the Statistical Department in order to create a central statistical office. ⁶ The recommendation was not immediately carried out since there was a conflict over who should head the office. Poulet Thomson, the Vice-President of the Board, wanted J.R. McCulloch, his old tutor.

2. Brown, op.cit., p.28.
4. DNB.
6. Ibid. Second Rep., p.3; GBPP 1833 XII.
Also in the field was John Marshall, Joseph Hume's candidate. Marshall was preparing a voluminous summary of the parliamentary papers which was published in 1833. Marshall had earlier written a large volume on the statistics of the British Empire published in 1825 under the aegis of a non-existent "London Statistical Society". Because the book followed closely articles supposedly written by a "John Powell" in the Pamphleteer it has been usual to ascribe it to Powell. It was in fact acknowledged by Marshall to be his and the likelihood is that the "John Powell" of the Pamphleteer was none other than John Marshall. Marshall was not in favour with the Whigs and Poulett Thomson was overruled. Porter was appointed with Rawson Rawson of the Corn Department being transferred as his assistant. 

Like Porter Rawson was to be of great importance in the statistical movement. Born in 1812 he had been educated, if the term was then applicable, at Eton. At the age of seventeen he entered the Board of Trade, a post no doubt obtained because of the connections of his late father who had risen from obscurity to being an oculist to the Prince

2. John Marshall, A digest of all the accounts relating to the population, production, revenues ... of ... Great Britain and Ireland (London, 1833).
Regent and the Dukes of Kent and Sussex in the late 1810's. In 1830 the younger Rawson also became private secretary to the Vice-President of the Board of Trade, a post he continued to hold until 1841. In 1842 he left England to begin a long career in the colonial service which culminated in the governorships of the Bahamas and Windward Islands. On his retirement in 1875 he renewed his connection with the Statistical Society and was in the chair when Charles Booth gave his first paper to the Society in 1886. He did not die until 1899.

The first action of the reorganized Department was to attempt to take over from the Home Office its responsibility for criminal statistics, which Porter had coveted since November 1833. It was suggested that it would be desirable to obtain more accurate information than had been available hitherto on the number of persons committed for trial and the nature of their offences. A draft form of returns drawn up by Porter was sent with the letter.

Although ultimate control remained with the Home Office and its official in charge, Samuel Redgrave, Porter was successful in 1834-5 in getting the criminal statistics improved. But, as he pointed out to Adolphe Quetelet, the Belgian statistician, when the first returns appeared, "I am by no means satisfied with these tables except as

1. For his father, Sir William Rawson, see DNB.
2. JRSS, LXII, 1899, pp.677-9. Strangely, Rawson was not entered in DNB.
the beginning of improvement". He hoped (a wish fulfilled) that the following year (1836) he would be able to give information on the education of criminals as well as extending the new tables to Scotland and Ireland.¹ He had already written, in May 1835, to Lord John Russell along these lines and obviously Russell concurred.²

It was one of the few successes of the Department. By the time of the permanent formation in early 1834 it perhaps was clear to Porter and his colleagues that there were narrow limits to what could be achieved by a government body. The evidence had been building up since the foundation of the Department in 1832. The surviving letter-book of the Department gives a clear picture of the failure of the high hopes of early 1832. Porter seems to have settled in and begun work in earnest in June 1832. Letters were sent to the National Debt Office, the Excise, the Stationer's Company, the Lord Mayor of London, the West India Docks, and the Treasury to obtain various returns.³

1. Quetelet Papers, Porter to Quetelet, 28 May 1835. The Quetelet collection is in the possession of the Belgian Royal Academy of Sciences to whom I am indebted for photo-copying a large number of letters. A catalogue to this rich and previously unexplored source is Liliane Wellens-de Donder, "Inventaire de la correspondance d'Adolphe Quetelet", Mémoires de l'Académie royale de Belgique, Classes des Sciences, t.XXXVII, f.2, 1966. For a further discussion of criminal statistics see below, Chapter XII.
3. B.T.24/1, ff.4-5 (7 June to 28 June 1832). Dr. Brown states that the letter-book covers the period September 1832 to April 1834 (op.cit., p.83 n.2). In fact it runs from March 1832 to August 1838.
These were mainly of a minor nature and the first hint of an intention to carry out the more grandiose schemes suggested in March did not come until the end of August. The Chamber of Commerce of Waterford was the first to be approached (Ireland may have been chosen because there had been no account of Anglo-Irish trade since 1825).

In his letter Porter explained that he wanted returns from the principal town of each area to form an impression of the industry, wealth, and resources of the surrounding county as well as of the condition of the population. He wanted the first returns to be retrospective to 1820 with quarterly returns in future. The returns were to embrace a statement of the principal branches of manufacture, the population at the last three censuses and the number of births, marriages, and burials over the previous twenty years, the approximate number of factories and their employees, wages, fluctuations in employment, rents and other prices, shipping, imports and exports, local taxes, crime, tolls, places of public worship, charitable establishments, education, savings banks, benefit societies, and a statement of the major public works in progress.¹ Over the next month similar letters were sent to Limerick, Cork, Belfast, Dublin, Drogheda, Londonderry, Srabane, and Ballymena in Ireland and Manchester and Birmingham in England. The immediate result of all this in the first volume of published papers was one small return from Waterford and one from Limerick, though Manchester sent

¹. Ibid., ff.9-11 (30 August 1832).
returns some months later.\(^1\) William Marshall of Londonderry promised returns but these do not appear to have eventuated.\(^2\) Marshall suggested further enquiries but Auckland squashed these on the grounds of expense.\(^3\)

Nevertheless, not all was black. Both the British and Foreign Schools Society and the National Society acceded to requests for their past annual reports.\(^4\) But Porter was now wary of Chambers of Commerce. In December 1832 he wrote a "private" letter to the secretary of the Glasgow Chamber of Commerce stating that before he wrote an official letter he would like to know on what points information could be provided and what other sources of information might be approached.\(^5\) He received a reply recommending James Cleland's works on Glasgow which were useful but too limited for Porter's purposes. He wanted a retrospective account, regretted that the Chamber of Commerce could not supply it, and wondered if the Town Council could be of assistance.\(^6\) In fact Cleland proved the only source of value.\(^7\) Porter also had a degree of success with Sheffield where the master cutler responded (in part) to a request for data.\(^8\) In fact insofar as Porter

1. Tables of the Revenue, Population, Commerce ... of the United Kingdom and its Dependencies. Part I. From 1820 to 1831, both inclusive; GBPP 1833 XVI. B.T.24/1, f.36 (13 May 1833).
3. Ibid., f.25 (19 January 1833).
4. Ibid., ff.17-19 (19, 22, and 23 November 1832).
5. Ibid., ff.21-3 (21 December 1832).
6. Ibid., ff.23-4 (5 January 1833). For Cleland see below, Chapter VII, on Glasgow.
7. For example see Tables ... Part III. 1820-1833, pp.411-2, GBPP 1835 XLIX.
8. B.T.24/1, ff.27, 34 (7 February and 19 April 1833).
did get material on the provinces he had to rely on scraps from individuals. The third volume of the tables included data on Leicester and Bradford, in both instances from "a principal Manufacturer" in each town, and on Newcastle from "a Merchant". The most complete returns, however, were the Manchester ones mentioned above which covered vital statistics, savings banks, wages, prices, and cotton mills.

A pattern was beginning to emerge in the annual tables with the inclusion of statistics from three different types of sources. First, and by far the largest source, was the reproduction of other official data with occasional additions not found elsewhere from such sources as the Inspector-General of Imports and Exports, the Colonial Office, and the Home Office. Secondly, information was collected from certain institutions of a semi-official character. Bethlem, Greenwich, St. Thomas's, St. Bartholomew's, and St. Luke's hospitals were tapped as sources of supply for the level of wages and prices. But for the provincial scene Porter was forced to rely, as he wrote to the Collector of Customs in Liverpool, on the "cooperation of many intelligent and well-informed gentlemen in various parts of the Kingdom". Such men were Thomas Dunn in Sheffield, Cleland in Glasgow, Sir Edward Thomson in Birmingham, William Marshall in Londonderry, E. Arnaud in Liverpool, Charles Pope in Bristol, William Vaughan in the

1. Tables ... Part III, pp.412-23.
2. Ibid., pp.401-4.
Potteries, David Carroll in Limerick, and Benjamin Gott in Leeds. Expectations were usually higher than the realities allowed for. Porter first wrote to Pope of the Bristol Customs in August 1833 on the suggestion of the Collector of Customs there.¹ Pope indicated his willingness to cooperate but in January 1834 Porter wrote that he had had no reply to a letter sent four months previously.² Men like Pope seldom volunteered themselves for the tasks Porter expected them to carry out. Benjamin Gott, for example, had been mentioned to Porter by Gott the younger when Porter was in Leeds in September 1833. Consequently Porter wrote to Gott for information suggesting a third party might do the actual work. James Marshall, M.P. for Leeds, was asked to persuade Gott to assist.³

Gott did not come up with anything. Despite occasional returns the scheme to provide provincial statistics must be accounted a complete failure. The government was not prepared to pay for a nationwide system of paid agents so that Porter had to follow J.R. McCulloch's advice to have "half a dozen Clelands" but did not succeed.⁴ In fact from early 1834 Porter seems to have largely dropped the plan. Gradually the correspondence registered in the letter-book of the Department became less frequent. Eight letters were registered in the first three months of 1836,

1. Ibid., ff.52-3 (26 August 1833).
2. Ibid., ff.53, 60 (2 September 1833 and 1 January 1834).
3. Ibid., ff.61, 62 (2 January 1834). The man nominated to do the hard work was Holdsworth.
one the next July, then a gap to January 1838. The last letter was dated August 1838 despite the fact that most of the book remained to be used.

The last letter itself shows the collapse of the final attempt to carry out a large scale plan. In May 1836 it was decided to try to obtain returns on the state of agriculture for the whole country. Bedfordshire was chosen as a test area and questionnaires were sent to 126 parishes. Returns came back from the clergy in no more than twenty-seven cases and the project was abandoned. The little data that was obtained was printed in the first volume of the Journal of the Statistical Society of London. Porter consoled himself by appealing at the 1839 meeting of the British Association for the Advancement of Science for the systematic collection of agricultural statistics.

The end of the grandiose scheme of March 1832 and its later elaborations did not of course mean the end of the work of the Statistical Department. The annual Tables grew in volume from year to year. Nor were they solely limited to collating statistics into one volume available elsewhere, but in scattered form throughout the blue books. In the Tables for 1839, for example, there were 114 tables of criminal statistics, eighty-seven of which derived from local police returns in London, Liverpool, Hull, and Dublin; while there were seventy-nine tables on hospitals, including many on the duration of sickness and other medical

The main fault of these tables is their apparent aimlessness: everything was printed that came to hand. Thus in the tables for 1845 there appeared a particularly detailed set of tables on crime in Manchester down to the amount of money taken from drunks by the police and returned to them when sober, the number of public houses with musical entertainment, and the number licensed to keep billiard and bagatelle tables. The importance of such work in the government's mind may be gauged from the fact that when a replacement was needed for the promoted Porter in 1847 the man chosen was Albany Fonblanque, editor of the Examiner, but with no statistical experience. The admittedly politically biased Disraeli saw Fonblanque as "an imbecile as a man of business".

The collection of much useless material was accompanied by an inability to provide useful, even necessary, statistics. As Lucy Brown points out, "there is no sign" in times of need such as 1839 and 1842 "that the Government had a firmer knowledge of the economic situation in the provincial centres than it had ten years previously". Dr. Brown puts much of the failure down to a certain "narrow vision" inherent in the "intellectual attitude dominant in the Board of Trade". There is much in this and it is apparent that within the field of economic

1. Tables ... Part IX. 1839; GBPP 1841 XXIV.
2. Tables ... Part XV, Section B. 1845; GBPP 1847 LXV.
4. Quoted in Blake, op.cit., p.323.
statistics Porter and his associates could not put forward a proper plan of action. (Dr. Brown discusses in some detail the example of the working out of import values).\(^1\)

But in social statistics the failure was more clearly one of means, allowing for the fact that all the social statisticians of the 1830's and 1840's had a "narrow vision". By the end of our period the failure was publicly recognized. In 1850 the then President of the Board of Trade, Henry Labouchere, admitted that the Department was "susceptible of a great deal of improvement".\(^2\) The Trevelyan-Northcote report analyzed the reasons perceptively. The Department had been unable to become a central statistical office providing all the facts required by Parliament because of the delay in some of its publications (necessitating motions for returns which would give priority to one section of documents), because of the "want of proper adaptation of the form of others to the requirements of the present day", because of the sheer bulk of the annual publications which daunted readers, and because of the existence of other departments, both old and new, for social problems which retained their independent statistical functions.\(^3\) Much of the responsibility for failure, therefore, lay outside the competence of Porter and the Statistical Department. Despite the "narrow vision" Porter's major book, the Progress of the Nation, suggests that given

1. Ibid., pp.88-92.
the opportunity and the means the Department would have achieved more.¹

*Progress of the Nation* was in many ways a scrappy book. The sections on vital statistics were dull and lacking in originality, frequently very uncritical of existing source material and (justifying Dr. Brown) seemingly more concerned to chart progress than discuss the situation in depth. Yet, in the third edition of 1851, these sections had greatly improved, indicating that part of the problem had been simple ignorance. For all his limitations Porter was interested in the collection of better social statistics, notably statistics of crime and education. By early 1834 he may have had doubts about the possibilities within the existing structure of the Board of Trade.

Porter was not alone in this realization in the Board of Trade nor in a desire to extend the scope of statistical enquiries. In January 1834 Poulett Thomson was in Manchester and held a conference with James Phillips Kay of the infant Manchester Statistical Society. Kay was informed that there was no chance of the government adopting an extensive scheme of inquiry. The organization required was beyond the means of government,² the electors would not stand the expense, and, in any case, Britain was a free country in

2. In 1830 the permanent staff of the Board of Trade consisted of two joint assistant-secretaries, a comptroller of corn returns, and about a dozen clerks (Brown, op.cit., p.20).
which such snooping by government would be resented and resisted. Thus it was better for voluntary associations to take up the task. That there was a task was obvious: the late session of Parliament had shown, in Poulott Thomson's view, a great deal of ignorance the remedy for which was statistical surveys in order that "vague generalizations and personal impressions should, as far as possible, be avoided".

Thomson put forward a plan for statistical surveys which gives a clear indication to add to Jacob's paper of what had been initially intended when the Department had been set up. It was suggested that districts of similar type should be covered so that

"the number, age, sex, employment and wages of each member of the family might be ascertained - the number of those employed in each family - the number of families unemployed in the district - the number dependent on the Parish or receiving aid from it - the state of the dwellings as far as convenience - the number of children educated ... the number who can read ... whether the inmates are members of any Benefit Society - subscribers to any Library or Mechanics' Institute - or have any amusement ...".

In addition note would be taken of the prices of clothes and provisions, the consumption of meat and "ardent spirits", and the use of cheap publications.¹ One can discern a limited view of society here, a concern for morality and independence that was the hallmark of the

1. J.P. Kay, "Results of a Conference with Mr. Thomson concerning the Objects towards which the Society should direct its attention", Appendix to the Minutes of the Manchester Statistical Society, f.4. This volume is housed in the Manchester Central Library. Kay's paper is in manuscript form. Also see T.S. Ashton, Economic and Social Investigations in Manchester, 1833–1933 (London, 1934), p.14. Ashton refers to the Appendix to the Minutes as the Guard Book.
social statisticians of our period. But the scope suggested was wider than any of the actual statistical inquiries which were carried out in the next twenty years, indeed of any single survey until the work of Charles Booth fifty years later.

Poulett Thomson was trying to achieve privately what he could not achieve publicly. For Porter things were a little easier - in the peculiar world of civil service responsibility as it existed in the 1830's it was almost easier for civil servants to engage in outside activities than it was for politicians. Fortuitously, an excellent opportunity presented itself in mid-1834 to Porter to compensate for the failure of the Statistical Department and he increasingly took advantage of it. From that time until his death in 1852 Porter was to find more freedom within the framework of the Statistical Society of London.
Chapter IV.

The Statistical Society of London:
From Cambridge to London.

The Statistical Society of London, now the Royal Statistical Society, was formally instituted in March 1834. As the Manchester Statistical Society had already been in existence for some months it is usual to accord the latter priority of foundation. Yet there is a sense in which the larger society can claim seniority of age as well as prestige since its roots go back to June 1833 and the third meeting, at Cambridge, of the British Association for the Advancement of Science. At that meeting, in somewhat irregular circumstances, a Statistical Section was added to those covering the natural and physical sciences. It was not a foreseen or planned event but one due as much to chance as to the conjunction of a number of men of similar minds and previous acquaintance who had an interest in statistics.

The new section’s parent body, the British Association for the Advancement of Science, had been formed in 1831 as an association to gather together British scientists in annual meetings in major provincial centres. It was

1. A royal charter was granted in 1836.
2. There is an official centenary history of the society: James Bonar and Henry W. Macrosty, *Annals of the Royal Statistical Society, 1834-1934* (London, 1934). This is of value as one of the few accurate accounts in print but does not utilize all available sources.
designed partially to fill a need that could not be met by
the London based Royal Society and partially in imitation
of foreign, in particular German, models, at a time when
British scientists were becoming worried over their poor
position in the European race for knowledge. The eminent
mathematician, Charles Babbage, was consulted as to the
nature of the subjects which ought to be discussed at the
first meeting at York, as he had attended similar meetings
in Germany, but was not particularly active in the formation
of the Association. In fact various letters in the
Babbage papers indicate that some of the more eminent
scientists held aloof from the first meeting, perhaps as
being somewhat beneath them since it originated in a pro-
vincial philosophical society.

The success of the 1831 meeting resolved all doubts
and the British scientific establishment, including Babbage,
attended in force the second meeting at Oxford in 1832.
It was at this meeting that there came a harbinger of what
was to occur the following year. At this point in his
career Babbage’s restless mind had temporarily lighted

1. Babbage papers, B.M. Add. Mss. 37185, ff.431-2, D. Brew-
ster (of the Philosophical Society of York) to Charles
Babbage, 4 February 1831. Brewster mentioned backing
from the Royal Society, the Royal Society of Edinburgh,
and the Royal Irish Academy. For a useful though limited
account of the foundation see O. J. R. Howarth, The
British Association for the Advancement of Science: A Retrospect, 1831-1921 (London, 1922), pp.1-27.
2. B.M. Add. Mss. 37186, f.43, Brewster to Babbage, 14
August 1831. B.M. Add. Mss. 37186, ff.136-8, William
Vernon Harcourt to Babbage, 27 August 1831.
upon the problems of industry. In addition, he was determined to raise the status of the professional scientist in society. To Babbage the final proof of the existing low state of the prestige of the scientist had been demonstrated the previous September when Henry Brougham had offered Babbage the Order of the Guelph in recognition of his scientific work. The offer turned out to be of the third class only and Babbage, a man who never took such trifles lightly, refused it on the grounds that the offer reflected on the place of science in society.

For Babbage the situation could best be remedied by involving the wealthy and the influential in the scientific world. Consequently, at the Oxford meeting Babbage, rather tactlessly, rose after a paper on fossil remains to express the hope that

"attention should be paid to the object of bringing theoretical science in contact with that practical knowledge on which the wealth of the country depends ... I trust we may be enabled to cultivate with the commercial interests of the country that close acquaintance which I am confident will be highly advantageous to our more abstract pursuits".

The seeming narrowness of the appeal to the commercial and industrial bourgeoisie may be misleading for in later versions of his thoughts at that time Babbage was to explain that he also wished to include the landed classes and the governing elite - "the landed proprietors or those members

2. B.M. Add. Mss. 37186, ff.97-8, draft of a letter from Babbage to Brougham, 23 September 1831.
of their families who sat in either house of parliament" as he put it in his autobiography, "the influential class comprised of civil servants, members of Parliament - all the men who are involved in public affairs" as he described them in a private note for Adolphe Quetelet in 1853.2

Probably the additions in the later versions to the account in the official report of the 1832 meeting represent accurately enough Babbage's intentions. What we may be suspicious of is the hindsight which allowed Babbage to see that what was needed for the wealthy and influential was some section with wider terms of reference than those existing in 1832.3 The evidence suggests that Babbage's notions of how to fill the gap were unformed in 1832 since he put forward no concrete proposals according to the official report. In any case his speech fell flat and nothing came of it at Oxford.

The next meeting, in June 1833, was at Cambridge, at that time dominated in science by Trinity College men like William Whewell. Whewell had invited to the conference Adolphe Quetelet, one of the most important scientists in Europe and certainly its leading statistician.4 Quetelet

2. "Note sur l'origine de la Societe de Statistique de Londres, par M. Babbage". This note is in the Quetelet papers in Brussels and was written in September 1853 when Babbage was in Brussels for the first statistical congress. It is in French.
3. See Passages, p.432. In the note for Quetelet Babbage stated "these lacked a section".
brought with him to Cambridge reports of his statistical studies on suicide and crime.\footnote{1} He went, with this material, to see Richard Jones, the professor of political economy at King's College London and another friend of Babbage's.\footnote{2} Jones decided to hold a meeting in his room in Cambridge that evening of a number of people interested in statistics so that Quetelet could discuss his work. At this point Jones was visited by Babbage who was informed of what had happened and invited to the meeting. According to Babbage he

"had just left him when it occurred to me to profit from this event. I returned to Mr. Jones and proposed to him to contact all the members who took an interest in statistical researches in order to form a statistical section".\footnote{3}

What Babbage was proposing was irregular since the section was to be formed before sanction was obtained from the general body. Therefore the scheme had to be carried out with a degree of panache. Babbage "would announce the formation of the new section as a fait accompli and demand a bill of indemnity to cover the irregularity".\footnote{4} The prestige of Babbage and the others involved allowed them to get away with it. That such prestige was needed was due to the dubious reputation of statistics among the scientists as a subject involving political discussion. As the president

2. There are three accounts by Babbage of what happened: Passages, p.433; The Exposition of 1851, pp.16-17; and the note in the Quetelet papers.
3. Note in Quetelet papers.
4. Ibid.
of the British Association, Adam Sedgwick, put it in his concluding address, the new section would have to follow strict rules for

"if we transgress our proper boundaries, go into provinces not belonging to us, and open a door of communication to the dreary world of politics, that instant will the foul Daemon of discord find his way into our Eden of philosophy".1

These fears of Sedgwick's were not without foundation, as soon becomes apparent once the cliques who were responsible for the new Statistical Section are more closely examined. Initially a small meeting was held at which were present T.R. Malthus (in the chair), Quetelet, Rev. George D'Oyley, Jones, Babbage, W.H. Sykes, Dr. Somerville (of Oxford), and John Elliott Drinkwater. D'Oyley, the rector of Lambeth, and Somerville were of no great importance in the later stages (except that Somerville's stepson, Woronzow Greig, was the first secretary of the London Statistical Society). Malthus, Quetelet, Jones, Babbage, Sykes, and Drinkwater may, therefore, be regarded as the crucial group.

Of these Babbage was the most important. We have already noted some relevant facts about him.2 But one aspect of his career which has not been emphasized so far is that from about 1829 to about 1835 he was deeply

1. Lithographed signatures of the members who met at Cambridge ... 1833. With a report of the proceedings ... and ... list of members (Cambridge, 1833), pp.xxviii-xxix.
2. A recent biography of Babbage is Maboth Moseley, Irascible Genius: A Life of Charles Babbage, Inventor (London, 1964). However, there is still no full-scale biography of Babbage which utilizes all the available material. Moseley's biography concentrates on Babbage and his calculating machine.
involved in Liberal politics. His first major venture was his chairmanship of the election committee for William Cavendish in the 1829 Cambridge election.\(^1\) In 1832 Babbage took a further step and tried to find a seat for himself. He had hopes of Cambridge, then Tower Hamlets, Marylebone, Greenwich, and, finally, Finsbury.\(^2\) He proved a little too much of a prima donna for selection committees and failed. This was not the end of Babbage, the parliamentary scientist. A month before the meeting at Cambridge he was approached to stand "especially in the interests of the middle class of people" should David Ricardo withdraw from Parliament.\(^3\) In fact Babbage stood again for selection in Finsbury in the summer of 1834 and as late as January 1835 held hopes of election (in that instance for Liverpool).\(^4\) Thus the period of Babbage's highest involvement in statistical ventures was also the period of his foray into Liberal politics.

Babbage's closest associate in much of this political activity was John Elliot Drinkwater. Drinkwater was a rising man in Whig-Liberal circles. He was the son of Colonel John Drinkwater and was born in 1801. In 1816 he went to Westminster as a King's Scholar and three years later proceeded to Trinity College Cambridge, taking a first class in 1820. In 1821 he was entered at the Middle

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1. There are a number of letters in B.M. Add. Mss. 37184 on this.
2. See B.M. Add. Mss. 37186 and 37187 for relevant correspondence.
4. For Babbage's own account see Passages, chap.XXI.
Temple and two years later graduated Fourth Wrangler at Cambridge. Failing to get the desired fellowship he went to France and returned in 1827 to take up a legal career. He was introduced to Babbage by William Whewell in 1824 and by 1827 the two were on particularly friendly terms. Drinkwater referred to himself as Babbage's "Master Merryman" and was prone to making ghastly mathematical jokes. Drinkwater had aided Babbage in the Cambridge election of 1829 and in the ventures of 1832. He was also heavily involved in the Society for the Diffusion of Useful Knowledge, writing lives of Newton and Galileo and investigating the feasibility of starting the Penny Cyclopaedia. With these connections it is not surprising to find that by 1833 Drinkwater had embarked upon a civil service career becoming legal counsel to the Home Office (and hence drafting many of the Whig reforms of the next few years). He was one of the assistant commissioners for the 1833 Factory Commission and had completed his controversial report on Yorkshire, justifying the factory system, some three weeks

1. Details of Drinkwater's early life are taken from his father's manuscript autobiography, National Library of Scotland Ms. 1835.
4. E.g. B.M. Add.Mss.37185, ff.259-60, "Dorset Street [Babbage's Address] lies in longitude J-1, latitude \sqrt{-1} for me": Drinkwater to Babbage, 10 July 1830. There are a number of undated lighthearted letters in B.M. Add.Mss.37200, ff.168-72.
before the Cambridge meeting. He was also one of the Municipal Corporations Commissioners.

Drinkwater's political commitments are obvious. Colonel William Henry Sykes is a more shadowy figure though he was long to remain involved in the statistical movement. He was born in 1790 and entered the Bombay Army at the age of fourteen. He rose to the rank of captain before returning to England in 1820, spending the next four years travelling (during which time he got married). In 1824 he went back to Bombay and was appointed "Statistical Reporter to the Government". The post was abolished at the end of 1829 in a wave of retrenchment and after carrying on his labours on his own account for another year Sykes returned to England at the beginning of 1831. Little is known of his views at this stage in his life but his report on the British Association meeting of 1835 implies that he was a typical statistician of the time in seeing statistical studies as a part of the process of "improving" society. He was to contribute many papers to the British Association and the Statistical Society of London, mainly on Indian statistics.

1. See Employment of Children in Factories, R.Comm. First Rep. C.1; GBPP 1833XX. The report was dated 7 June. Drinkwater had got involved in a pamphlet war with M.T. Sadler over the effects of factory labour on mortality. Drinkwater was backed by Brougham in his career (see two letters to Brougham in the Brougham papers, University College London, dated 15 August 1831 and 13 August 1835).

2. James Sykes, Biographical Notices of Colonel William Henry Sykes, with Manuscript Appendix (1857). This volume is in the British Museum.

Also interested in Indian statistics was Richard Jones. Jones had been a part of the same circle as Babbage in their student days at Cambridge. Jones was curate at Brasted (Kent) from 1826 to 1833 at which point he became professor of political economy at King's College London. Though a Liberal in politics he was in one sense a lone wolf among the political economists of his time since he was against general laws and more in favour of massive data-accumulation than the essentially deductive approach of the classical school to which Nassau Senior and Ricardo belonged. In his introductory lecture at King's College he had remarked that

"it is not pleasant to reflect how little has been done in England to systematize statistical inquiries, or to preserve and spread the information which statistics can give us ... We may hope surely, that mankind and their concerns will soon attract interest enough to receive similar attention [to the physical sciences]; and that a statistical society will be added to those which are advancing the scientific knowledge of England".

Of the founders of the Statistical Section Jones was perhaps the least committed ideologically and the most interested in statistics for their own sake.

That any interest at all should be shown in statistics by Malthus is not immediately unsurprising. Malthus's many works on population and political economy had, despite

their subject matter, been marked by a notable lack of quantitative data. Rather, they were paradigms of the deductive method favoured by contemporary political economists. Malthus may, of course, have assumed that more detailed studies would verify his law. No doubt, too, he was pulled into the scheme as a readily available elder statesman of political economy. But there may have been more to Malthus's role than this for within a few days of the Cambridge meeting he was writing to Quetelet seeking answers to questions on vital statistics, notably on fertility, fecundity, and the wages and food of the poor.1 Shortly before his death he sent a paper to Babbage for his comments.2 Though it is no more than a surmise it might be wondered whether Malthus was working on a revision of his most famous work backed by a greater wealth of detail, a project cut short by his death.

This group of Englishmen which took the opportunity presented by Quetelet's visit shared one outstanding characteristic which cannot go unemphasized. They were far from being a band of intellectual Young Turks launching an attack on the citadel of orthodoxy. Rather, in broad terms, they came from within that orthodoxy, already, with the exception of Drinkwater, men of middle age or older and of high standing in intellectual circles, particularly

1. Quetelet papers, Malthus to Quetelet, 27 July 1833. Also see Quetelet, Physique Sociale (2 vols., Brussels, 1869), II, p.451. I owe the latter reference to Professor D.V. Glass.
2. B.M. Add.Mss.37188, f.371, Malthus to Babbage, 10 June 1834.
Liberal intellectual circles. The statistical movement began, as it was to remain (though less definitively so) a movement of the reforming establishment, Whig to Liberal in politics, non-Benthamite (yet not consciously anti-Benthamite).

The original group met under Malthus's chairmanship on the morning of 27 June 1833 at the Cambridge meeting of the British Association. Quetelet communicated to the meeting the results of some of his researches into the proportion of crime at different ages and in different parts of France and Belgium. Sykes offered for use his work on the statistics of the Deccan and Babbage made some remarks on what, from the description, appears to have been the normal probability curve and its application to social phenomena.1 With this success behind them the group adjourned to gather together interested people for a larger meeting that evening.

Over thirty assembled, including such important men as Earl Fitzwilliam, Sir Charles Lemon, and Henry Hallam (the Whig historian). Jones enjoined the meeting not to narrow the planned field of investigation at the genesis of the section's labours and suggested that the first order of business should be to draw up heads of inquiry as well as a list of desirable researches. He further indicated

1. This account is based on a diary kept by Drinkwater which covers the affairs of the organizing committees from 27 June 1833 to 15 March 1834 (hereafter referred to as Diary). It is in the keeping of the Royal Statistical Society to whom I am indebted for permission to use their records.
that it might be possible to obtain government cooperation (it should be noted that G.R. Porter was not at the Cambridge meeting). Babbage mooted the idea of communicating with friendly societies and "proprietors of large manufactories". Nothing more was done until the next day when another meeting was held with Jones in the chair. Jones read a homily to the meeting pointing out that in the narrowest sense statistics would be limited to "the production and distribution of wealth". He went on to say, however, that it would be useful to till a wider field so that the section "would think foreign to the objects of their inquiries no classes of facts relating to communities of men which promise when sufficiently amplified to indicate general laws".

So far Jones's injunctions were much as might be expected. But he went on to say something which casts a great deal of light on the attitudes behind the welling-up of the statistical movement:

"To repress however to some extent the spirit of premature speculation which is too apt to mingle itself with such researches, perhaps it might be prudent to limit as far as possible their reception of such matter to facts capable of being expressed by numbers."

Thus quantification was used because of the desire to avoid the appearance of bringing in what was known as "party spirit". The new section had little choice in the matter for the British Association insisted that it confine itself to "matters of fact, with mere abstractions, and with

1. Diary.
numerical results" while the "higher generalizations" of political economy and political philosophy were forbidden.\(^1\) The notion that statistical "facts" were pure and non-controversial was an unconscionable time dying but by the end of our period the statisticians had done enough to raise serious doubts. Indeed, from the very beginning, the movement was animated by a set of attitudes which owed much to "higher generalizations".

After this strange, but necessary, piece of casuistry Jones called for the creation of a more permanent machinery than the Statistical Section could provide. A permanent committee based on London was set up with Babbage as president and Drinkwater as secretary. The committee had the power to add to its number and the hope was expressed that it would grow into a statistical society. An abstract of the proceedings was prepared but not printed by the Association because of the irregularity of the proceedings.\(^2\) However, formal recognition for the future was forthcoming and Sykes and Jones were encouraged to continue their researches.\(^3\)

Jones was to remain active for a little while longer in the movement but the political economists who soon became temporarily involved in the developing statistical society were in a more orthodox mould. Before Quetelet's

1. Lithographed signatures of the members who met at Cambridge, p. 90.
2. Diary.
return to Belgium he went to a dinner in London attended by, among others, Malthus, Nassau Senior, Thomas Tooke (of the Political Economy Club) and Babbage at which they discussed the issue of child labour in factories and "roulent généralement sur les questions politiques du jour".  
It does not require much insight to guess the tenor of the opinions expressed. Thomas Tooke was chairman of the Royal Commission which was about to deliver itself of the verdict that "all legislative interference with the disposal of labour extending beyond the age of childhood, properly so called" was out of the question.  
Nassau Senior was in charge of the Poor Law Commission and was greatly concerned about the parlous state of the poor laws. He wrote to Quetelet in 1833 a revealing letter which, since it is previously unknown, deserves to be quoted in full:

"You appear to have got through your revolution more quietly than could have been hoped - and to have settled down into a quiet government under a sensible King, and with a low taxation very successfully.

We are in the midst of ours. How it will end I know not! I hope as well as yours. If it were not for our dreadful poor law abuses and difficulties I should have no fears - but they have brought us into such a state in which nec mala nec remedia ferra possimus. You will be astonished, when you see our evidence, that society can hold together under such circumstances."

2. Employment of Children in Factories. R.Comm. Second Rep., pp.5-6; GBPP 1833 XXI. The report was dated 13 July 1833.
3. Quetelet papers, Nassau Senior to Quetelet, 12 March 1833. Senior wrote about thirty letters to Quetelet over the period 1831-51 which have survived. One expresses his views on the Irish famine.
For Nassau Senior it was thus essential that the poor law inquiry should come to the right conclusions. His own attitude to statistics was a curious one since he believed implicitly in the deductive method; he was later to write to Quetelet that "I do not consider the truths of political economy as founded on Statistical facts, yet its illustrations generally are". 1 Political economy, or Nassau Senior's version of it, was, therefore, more akin to the godhead than to modern economics. Perhaps this explains why, as Mark Blaug has rightly pointed out, there is in the 1834 Poor Law Report no "hint of a quantitative view of the problem" of the poor. 2 Senior's own grasp of statistics may be seen in the argument he used to prevent an alteration in the Poor Law Amendment Bill (ironically, one of the very few instances where it can be shown a statistical argument had an important effect on major legislation). Lord Ellenborough wished to make it possible for the authorities to grant relief at their discretion to those over sixty. This would, in Nassau Senior's opinion, turn the aged into paupers so he looked up John Rickman's life tables for Essex in the period 1813-30. They showed that out of 5643 who survived to age twenty, 2670 survived to age sixty. Hence, concluded Senior, nearly half of the adult population were over sixty. At a hurriedly convened conference of Ellenborough, Wellington, Salisbury,

1. Cuctelet papers, Nassau Senior to Quetelet, September 1841. On a number of occasions he confessed himself unable to understand Cuctelet's works.
Lansdowne, and others in the Lords' robing room Senior revealed his dreadful news that, not only the aged, but the whole country would be pauperized by the amendment. Ellenborough then withdrew it.¹

Clearly with Nassau Senior and statistics it was very much a case of the blind leading the blind. But for the moment nobody was leading anywhere so far as the statistical society was concerned. Jones wrote to Babbage that Thomas Chalmers of Glasgow was keen to activate the Statistical Section next year at Edinburgh but neither Jones nor Babbage expected to be present. However, Jones asked Babbage to

"keep them up to it as far as may be done without unreasonable trouble and keep the section alive at least for Chalmers ... perhaps Drinkwater and you may do more if you are so minded".²

Perhaps. Nothing was done until the end of the year when the question came up again in Babbage's mail. Francis Place had expressed an interest in helping to form a society.³ Possibly Babbage was spurred by the need to preempt the Benthamites and retain control in the hands of himself and his friends. What is certain is that by late January 1834 enough had been done for G.R. Porter, as we have seen growing disillusioned with the possibilities of the Statistical Department of the Board of Trade, to

1. Nassau Senior, "An Account of the Conferences on the Poor Law Amendment Act", University of London Ms.173, ff.214-8. Senior was proud of this triumph of science over sentimentality.
2. B.M. Add.Mss.37188, ff.4-5, Jones to Babbage, 3 July 1833.
write promising support and stating that Poulett Thomson, J. Deacon Hume, Charles Knight, and Chadwick had expressed a wish to join.¹

Babbage and Drinkwater went ahead and began to make more formal arrangements. As secretary Drinkwater did most of the work but certain people, such as Malthus and Hallam, were left to Babbage to bring in to the fold.² Personal contacts were in fact crucial. Hallam, for example, was responsible for obtaining the adherence of the Marquis of Lansdowne.³ Others, perhaps not always desired, offered their services.⁴ A meeting was held in late February attended by Babbage, Malthus, Jones, Sykes, Drinkwater, G.W. Wood (a Liberal M.P.), William Empson, William Ogilby, William Wolryche Whitmore, and Edward Strutt - all the new members being familiar figures in reforming organizations like the S.D.U.K. as well as being Whig or Liberal in politics. It was decided to form a statistical society and a number of people were mentioned

1. B.M. Add.Mss.37188, ff.175-6, G.R. Porter to Babbage, 22 January 1834. It should be noted that Porter felt it necessary to explain that Chadwick was one of the poor law commissioners. Chadwick played no part in the formation of the society and did not join until June 1834.
2. Ibid., ff.218-9, Drinkwater to Babbage, 8 February 1834.
3. Ibid., ff.126-7, Hallam to Babbage, n.d.
4. Ibid., ff.218-5, Howard Elphinstone to Sykes, 6 February 1834. Ibid., f.259, Joseph Hume to Babbage, 17 March 1834. Babbage's friend and patron, the Duke of Somerset, wrote: "I hope they will not admit objectionable characters, that drive away quiet people. Men who are always endeavouring to push their way into what they call good society, who are to be seen everywhere, who know the world, but never try to know anything else" (ibid., ff.266-7).
as likely to join. A public meeting was called for 15 March 1834. ¹

A prospectus was drawn up (by Jones - not Hallam as the centenary history states) and the Marquis of Lansdowne approached to preside at the public meeting. Drinkwater made out a list of some 250 men who might join and they were sent copies of the prospectus.² In order to present a non-political face to the public a few prominent Tories were secured. The first motion of the meeting that "accurate knowledge of the condition and prospects of Society is an object of great national importance not to be obtained without a careful collection and classification of Statistical facts" was moved by a politically balanced team of Henry Goulburn and Francis Jeffery. Babbage and Jones then moved the formation of the Statistical Society and Babbage, Jones, Hallam, and Drinkwater were constituted a provisional committee.³ Lansdowne promised the assistance of government and hoped that this would be reciprocated.⁴

With this meeting over it was a matter of drumming up as many names as possible. Desirable Members of Parliament, overwhelmingly Whigs and Liberals, were canvassed for support.⁵ E. Carleton Tufnell was obtained as one of the

2. The list is in the Diary.
3. MSSL, I, ff.2-3.
   Literary Gazette, 22 March 1834.
5. B.M. Add.Mss.37188, ff.274-5, Drinkwater to Babbage, 21 March 1834, for a list W.W. Whitmore was to take down to the Commons.
secretaries. Tufnell was another Drinkwater: assistant poor law commissioner, factory commissioner, he had also argued that the factory system was not unhealthy and wanted only the education provisions of the 1833 Factory Bill since by them "all would be done that human legislation can do".¹

Despite this progress all was not ready for the planned first meeting which was deferred until the beginning of May.² When the meeting was held it considered the prospectus originally drawn up by Jones which had already been amended. The prospectus began with a stern injunction to the society to take as "the first and most essential rule of its conduct to exclude all opinions". Having crossed that insuperable hurdle with all the ease of an organization which had not yet done anything the studies of the society were divided into four groups — "economical", "political", "moral and intellectual", and "medical". Once it had been found out from the Statistical Department of the Board of Trade what might usefully be investigated sub-committees were to draw up schedules of questions, a task that was expected to occupy most of the society's time in the first year. The hope was also expressed that more local societies would spring into being which could then circulate the questionnaires and collect them.³

2. MSSL, I, f. 3.
3. Ibid., ff. 4-8. The division of statistics followed the plan put forward by Jones at Cambridge.
The clause excluding "opinions" was repeated when the society chose the emblem of a wheatsheaf with the motto "Aliis Extenderum" signifying that it collected facts the conclusions from which were to be threshed out elsewhere. This self-denying ordinance was mainly due to Henry Hallam who had "apprehensions that politics would creep in among us, that we should be engaged in speculations not simply theoretical and philosophical". Hallam, though a Whig, was a conservative one. He had had strong reservations about the Reform Bill and perhaps, therefore, he was suspicious of the intentions of the more radical men around him. But had the clause been observed, as one leading member noted twenty years later, the society would have been a club for numerate drudges "accumulating facts idly and unprofitably".

Yet the clause passed into the rules of the society and the idea it embodied was long to influence the statistical movement. With the clause approved the meeting could move on to consideration of the draft constitution prepared by the provisional committee. It was passed with minor amendments. The society was to have a council of thirty-one members including the president (who could not hold office for more than two years running), four vice-presidents (nominated by the president), a treasurer, and

2. Ditto Lord Overstone, ibid., p.103.
three honorary secretaries. The council had the power to appoint committees. The number of fellows was unlimited but a new fellow could be elected only after nomination by two fellows. The membership fee was two guineas a year which could be compounded for life for twenty guineas. There was also to be a separate category for foreign members (corresponding membership was added later).¹ The organization bears a close resemblance to that suggested by Jeremy Bentham for a "Statistic Society" in 1831 but it is extremely unlikely that the provisional committee knew of this.² There was nothing unusual about the form of the society and Bentham, as elsewhere, was expressing common ideas.

The newly elected council certainly was not Benthamite. Rather it represented an attempt to fit everybody in who had some claim to be there. Surprisingly, those responsible for the creation of the society did not dominate the offices: Lansdowne was president (starting a long tradition of choosing the president for his name and prestige), Hallam treasurer, and the three secretaries were Tufnell, Charles Hope Maclean, and Woronzow Greig.³ Maclean was yet another assistant poor law commissioner and a lawyer. Greig was the son of Mary Somerville by her first marriage and was descended on his father's side from the famous

¹ MSSL, I, ff.8-14.
² See Bentham papers, CXLIX, ff.237-53. The papers are in University College London.
³ MSSL, I, f.16.
family of Russo-Scottish admirals. He was an old associate of Babbage's in politics.

Babbage led the rest of the council with Drinkwater, Jones, Sir Charles Lemon, Malthus, Porter, Nassau Senior, Sykes, Thomas Tooke, Whewell, and others. The council soon met with only Whewell absent. Committees were formed according to Jones's plan plus a committee on colonial statistics which was quickly merged with a correspondence committee set up to arrange plans for communicating with provincial societies. All seemed to be going well and the membership soon passed the three hundred mark (it was over two hundred before the first meeting of the society). Tufnell wrote to the Manchester Statistical Society to inform them that plans were being drawn up for systematic correspondence between the London society and the provincial societies (of which there was actually only one at the time of writing).

All was not well. Whewell complained to Quetelet "we are somewhat embarrassed by the extent of our subject." Nothing ever came of the scheme for "systematic" correspondence even when there were societies to correspond with.

1. The other members of the council were William Burge, Rev. George D'Oyley, Howard Elphinstone (who had asked to be on and had to be let on because of his connections), Earl Fitzwilliam, Henry Goulburn, Joseph Henry Green (the surgeon), Edmund Halswell, Francis Bisset Hawkins, Francis Jeffery, John Lefevre, the Bishop of London, Samuel Jones Loyd (later Lord Overstone), Lord Sandon, Poulett Scrope, John Sims (M.D.), and Thomas Vardon (the clerk of the House of Commons).

2. Minutes of the Council of the Statistical Society of London, I, ff.1, 3 (hereafter MCSSL). The first two meetings were 5 May and 19 May.

3. Appendix to the Minutes of the Manchester Statistical Society, f.10. The letter was dated 27 May 1834.

4. Quetelet papers, Whewell to Quetelet, 4 August 1834.
It was unlikely to while the London society took the view that others were to be little more than its agents. The initial spurt of attendance at the council meetings soon dropped away. Thirty out of thirty-one attended the first meeting, eighteen the second, thirteen the third. Average attendance at the next eight meetings before the summer recess was eight with one meeting failing to reach the quorum of five. Those who had been included for their names and prestige largely ceased attending. The average attendance at the eighteen meetings of the council from October to the end of the 1834–5 session was 6.4 with the quorum not reached twice and barely reached on another five occasions. Twelve members failed to attend one of these eighteen meetings and another eleven attended one to four times. For its continued existence the society was dependent upon the other eight—Hallam, Greig, Maclean, Drinkwater, Porter, Sykes, Tooke, and Vardon—all of whom attended at least nine times. One foretaste of the future was the fact that Porter headed the list with seventeen appearances at the last eighteen meetings.

Yet the society kept growing. By the time of the second annual meeting in March 1835 there were 398 fellows, ninety-nine of whom had been added since the previous May. The finances were flourishing and a paid assistant secretary was appointed. The real difficulty, as council attendances had shown, was getting people to do something beyond pledging their names in a worthy cause. In addition,

1. MSSL, I, ff.17-19.
the early papers read to the society were not of a high standard. Maclean read a report on the 1834 meeting of the Statistical Section of the British Association. Greig gave an impressionistic paper "On the character and present condition of the Irish labourer" which was full of "opinions" but practically devoid of statistics, while the third paper printed in the Proceedings was on the accounts and depositors of the Devon and Exeter Savings Bank. Then William Jacob took his 1832 Board of Trade paper off the shelf, Vardon was asked to give a paper on the state of parliamentary representation, while Drinkwater began a series of intensely boring papers based on a book on the statistics of Venice. Porter commented on a work on Spanish statistics, the assistant secretary on a manuscript on the statistics of Odessa. This left Sykes to come somewhere near the heart of the society's business with a rather superficial paper "On the Increase of Wealth and Expenditure in various Classes of Society, as indicated by Official Returns". And that was all. Odessa, Venetia, and the Devon and Exeter Savings Bank no doubt had their place in the society but scarcely as a substitute for serious investigation of the many crucial social and economic issues of the day. The society had succeeded in trivializing itself at the first attempt.

1. For summaries of these papers see Proceedings of the Statistical Society of London, I. The Proceedings predate the more well-known Journal.
Even an early indication of better times to come was a failure. Porter tried to use the society as a substitute for the Statistical Department by getting it to sponsor a national survey of savings banks. In January 1835 a form of return drawn up by Porter was agreed to by the council. A month later Drinkwater and Greig were asked to find barristers willing to circulate the forms while they were on the legal circuits. The 1835-6 session began with an admission that this had not worked and it was resolved to contact the provincial societies while a number of members were to try to distribute these forms in their home areas. Some three months later it was agreed Porter should send the forms to certain Irish savings banks. Then, as a last expedient, it was decided that the remaining undelivered forms should be handed over to the parliamentary members of the council for franking under parliamentary privilege for circulation. That was the end of Porter's first venture. Yet it was largely from a group centred on Porter that the revival (or, more accurately, the true foundation) of the society was to come.

That time was not at hand in 1835. The council spent over a year discussing some questionnaires, drafted by

1. MC3SL, I, f.21 (14 January 1835). It was about this time that Porter's assistant at the Board of Trade, Rawson Rawson, joined the society.
2. Ibid., f.28.
3. Ibid., f.40.
4. Ibid., f.53.
5. Ibid., f.58.
Rev. Edward Stanley, designed to elicit local information.
There were fears that some of the questions were not purely statistical and it was not until June 1836 that a schedule was approved.¹ Two thousand copies were printed but the council could think of nothing better than to approach the factory commissioners and the assistant poor law commissioners to distribute them.² Soon after Stanley had presented his draft the council had made what was tantamount to a recognition of its state of creeping infantile paralysis by asking its members to draw up questionnaires on their own special interests. Nothing much appears to have come of this.³

However, an optimistic report was submitted by the council in March 1835. Babbage reported to Quetelet "the Society prospers and continues its labours which you well know are necessarily slow".⁴ Perhaps there was an unwillingness to recognize the symptoms of premature decay for at the first council meeting of the 1835-6 session the committees were cast in the same form as the previous year with very little change in membership.⁵ Yet of the committees only one met, the medical statistics committee,

1. Ibid., f.100. Stanley had first submitted his proposals in January 1835.
2. Ibid., f.105.
3. Ibid., f.26 (23 January 1835). Nassau Senior put himself down for the condition of the labouring classes, Jones for rent, Whewell education and literature, Porter crime, savings banks, and agriculture, Drinkwater machinery and manufactures, Samuel Jones Loyd currency, and Sykes "a selection from Mr. Stanley's paper".
4. Quetelet papers (27 April 1835).
5. LCSSE, 1, f.38. The changes were mainly those required to allow for the changed membership of the council.
which busied itself with the inevitable circulars and the rather more valuable business of obtaining alterations to the Coroners' Bill at that time before Parliament.\(^1\)

Despite some improvement in the standard of the papers read at the ordinary meetings of the society the downward drift as a whole continued. So little had been done that in July 1835 it was decided not to make a report to the British Association for the Advancement of Science.\(^2\) Attendance at the council meetings was even worse than the previous year. Average attendance at the twenty-four meetings was 6.1 with a quorum failing to assemble four times and a bare quorum or only one over ten times. There were never more than nine present. The low point was reached in the winter session of 1835-6. Three times in five meetings up to mid-December the quorum was not reached. Worst of all, at a meeting attended by the hard core of Sykes, Maclean, Porter, Tooke, and Greig, it was found that there were no papers ready for the next meeting.\(^3\) The hat, so to speak, was passed round and Greig dropped in a paper on an Italian book on the geography and statistics of Morocco which was the last paper of the 1835-6 session. Porter also promised a paper, which turned out to be the first of the 1836-7 session, on the Danish bills of mortality for 1834.\(^4\) At the next meeting of the council Greig and Porter must have reflected on their generosity for

1. Ibid., f.56.
2. Ibid., f.61.
3. Ibid., f.71 (27 November 1835).
4. See Proc. SSL, I.
they were the only two to turn up.¹

Even so a brave face was put forward at the third annual meeting in March 1836. The council were able to report that the total membership had remained roughly stable at 392. It had to confess, however, to failure to establish its claim for accommodation in Somerset House. The lack of achievement in the general affairs of the society was put down to the inevitability of slow progress at first since statistical investigations took time. It all had a faint air of unreality, especially since the report purportedly came from a council of thirty-one members but was read to an annual general meeting where perhaps no more than twenty-four people were present.²

Despite the self-deception it was the third annual general meeting which almost imperceptibly began a process of reinvigoration which gathered pace later in the 1836–7 session. Drinkwater, too busy with government affairs, had resigned from one of the secretaryships in February 1836. His place was taken by the young and active Rawson Rawson who, on and off, was to be an important figure in the society for the next fifty years. This was a start, but only a start. The committees again went unreconstructed. But in April the council gave evidence of

1. MGSSL, I, f.71.
2. The minutes of the society record that at this meeting each member of the new council received twenty-three votes except for a twenty-two to one split for two nominations. Allowing for the chairman this would suggest twenty-four fellows present (MGSSL, I, f.37).
renewed vigour when at a meeting attended by thirteen members it was decided to commence a statistical account of London. The aim was to collate and condense existing material and then proceed to the collection of new information. It was also decided to start a record of contemporary statistics.¹

The thrust was continued when a select committee of Holt Mackenzie, Porter, Rawson, Vardon, Redgrave (of the Home Office), and Greig was set up to supervise the preparation for publication of the statistical account of London. The work was to be aided by a £100 grant to the committee.² Both proposals seem to have come from Holt Mackenzie who had a particular interest at the time in the food consumed in London.³ With the apparent loss of interest by Mackenzie after June the project for a statistical account lapsed.⁴

This setback to the slowly developing renaissance occurred just before the summer recess of 1836 so that the society remained motionless in the doldrums for some months. Then, in December, the necessary process of appraisal of the failures of the previous two and half years began with the creation of a committee on a motion from Porter. It was this act which marks the dividing line between the

1. MGSSL, I, f.94.
2. Ibid., f.97a.
3. He gave a paper on the subject in June.
4. He attended eight of the first ten meetings of the council but then failed to attend another in the 1836-7 session.
first and barren phase of the society's existence and its effective reconstitution as an agent for the discussion of social and economic statistics as well as the occasional prosecution of projects of its own. The next few years were by no means ones of uninterrupted success but they contrasted greatly in character, personnel, and achievement with the first two years. Had the renaissance not taken place the London society might have gone the way of all the rest, except Manchester, and disappeared.
Chapter V.

The Statistical Society of London:
the improved society.

The committee appointed on Porter's motion in December 1836 comprised Porter, Hallam, Rawson, Sykes, Vardon, and two recent additions to the more active members, Dr. Nathaniel Lister and W.J. Blake. Its function was to consider the existing construction of the committees.¹ The committee's report was presented to the council in February 1837 and was a sad but realistic appraisal of the society's early history. It pointed out that of the five committees originally created one had never met. Three of the others had ceased to make a quorum after a few meetings and disappeared into a nominal existence. Only one (the medical committee) had continued to operate at all. None of them had reported to the council at the end of the first year. They had, therefore, been given the power to coopt but still nothing had been presented for approval to the council. One reason was apparent: "the terms in which the committees were first appointed were too vague and extended". The society, in other words, had to recognize that it could not mount a full assault on the complete array of statistics. By attempting less it might achieve more. The report recommended that in future five or more fellows who wished to work on a specific topic

¹ MCSSL, I, f.117.
should be allowed to propose to the council their formation into a committee. In addition, it was proposed to appoint a committee to prepare a digest of the parliamentary papers.¹

The process of self-criticism was continued at the annual general meeting the next month. It was reemphasized that the range of proposed topics in 1834 had been vast. The outcome had been a bar to the understanding of what was possible. Furthermore, the council report argued that there were inherent difficulties in statistical studies, difficulties which had not been fully recognized. The first was the large amount of time and effort required. Nor could that time and effort be devoted to personal aims since all "speculative matter" had been excluded. It was the council's view that this had deterred many people from personal involvement.²

Underlying the council's report (and the committee's) was a realization of the limitations of the men responsible for founding the society. We may be more explicit about these than it was possible to be in 1837. The founders were well suited to set up a prestigious society but not to the task of carrying on its work. Babbage was quick to lose his enthusiasm for statistics and became more and more involved in his calculating machine. In a letter to Quetelet in April 1835 he spent one page on the society

¹. MCSSL, I, ff.129-30.
². MSSL, I, ff.38-47.
and three on the calculating machine and the alleged unfairness of the government in not providing more funds. The next year Porter described him as "overwhelmed with his various pursuits". Babbage's role became that of an elder statesman. That chance never came Malthus's way, of course, for he died shortly after the society's foundation. Jones's activity in the society underwent a great reduction after his appointment to succeed Malthus in 1835. In 1836 he was involved in the passage of the Tithe Commutation Bill and was subsequently made one of the ecclesiastical commissioners. Perhaps most significant was what Disraeli called "his notorious Epicurean habits" which, with his other pursuits, took up all his time, as well as an income of £2000 a year. Drinkwater was also too busy and was never a serious statistical investigator anyway. He played no part in the society after 1835, by which time his career as an official inquirer into social problems had come to an end. Nassau Senior was never interested or concerned enough to do anything and had taken part only at the moment of creation of the society. Tufnell seems to have been completely bound up in his own work as an assistant poor law commissioner and as a

1. Quetelet papers, Babbage to Quetelet, 27 April 1835.  
2. Quetelet papers, Porter to Quetelet, 20 December 1836. Also see Babbage to Quetelet, 12 August 1838: "I have been so heavily employed on the great Calculating Engine that I have neglected my best friends".  
3. Robert Blake, Disraeli, p.325. Disraeli described him as "a warm adherent" of the Liberals and refused him a pension when the commission ended.  
4. He later went to India.
crusader against trade unions. Hallam was willing and interested but not in a position to do a great deal himself as an elderly historian. Tooke was also a regular attender (and was to remain so) but, despite his work on various royal commissions, he did all his private research on monetary issues and did it alone.

Thus, with the exception of Hallam and Tooke, the founders had withdrawn from active involvement by the start of the 1837-8 session. This was recognized at the end of the session when Drinkwater (now known as J.E.D. Bethune), Jones, and Senior were dropped from the council. Babbage remained for another year though he attended only one council meeting in these two years. Thereafter he occasionally served when asked (his interest was briefly re-aroused in the early 1850's with the international statistical congress movement). The old guard disappeared almost before they had appeared. The men who now came to prominence in the society were a more professional group, frequently considerably younger, not always as uniformly placed as politically active Whigs or Liberals (though often participating in various reforming organizations and pressure groups). They were led by Porter and Rawson, backed by Maclean. With so many of the founders gone and with his official position as fulcrum Porter was well placed to exert considerable influence on the society. He must also have been by this time thoroughly disillusioned with the statistical possibilities of the Board of Trade.

Rawson was the perfect foil, adding exceptional
energy and industriousness to Porter's experience and influence. He had entered the society in March 1835. Within a few months he was delivering a homily on the collection of statistics and the need to attend meetings of sub-committees to the fellows.¹ Like Porter he was committed in the late 1830's to a national system of education and was at this stage of his career a fervent believer in the ideology of "improvement" that was the common intellectual ground of the statisticians. In the first number of the Journal he made it clear that his hope was that

"statistical investigations may be rendered available to the best of all purposes, that of improving the condition, increasing the health, and diminishing the sufferings and mortality of our countrymen".²

Though dogmatic on many points, he was, significantly, no slave to even the most sacred of the laws of political economy. At the beginning of 1838 he read a paper on two Belgian charitable institutions which tended to the conclusion that they had been successful in removing indigence.³ The paper met with unfavourable comment from

"one of our associates famous for his knowledge of Political Economy [who] stated that the system followed in this Establishment must have unfavourable effects on the independent industry of the town. I replied to him that the commission had announced that mendicity had been eradicated, to which he

2. JSSL, I, 1839, p.444.
replied that this Establishment could even have caused a large part of this mendicity". ¹

The political economist, who was most likely Tooke, represented the attitudes which had dominated the society at the outset. With men like Rawson taking control the hold of orthodox political economy was weakened.

It must be emphasized that this is not to say that there was not a recognizable set of attitudes which characterized the active members of the society. Porter, for one, was a politically motivated man. Apart from his well-known free-trade views,² he was active in the Central Society for Education (as was his wife). He shared the ideology of improvement with Rawson, arguing that the purpose of educating the ignorant was "to render them wiser and better, and therefore happier beings".³ His zeal for education was to lead him into anti-clericalism, which he vented in a letter to Quetelet:

"our church is, as you know, enormously wealthy and therefore very powerful - it fears, and with great reason, that if the people were instructed in matters which it imports them to know, the power of the Church would be lessened and its wealth also".⁴

This was the man who had been trying to improve the social statistics collected by the government and who was now to

1. Quetelet papers, Rawson to Quetelet, 22 January 1838. The above is a translation from the original French.
2. See Lucy Brown, op.cit., passim.
4. Quetelet papers, Porter to Quetelet, 4 June 1839.
dominate the statistical society. It was Porter who presented to the society a facsimile copy of Magna Carta which was to be framed and hung in the meeting room.¹

Between them Porter and Rawson greatly influenced the direction the society took between 1837 and 1842. Papers which needed to be vetted were usually referred to them.² Even more important was their control of the new venture which was begun in the 1837-8 session, the Journal. Since its inception the society had published brief summaries of its meetings under the title of the Proceedings of the Statistical Society of London. There had also been an ill-fated attempt to publish a journal containing some of the papers presented at the meetings in full. Volume one, part one of these Transactions was published in 1837 arising out of a decision taken the previous March to set up a committee to make a selection of the papers.³ The ordinary printing of the society was causing some difficulties in mid-1837 when it was transferred from Knights to Clowes.⁴ At the end of the year it was resolved to come to an arrangement with the proprietor of a new private statistical journal who would include the proceedings of the society.⁵ These negotiations were soon terminated.⁶

¹ MCSSL, I, f.172.
² For example, papers by William Felkin in 1837, James Heywood in 1838, and Alexander M. Tulloch in 1838. When Joseph Hume suggested accounts of the trade of the major cities Porter and Rawson were constituted a committee to consider the question.
³ MCSSL, I, f.48.
⁴ Ibid., f.147.
⁵ Ibid., f.163.
⁶ Ibid., f.168.
Nothing further happened until after the election of a new council in March 1838 when Sir John Boileau, James Heywood, and Rawson were appointed as a committee to negotiate with Charles Knight over the proposed formation of the society's own journal.1

It was quickly decided to publish and Rawson was appointed editor. To supervise affairs over the summer a publications committee was set up which included Porter.2 Highly favourable terms were arranged by which Knight assumed the risks of publication for the first year, the society taking 500 copies at two-thirds the usual price. While the liabilities of the society were thus limited to some three hundred pounds or so, any profits were to be shared.3 The terms may have been too favourable for publication was transferred to Clowes in 1842 after Knight got into financial difficulties.4 Finally, Rawson was appointed the paid editor at £75 a year, a salary and a post he held in conjunction with his Board of Trade duties.5

With Porter and Rawson at its head the society was entering a period of creativity. The fourth annual report, written by Maclean and Rawson, had a most confident tone that had not been heard since the euphoria of the foundation. The council felt that

1. Ibid., f.186.
2. Ibid., ff.187-8.
3. MSSL, I, f.67. The terms of the contract were not published in the Journal in the fourth annual report.
4. MCSSL, I, f.333.
5. Ibid., f.226.
"a review of the proceedings of the past year affords them much reason to congratulate the Fellows of the Society on its progress, and on its continually improving prospects of usefulness, arising from an evident increase of activity and consequent extension of operations". 1

The proof was the commencement of a second phase of committee activity which, in contrast with the first, led to some solid achievements.

The first of the new committees had been set up before the revival had really gathered momentum, in January 1837. It was on criminal statistics and the core of the committee consisted of Porter, Rawson, and Samuel Redgrave who was the official at the Home Office in charge of the preparation of the annual tables of criminal statistics. 2 Despite the strength of the committee it accomplished little. It tried to draw up tabular forms for collecting information concerning criminal offenders, as well as wishing to correspond with the police commissioners, but the committee faded away with no publications to its name. 3

The same could not be said of the second creation of the new phase, the education committee. This was set up in July 1837 on a motion from Sykes. The rest of the committee comprised Porter, B.F. Duppa, Rawson, and Nathaniel Lister with the power to coopt a further two members. 4 It was thus strongly biassed towards the opinions of the Central Society of Education since Porter was a leading member and

1. JSSL, I, May 1838, p.5.
2. FCSSL, I, f.123.
3. JSSL, I, May 1838, pp.6-7.
4. FCSSL, I, f.156.
Duppa was honorary secretary and editor of the Central Society's publications. The committee's function was to digest the reports and supervise the activities of a paid agent who was to do the actual work of the inquiry. The agent initially appointed was named John Caldwell. Unlike so many earlier committees it got quickly down to business and by the end of 1837 it was able to present an interim report (on the St. Martins-in-the-Fields and Strand poor law unions). The first report on Westminster was soon completed and two thousand copies were printed. Five parishes and 116 schools had been covered.

The survey was then extended to two other parishes in Westminster, St. John's and St. Margaret's. The second part of the inquiry was more extensive than the first though it should be noted that it was essentially derivative of the studies carried out by the Manchester Statistical Society in both method and conclusion. The London Society was a latecomer to such surveys and this is apparent in the published second report of its education committee. By the end of 1838 a third and final report

1. Ibid.
2. *Education of the Poorer Classes in England and Wales*, Sol. Ctt, Mns of Ev., p.26; GBPP 1837-8 VII. I have no information about Caldwell.
3. MCSSL, I, f.168.
4. Ibid., f.176.
6. See JSSL, I, August 1838, pp.193-204, 298-315. For the parallel work of the Manchester Statistical Society see Chapter VI. The various education surveys are further studied in Chapters VII and XI.
on Westminster was ready and presented to the society. 1

This impressive progress was slowed down by the inevitable problem of finance. The Westminster surveys had cost the society some £95. 2 When Rev. Edgell Wyatt Edgell moved for a survey of the schools in either the City or Marylebone he was baulked by Woronzow Greig who succeeded in persuading the council to defer any further studies until the auditors' report for the past year. 3 Although the work was resumed the financial question continued to bother the society and at the end of 1340 Rawson moved for a committee to try to obtain a grant from the British Association. 4 Surveys were in fact carried out of the City and Marylebone but interim reports on them were not issued. It was not until January 1343 that the fourth report of the education committee was read, on the survey which had been made of Finsbury. 5 The committee itself was reformed in April 1343 with somewhat changed membership. 6 The new committee, however, had nothing more to do than to complete the report in hand on part of the Tower Hamlets. A fifth and summary report was prepared which covered the City, Westminster, Marylebone, Finsbury, and St. George's-in-the-East. 7 The rest of the work on the Tower Hamlets was postponed until the completion of

2. JSSL, II, April 1839, p. 130.
3. MCSSL, I, f. 212.
4. Ibid., f. 291.
5. See JSSL, VI, February 1843, pp. 28-43. The survey was completed in April 1842.
6. MCSSL, I, f. 371.
7. See JSSL, VI, August 1843, pp. 211-18.
the changes in the parochial boundaries in the area. In addition, the committee had been given £25 in the previous session, an amount sufficient only to cover existing debts. Consequently, after June 1843 the education committee ceased to meet and the survey of London went uncompleted.

The education committee had been from its foundation very much an instrument of the governing elite of the society. Not all committees came from this nucleus. The third committee founded in the society's renaissance was the committee on the "statistics of life". Its creation had been requested by six fellows, led by the eminent vital statistician, T.R. Edmonds. Only Nathaniel Lister and Dr. John Clendinning were on the council. The nature of the committee's immediate interests was revealed when they asked, in February 1838, for circulars to be sent out to all insurance offices. The actuarial activities did not last long for they aroused outside interest. Benjamin Gompertz, a prominent actuarial expert, wrote to Babbage about them and the upshot was the reactivation of a committee of actuaries (outside the society). For the meantime actuarial inquiries were left to them. It was not the end of actuarial studies in the society in our

1. Ibid., p.211.
2. JSSL, VI, May 1843, p.90.
3. MESSL, I, f.171.
4. Ibid., f.176.
5. B.M. Add.Mss.37190, f.391, Benjamin Gompertz to Babbage, 7 March 1838.
6. JSSL, II, April 1839, p.130.
period though we may suspect that to some extent the vital statistics committee had been the means to an outside end. The committee's terms of reference enabled new projects to be begun since it had been set up to study all kinds of vital statistics so as to point out defects in existing sources, suggest improved forms and methods, and recommend suitable aims.¹

With the actuarial work in abeyance the committee concentrated over the next two or three years more on the official vital statistics. As with the essays into criminal and educational statistics an important role was played by men in or on the fringes of the government bodies in the field. Very early in its deliberations the committee took up the question of the nature of the 1841 census. A report was presented in June 1838 proposing improvements on the procedures previously adopted and the council, led by Porter, encouraged the committee to further efforts.² Another report was prepared in April 1839 which recommended the setting up of a separate committee.³ Under Porter's prompting this was shortly done.⁴ Apart from Porter, Edmonds, and six others it was agreed that the new committee should also include Leonard Horner (the chief factory inspector) and William Farr once they had been elected to the council.⁵

2. MCSSL, I, f.196. The report was drawn up in March.
3. Ibid., f.224.
4. Ibid., f.228.
5. Ibid. The other members of the committee were Hallam, Holt Mackenzie, Clendinning, Boileau, Heywood, and Lister.
Porter sought advice from Quetelet on the best form for the census.¹ But it was not until April 1840 that the committee presented its report (by which time Farr was on the committee but not Horner).² The committee had gathered together information on the censuses of a number of other countries. They had also spent some time looking at Joseph Fletcher’s industrial census of Coventry made for the Royal Commission on Hand-Loom Weavers at a cost of £10. With this experience to hand the committee suggested a full census of age, sex, marital status, occupation, place of birth, religion, and health using the civil registration administrative areas and officers. The report specifically excluded the possibility of taking an educational census, though with regret.³

The report was, in effect, the work of the government’s own statisticians plus some of the best men outside the government. The committee’s estimate of itself was shown by the fact that the council wanted to get its report printed by the House of Commons.⁴ Meanwhile Joseph Fletcher, another government man, and now one of the society’s secretaries, prepared a draft census bill which was considered by the committee and then amended by Fletcher. In early June 1840 the council noted that the

¹. Quetelet papers, Porter to Quetelet, 25 September 1839. Rawson later wrote an official letter asking for information under certain heads (20 December 1839).
². Horner never, in fact, joined the council.
³. See JSSL, III, April 1840, pp. 72-102.
⁴. MCSSL, I, f. 258.
government had held up its bill to give Fletcher's draft "due consideration." Having given it, the preparations for the census continued with the Registrar-General, T.H. Lister, propounding a scheme to J.E.D. Bethune (Drinkwater) who was responsible for drafting the government's bill.

The administrative machinery envisaged by Lister followed that suggested by the census committee but Lister's view was that the information sought should be limited to "a few simple facts" so that "any sensible man who could read and write" would be able to act as an enumerator. This meant that the scope of the census would be no wider than the names, ages, places of birth, and occupations of the people.

Since it was likely that the use of the civil registration machinery would have occurred without any pressure from the society it was reasonable to conclude that none of its recommendations had greatly influenced the Registrar-General. This came as a shock. Somewhat stung, the council resolved to set up a committee of Sir Charles Lemon, Porter, Fletcher, and Rawson to "consider the

1. Ibid., ff.275-6, 277 (29 May and 12 June 1840).
2. For the official history see History of the Census of 1841. This manuscript has been in the possession of the General Register Office (where it was written some time in the mid-1840's) but is due to go to the Public Record Office. I do not know if T.H. Lister and Nathaniel Lister were related.
3. T.H. Lister to J.E.D. Bethune, 27 June 1840, reproduced in History of the Census of 1841, pp.1-6. The census of age was more detailed than before.
4. MCSSL, I, f.279 (26 June 1840). It should be noted that the council's reaction predated Lister's letter by a day. Lister's letter confirmed a conversation held a few days previously. Clearly the council kept itself very well-informed.
expediency" of preparing an abstract of the committee's report to send to all Members of Parliament. The committee never met since amendments to the government's bill were made in the Commons. The "attention of other influential members" of the society who were in the Commons had been called to the society's suggestions and credit was claimed for the amendments. While this may have been an exaggeration (and the amendments were minor compared with what the census committee had desired) the pride of achievement lingered on and the experiment was repeated in 1849-50 with a committee, including Farr, which recommended an educational census and sent a deputation to the Home Office. It has become one of the traditional functions of the society to make recommendations on forthcoming censuses.

The consideration of the census had required a separate organization from the vital statistics committee but the latter had not ceased functioning. A rather slim and unenlightening report was drawn up on the sickness and mortality among the metropolitan police force. An unsuccessful attempt was made to influence the Home Office on the forms used in coroners' inquests. Then, paralleling the work of Alexander Tulloch at the War Office,

1. MCSSL, I, f.280.
2. Ibid., f.282.
3. JSSL, IV, April 1841, pp.69-70. Also see Rawson to Quetelet, 28 August 1840; Quetelet papers.
7. JSSL, II, April 1839, p.130.
reports were made on the health of British troops in Asia. Tulloch's inquiries had not yet extended to that area so that when the late president of the Madras Medical Board, James Annesley, offered statistics on the period 1829-38 the committee accepted (persuaded by Porter and Rawson). Annesley supervised the preparation of the abstracts, Tulloch cooperated, and reports were produced which closely follow the pattern of Tulloch's official reports. Apart from this, the committee's major effort was a scheme to collect statistics from the superintendent-registrars. Though a promise of aid from the Registrar-General was forthcoming the scheme produced no results.

Nevertheless, the society's interest in vital statistics was strong throughout the 1640's and various other committees came and went. The first was begun by William Farr at the end of 1641 on "the best means of obtaining periodical enumerations of patients in London hospitals". It was a very strong committee including, among others, Dr. W.A. Guy, Edmonds, Tulloch, Sykes, Fletcher, Clendinning, and Rawson. An enumeration was carried out in January 1642 and a report published which covered the number of patients and their distribution by age, sex, and disease. But the main conclusion was the perennial call for better registers and more information. A second enumeration was carried out the following year and a

1. See JSSL, III, July 1840, pp.113-43 and IV, July 1841, pp.137-55. For Tulloch's work see Chapter IX.
2. MCSSL, I, f.319.
The committee continued in existence for a further year after the enumeration but once the second report was finished it disappeared.

Farr had also been involved in trying to use the society as a pressure group to push for the extension of civil registration to Scotland and Ireland. The campaign had a number of phases. The first began in late 1640 when Dr. W.P. Alison of Edinburgh wrote to state that a committee of the Edinburgh College of Physicians had been formed to consider ways of securing a registration act for Scotland and a government inquiry into the state of the poor in Scotland (Alison was interested in both issues). Rawson therefore moved the appointment of a committee to deliberate on the best means of extending civil registration to Scotland and Ireland. Farr, Fletcher, and Tulloch were also on the committee. Alison's committee sent down copies of their petition but the agitation died down without result. It was not raised again in the society until 1845 when the then Registrar-General, Major Graham, wrote a letter to the council. The contents were not specified in the council minutes but the outcome was the appointment of a new registration committee which included Graham and Farr as well as Sykes, Porter, Southwood Smith, Boileau, Heywood, Edward Romilly, Guy, Fletcher, and William

2. MCSSL, I, f.286.
3. Ibid., f.290.
4. Ibid., f.306.
5. Ibid., f.423. The letter was dated 28 February 1845.
Drummond Oswald. However, perhaps to Farr’s chagrin, Graham asked that the names of Farr and himself be withdrawn so that the society would be "uninfluenced". The first report of the committee was not printed but a second report was prepared in 1847 and printed the next year. Despite the impressive backing for the extension of civil registration the campaign failed.

Apart from some very minor enterprises this completes the endeavours of the society (as a body) in vital statistics in the 1840’s. But two more committees, apart from those already mentioned, had been set up in the flurry of activity in 1837-8. One of these was as unsuccessful as many of the other committees: the committee on strikes. It had been formed on a motion from Porter and Charles Hope Maclean in January 1838. It hoped to draw up accounts covering the previous fifteen years. For each strike the aim was to include the condition of the workmen at the time of the strike, the terms on which work was resumed, and "the permanent effects of the several disputes upon the character and condition of the workmen". The major figures on the committee were the familiar ones of Porter, Sykes, Greig, Maclean, and Rawson. A questionnaire was prepared in which the anti-strike bias nearly universal among the middle and upper-class reformers of the type prominent in the society was evident. The questions led towards the

1. Ibid., f.425.
2. Ibid., f.327.
4. MCSSL, 1, f.174.
desired conclusion that outside agitators were present and
that strikes caused an increase in crime, begging, degrading habits, and decreased attendance, while the workmen contracted debts, lost income permanently, and local trade was damaged. One paper was read on two strikes in the Potteries in 1834 and 1836 which expressed all these opinions, deriving satisfaction only from the fact that the men were forced to resume work after ten weeks on the employers' terms. That appears to have been the only product of the committee's efforts.

If the strikes committee represented the dominant ideology of the society at its least appealing, as well as the usual lack of results, the committee set up in May 1833 to enquire into the condition of the working classes shows its more productive and charitable side. It had been created on the motion of James Heywood and Porter and, like the education committee, derived from the example of the Manchester Statistical Society (with which Heywood had been associated). Apart from Porter and Heywood the members of the committee were Romilly, J.P. Kay, and R.A. Slaney (one of the members of the Commons most concerned with the health of towns). The committee received an initial grant of £25 to finance a survey in Westminster.

3. MSSL., I, f.194.
Rawson was later to explain that the purpose of the committee was to afford "exact data to those active and benevolent members of the legislature who are engaged in endeavours to ameliorate the condition of the working classes". Two agents were employed for a survey of the parishes of St. Margaret's and St. John's plus a third for part of the time. Over 16,000 people were included in the survey, the main outcome of which was to provide a well-documented attack on landlords for charging an exorbitant price for sub-standard accommodation. The solution was seen to lie in the foundation of what were later to be called "model dwellings" companies to provide adequate housing, at a profit, but at a lower rent than those normally charged. That was as far as the committee got for another £75 had been required to pay off its debts and a moratorium was put on its activities.

The problem of finance had become pressing soon after the society started active inquiries from late 1837 on. As we have seen, the education committee had required financial assistance from the British Association, from whom help had also been sought for the vital statistics committee. In its annual report in March 1842 the council had to report that it had been decided that no inquiries would be begun until the finances of the society were in a sounder state. The first three years of the society,

1. JSSL, III, April 1840, p.11.
3. MSSSL, I, f.235.
4. JSSL, V, April 1842, p.86.
when nothing had been done, had seen the accumulation of a large amount of stock from subscriptions compounded for life. There was usually a small paper debt at the end of each year which was more than covered by the normally sizeable amount of arrears in annual subscription.

With the financing of the new committees, above all the education and working classes committees, the reasonably healthy financial situation abruptly changed. Woronzow Greig, more concerned with financial soundness than statistics, moved a number of motions on the finances in February 1639, pointing out that the society had over-spent the previous year. Rawson, who but two months earlier had been mainly agitated by the fact that the housekeeper appeared to be raiding the stocks of cakes and biscuits, moved for an annual committee of finances. The state of the finances was not too serious at the March 1639 audit, with a good favourable balance once all outstanding debts and assets were allowed for. But the next year was a different matter. In March 1640 there was roughly £60 in hand in cash but debts of over £300. "Recoverable" arrears were estimated at nearly £160. The society was never in danger of bankruptcy with £870 in stocks, but the rapid deterioration gave good cause for concern. Over the next two years a policy of retrenchment brought outstanding debts down to less than

1. MGSSL, I, ff.214-5.
2. Ibid., f.208a.
3. Ibid., f.216.
"recoverable" arrears.  

The experience of the 1838-40 period spelt out the lesson that the society could not afford large surveys as well as its other expenses. Partially it was the society's fault for it was perennially dissatisfied with its accommodation. In the same annual report in which the council announced that no new inquiries would be initiated it was stated that the society was looking for new rooms - with hopes of a place "under the Crown". Government patronage was a frequently disappointed hope that lived long in the society - in 1885 Sir Rawson Rawson was still bemoaning the failure of the government to find the society a suitable place in public buildings. In 1842 a substitute was thought of in a scheme to share rooms with the Royal Society of Literature. The latter turned down the proposal, but the society tried again since they "felt great inconvenience, from the increased number of Fellows who attend their ordinary monthly meetings". With a further refusal, the society found new rooms in Regent Street. They cost £50 more per year, a debt which the council hoped would be covered by the increased membership resulting from more attractive facilities. The increased

1. JSSL, VI, May 1843, p.93.
2. JSSL, V, April 1842, p.87.
4. MCSGJ, I, f.346.
5. Ibid., ff.349-50.
6. Ibid., f.352.
7. Ibid., f.354 (16 December 1842).
8. The previous rooms had been in St. Martin's Place.
membership did not eventuate so in 1845 the society moved again.  

The new rooms were on the lower floor of the premises rented by the Council of the London Library.  

The council proudly announced a saving of £50 a year.  

This game of moving house should not be allowed to obscure the fact that a continuous programme of large social surveys was beyond the means of the society. The last such survey that it carried out began with a donation from Hallam in 1844 of £25 for a study of the London poor. It was decided to pick a bad area for the survey as "it might be more for the good of the labouring class to bring forward some less happily situated district."  

A supervising committee was formed of Hallam, Slaney, Lister, Fletcher, Guy, and Oswald. Work continued at a leisurely pace in St. George's-in-the-East over the next two years with the house to house inspection taking place in the summer of 1845. All this cost much more than £25 and in 1846 the society had to find over £50 (Slaney had contributed £10). The report of the committee was finally presented in April and May 1848.  

The committee made clear yet again the commitment of  

1. Membership peaked in the early 1840's at about 400 and remained roughly constant to the end of the decade.  
2. MCSSL, I, f.433.  
3. JSSL, IX, June 1846, p.97.  
5. Ibid., f.407.  
7. See JSSL, XI, August 1848, pp.193-249. The published report claimed that an average area, not one of the "lowest sinks", had been studied.
the society, at least its leaders, to the cause of reform, in this instance the sanitary movement. Indeed, in 1845 the Health of Towns Association was allowed to use the rooms of the society. Finally, in late 1847, Colonel Sykes read a startling item in the London City Mission’s magazine on the sanitary condition of Church Lane, St. Giles. A committee of Sykes, Neison, and Guy was formed to verify the accusations. Their report was an indication of how far the society had come from its early fears of "opinions". The area was labelled "a disgrace to a civilized country" so that even though "it is not properly within the province of your Committee to make suggestions ... they cannot refrain" from putting forward the recommendation that the wealthy should form housing associations. 1500 copies of the report were circulated among those influential "in removing such deplorable features".

The more open avowal of the reforming sensibilities of the society dated from the time of the renaissance begun by Porter and Rawson in 1837. From that time until the deaths of Joseph Fletcher and Porter in 1852 there was a considerable continuity and stability in the persons and attitudes dominant with the society. Twenty-eight men attended for at least three years more than one-fifth of the possible council meetings during the years from March

1. MCSSL, I, ff. 435-6.
2. MCSSL, II, f. 20.
3. Ibid., f. 21.
5. JSSL, XI, March 1848, p. 98.
1837 to March 1850. Forty-nine others also served on the council (which throughout these thirteen years remained fixed at thirty-one members). Thus the same names recur again and again in any description of the society's activities. In the late 1830's the society was dominated by Rawson Rawson, Thomas Tooke, C.H. Maclean, Sykes, and Porter with solid backing from Dr. Nathaniel Lister, Dr. John Clendinning, Holt Mackenzie, William Sturges-Bourne, James Heywood, Henry Hallam, Woronzow Greig, Herman Merivale, Sir John Boileau, Sir Charles Lemon, and Edgell Wyatt Edgell. Of this latter group no information could be found concerning Lister or Clendinning (beyond the fact that the latter was a physician at the Marylebone Infirmary while Lister graduated M.D. from Edinburgh in 1827). Edgell was rector of North Cray in Kent and ran a school there on novel lines.\(^1\) Heywood was one of the founders of the Manchester Statistical Society. Holt Mackenzie was a retired member of the East India Company who had served on the Board of Control. Sturges-Bourne was an old Canningite who had been a secretary of state in 1827 as well as being a member of the central commission of the 1834 poor law inquiry. Boileau was an archaeologist and well-known savant who was prominent in many intellectual circles. Herman Merivale was professor of political economy at Oxford and was later to become a prominent civil servant,

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succeeding Sir James Stephen at the Colonial Office in 1848.¹

Changes inevitably took place over the years but more in individuals than in types. Maclean died in 1839 and was replaced by Joseph Fletcher. He was nominated by Porter and Rawson and was very much out of the same stable.² He was secretary to the Royal Commission on the Hand-Loom Weavers and was to be secretary to the Royal Commission on Children's Employment. His father had been active in the British and Foreign School Society and the younger Fletcher became, in 1844, the official responsible for inspecting the schools of that society. In that post he was to find ample scope for his beliefs as, in Richard Johnson's happy phrase, a "cautious radical".³ He was an ardent educationalist and statistician and dominated educational statistics in the second half of the 1840's.⁴

On Rawson's posting to Canada in 1842 Fletcher became editor of the Journal and seems to have very much taken over Rawson's place as Porter's trusted confidant and workhorse of the society.⁵ By this time other changes had taken place with Greig giving way as one of the secretaries

1. Information on Holt Mackenzie, Sturges-Bourne, Boileau, and Merivale comes from DNB.
2. MCSL, I, f.240.
4. See Chapter XII.
5. He continued to hold the posts of secretary and editor after becoming a schools inspector.
first to Heywood and then to Clendinning. New men of some importance were William Farr from 1840, Sir Isaac Lyon Goldsmid from 1839, and John Bowring from 1840. Goldsmid was one of the leading British Jews of the time, a utilitarian who had helped to found University College London. His other main interests were in prison reform and the penal code. Bowring needs little introduction as one of Bentham's faithful disciples. He also acted as a roving commercial reporter for the government as well as serving on various commissions.¹

Such men as Goldsmid and Bowring were on the outer fringes of the governing circle but one man who rapidly found his way to the centre was William Augustus Guy. He entered the council in 1841 and replaced Clendinning as secretary in 1843. Descended from a long line of medical men he had graduated in 1837 almost immediately becoming professor of forensic medicine at King's College. In 1842 he was made assistant physician to King's College Hospital and was later to help found the Health of Towns Association.² He quickly came to associate on the council mainly with Sykes and, from 1846, F.G.P. Neison. Neison was actuary to the Medical, Invalid, and General Life Office and became something of the enfant terrible of social statistics in the 1840's. Like Guy he was a professional and viewed with distaste the dogmatism and fact-twisting of men of Chadwick's type. For Chadwick the ends of

1. DNB.
2. DNB.
investigation were more important than the means, whereas Guy and Neison represent perhaps the first examples in the society of men who, while still of reforming sympathies (particularly Guy), regarded accurate methodology as more important than justifying a preconceived theory. ¹

The other four men who came into varying degrees of prominence in the 1840's were William Drummond Oswald, James Whishaw, John Melville, and William Spence. Oswald was a man of no great fame, introduced by Heywood in 1843 to fill Rawson's vacant secretaryship. He served in that capacity for many years, dying in 1857. Whishaw was a lawyer, a Liberal of some little standing who had written in favour of Catholic emancipation and the Reform Bill. He served as a charity commissioner and joined the council in 1843. Melville is a grey figure who was voted on to the council in 1846 but did nothing of any note. He presented no papers nor served on any committees. Spence was an entomologist, a pillar of the Entomological Society and the Royal Society. He had written on political economy in his earlier years, following a protectionist line, but by the time he joined the council in 1847 he had not written on the topic for over twenty years. ²

These men fall into a number of groups. The basic division is between the active statisticians who dominated the society and the sometimes elderly men of good name and

¹ Neison first became prominent in late 1843 with an attack on Chadwick's methods.
² For Spence see DNB.
connections. The former included Rawson, Neison, Fletcher, Tooke (in a special sense for he never presented a paper), Guy, Maclean, Sykes, Porter, Farr, Heywood, Greig, and Edgell. Within this group there are occasional hints that there was a slight split between a predominantly governmental group and the non-official statisticians such as Sykes, Guy, and Neison. But the division was one of nuance rather than serious substance. Apart from the active statisticians there were the men of standing with whom may be included men like Lister and Oswald who played a useful role without being statisticians themselves. The men of standing had one common, though not universal, characteristic: age. By 1840 Hallam was sixty-three, Sturges-Bourne seventy-one, Goldsmid sixty-two, and Spence fifty-seven. Most of the others (such as Boileau and Bowring) were in their late forties or fifties. This may not seem to type them as aged but roughly where the notables left off in age the active investigators began. Porter and Sykes were easily the senior two at fifty in 1840. Rawson was still only thirty when he went to Canada in 1842, Fletcher twenty-seven when he joined the council in 1839, Guy thirty-one (1841), and Farr thirty-three (1840).

It was the activists who ensured the survival of the society beyond the 1830's and freed it from the particular environment of post-1832 Whig-Liberal orthodox political economy in which it had been founded and nearly foundered. Yet the base of the society remained narrow. In the 1844
Journal, for example, there were reports of Chadwick's paper on vital statistics and the sanitary idea; Neison's critique of Chadwick; two papers by Fletcher on the administration of London; a paper by Porter on railway statistics; a critique of the 1841 Irish census by Hallam; a paper in a series by Guy on occupational health; and a paper on the relationship of lung capacity to health. Fletcher had in fact prepared one of his papers at the request of the council who were concerned at the developing concentration on vital statistics. Nevertheless, the next issue of the Journal contained two papers on the health of the armed forces (based on the work of Tulloch and his associates); two short pieces on the Irish census of 1841; a paper on railway statistics; Neison's long paper on vital statistics; and another paper by Fletcher on the administration of London. Of the seventy-two papers read to the society from 1841 to 1850 (inclusive) exactly half were written by seven of the group of active statisticians plus the assistant secretary in the early 1840's (C.R. Weld). Of the papers, twenty-eight were on vital and medical statistics; seven on education and crime; three on the condition of the working-classes; five on railways (including accidents on the railways); nine were by

1. MCSSL, I, f.397.
2. The seven were Farr, Fletcher, Porter, Rawson, Sykes, Guy, and Neison. Fletcher led with thirteen papers. A further four papers came from committees including these men. The dominance would be marked if volume were taken as the guide.
Fletcher on the "municipal statistics" of London (largely non-quantitative discussions of the administration of London); and twenty were on a variety of miscellaneous topics. The last, except for a series by J.T. Danson on "commercial progress", were usually very brief.

The papers read in the 1840's were thus concentrated within a small number of topics and, as shall become clearer later, on a small range of questions within those topics. Nevertheless, they were of a much higher standard than those produced in the first three years of the society's existence. It must be recognized, however, that the achievements of the Statistical Society of London in the "age of enthusiasm" were considerably lower than its aspirations. It had survived, published useful work, and carried out a few surveys. The developing professionalism of some of its leading members was a presage of things to come. But most of its committees had done little or nothing and the rest had quickly run out of funds. Despite its nominal membership of around four hundred the active membership was a mere fraction of that figure. For its continued vigour the society relied on a clique whose number barely reached two figures. But for that clique the society would most likely have gone the way of the provincial statistical societies. Maclean and Rawson had argued in 1838 that a

"decisive proof of the just estimate which is formed of the value, and of the deep interest which is
felt for the result, of Statistical researches is presented in the continual formation of new Societies for the purpose of instituting enquiries of this nature".1

Perhaps a "decisive proof" of just how deep that interest was is the limited success of the London society and the almost complete collapse of the provincial movement.

1. JSSL, I, May 1838, p.8.
Chapter VI.

The Manchester Statistical Society.

The provincial societies lie at the heart of the statistical movement of the 1830's. The Manchester Statistical Society was the first to be founded. It was also far and away the most active as well as being the only one to survive throughout our period. It was created in September 1833 by a small group of middle-class friends mainly engaged in business in Manchester or the surrounding area. There are two important accounts of the foundation in print. The more well-known of the two is T.S. Ashton's centenary history of the Manchester Statistical Society, Economic and Social Investigations in Manchester, 1833-1933. As one might expect, this is an illuminating study for a centenary history but still has the faults of the genre. Moreover, Ashton's own intellectual standpoint led him to fail to appreciate the limitations of the society's ideology. A less serious defect of the book is the fact that for his account of the origins of the society Ashton relied entirely on an article written in the 1870's by T.R. Wilkinson.

According to Wilkinson the project was conceived by James Phillips Kay and William Langton who had been involved

in the foundation of the Manchester and Salford District Provident Society in March 1833 and were its secretaries. In the course of their work they were impressed by the lack of information on schools and other subjects. Langton raised the idea of a statistical society. Soon after, Kay went on a tour of Derbyshire with the industrialists Samuel and William Rathbone Greg and discussed the possibility of setting up a society with them. After their return another leading member of Manchester's commercial aristocracy, Benjamin Heywood, was contacted. He in turn invited his "influential friends" John Kennedy, Henry Newbery, Samuel Dukinfield Darbishire, James Aspinall Turner, Colonel Shaw Kennedy, Samuel and James Robinson and Henry McConnell to join the evolving society. They were soon joined by Rev. Edward Stanley (later Bishop of Norwich). 1

To this account Ashton adds some biographical material which shows the close inter-relationships of the founders and their prominent positions in Manchester society. But basically he does not go beyond Wilkinson except to suggest that the leading role played by bankers might be due to their concern with figures. 2 This rather banal remark is indicative of Ashton's inability to question more closely the motives of the founders who were seen as no more than a collection of local worthies who wished to study the working classes in order to improve

1. Ibid., pp.12-13.
their condition.\textsuperscript{1}

The first point to be made is to recognize that our knowledge of the sequence of events leading to the foundation of the society may be less firm than Ashton and Wilkinson imply. Their version is based on Wilkinson’s conversations with Langton some forty years later. Time not only blurs recollections but also lends personal enchantment to the view. It is noticeable that the Wilkinson account places Langton as prime mover and originator of the society. The provenance of this thesis cannot be accepted since it is based entirely on the septuagenarian Langton’s recollection of events which occurred when he was a young man. On one point his memory was demonstrably unreliable since the foundation of the Statistical Society of London was ascribed mainly to the efforts of the Earl of Kerry (the son of the Marquis of Lansdowne).\textsuperscript{2}

Nevertheless, it would be difficult to deny that Langton did play a significant part in the foundation of the society, if not necessarily the one that Wilkinson and Ashton accepted. Langton was born in 1803 in Preston. His father, Thomas was a merchant. After a varied education he went into business in the Russian trade in Liverpool in the 1820’s. He moved to Manchester in 1829 to take up the responsible post of chief cashier in Heywood’s bank.\textsuperscript{3} He had been concerned with the provident society

1. Ibid., p.11.
2. Wilkinson, op.cit., p.16.
3. DNB.
in Liverpool and it is, therefore, not surprising to find him engaged in the foundation of a similar organization in Manchester in March 1833.  

His fellow honorary secretary in the Manchester and Salford District Provident Society was James Phillips Kay. Kay was a medical man but his background was similar to Langton's. Born in Rochdale in 1804 his father had been a cotton manufacturer of presbyterian views. He received his medical training in Edinburgh where he frequently helped W.P. Alison at the New Town Dispensary. Kay went to Manchester in 1827 and in 1828 became senior physician at the Ardwick and Ancoats Dispensary. He was by this time a confirmed Liberal in politics as an anonymous pamphlet he wrote in 1831 showed. But the crucial experience of Kay's life was probably the cholera epidemic of 1832 which led him to set down his ideas on the condition of the working classes.

The Moral and Physical Condition of the Working Classes expressed ideas which were to be of great weight in the Manchester Statistical Society. It stressed the value of social self-knowledge to avoid "physical and moral evils". That self-knowledge was at a low level in Britain

1. Ashton, op. cit., p. 4.
3. Manchester, 1832. Dr. Johnson has pointed out that the first edition was more "voluntarist" in its approach to social problems than the second (Thesis, p. 36). All subsequent references are to the second edition reprinted in Four Periods of Public Education (London, 1862).
since "statistics are neglected". Until they were further developed the public would not be convinced of "the facts which they proclaim". The "facts" were evident. The progress of commerce was to the advantage of all and would "elevate the physical condition" of all people. Yet the trend was a long-term one and could be hidden in the short-term by "foreign and accidental causes". The first was the fact, often emphasized by historians since, that the "increase of the manufacturing establishments ... have been exceedingly more rapid than the growth of its civic institutions". But a more powerful or disturbing factor was the continued existence of fetters on the demand for industrial goods, notably the corn laws. With these fetters a reduction in the hours of labour would merely mean a reduction in wages. The answer lay in free trade.

Beyond this there was a great need for a general system of education so that the poor would be trained to use their leisure time and inculcated with the realities of "their political position in society, and the duties that belong to it".

Thus would be created a more moral society in which the evils of long hours, bad sanitation, working class agitation, improvidence and vice detailed in the early

1. Moral and Physical Condition, pp.3-5.
2. Ibid., p.49.
3. Ibid., p.50.
4. Ibid., pp.56-9.
5. Ibid., pp.59-63.
sections of the book would disappear. The middle classes were to lead Britain into this promised land. One of their functions was to found provident societies on the Liverpool model. More generally, the bourgeoisie were to be the new Guardians whose moral and sanitary influence would extend everywhere since

"they acquire by their charity, the right of inquiring into [the people's]arrangements - of instructing them in domestic economy - of recommending sobriety, cleanliness, forethought and method".

The model for the new style of benevolent employer was Thomas Ashton of Hyde.¹ Discontent, strikes, and the threat of revolution would be banished by such men as they directed society towards a rediscovery of the harmony of interests.²

Kay's notions of the functions and preconceptions of social investigations deserve space for they are typical of the provincial movement. For all his criticism of the sanitary state of Manchester, even of the long hours worked by the cotton operatives, his was a message with a powerful appeal to the industrial and commercial bourgeoisie. It was this class which was so heavily represented among the other men mentioned by Wilkinson, who together presumably formed the thirteen men who founded the society on 2 September 1833.³ The two Greg brothers who went on the tour of Derbyshire with Kay were such men. Samuel Greg

¹. Ibid., pp.64-5.
². Ibid., pp.71-4.
was a paradigm of the "improving" employers, Liberal in politics, who dominated municipal life. Born in 1804 he was the fourth son of Samuel Greg, the mill owner. Like all the Gregs he was educated at Unitarian schools and the University of Edinburgh and entered business on his own in 1832. At his factory he established a Sunday school, a gymnasium, drawing and singing classes, baths, a library, and, most indicative of all, an "order of the silver cross" for good conduct in young women.\(^1\) His younger brother, William Rathbone Greg, was born in 1809 and also went into business in 1832. He was later to win a prize from the Anti-Corn Law League and the Dictionary of National Biography noted that one of his distinguishing characteristics was "to discourage unreasonable expectation from political or even social reform". Greg wrote a short volume in 1831 which condemned long hours in factories.\(^2\)

How far this book represented the Greg's thinking in the summer of 1833 is a moot point. William's older brother, Robert Hyde Greg, was later to dismiss it as "written before he had any experience and scarcely any acquaintance with factories".\(^3\) R.H. Greg was deeply involved at this time in a propaganda campaign to prove that factory labour was not unhealthy and that M.T. Sadler's Select Committee of 1832 had slandered the Manchester

\(^{1}\) DNB.
owners. A Royal Commission had been appointed in 1833 to revise Sadler's findings. This did not mean that the factory owners were not still under serious attack. Ashley's factory bill was not defeated until mid-July. ¹

A milder bill, drafted by Chadwick, was introduced by the government and rapidly passed in August, but it was widely disliked by the masters. ² R.H. Greg had sent in a report on his mill in May stating that twelve hours work in a factory was not necessarily unhealthy, and that the cause of unhealthiness was not factory labour but "evils resulting from large towns and factory populations". ³ Greg also sent many "statistical documents" to the assistant commissioner for Lancashire, John W. Cowell, designed to prove how high cotton-spinning wages were. Despite Cowell's own pro-factory beliefs he dismissed Greg's statistics and in fact dissected them with some brutality. ⁴ Furthermore, Greg was a member of a committee of Manchester industrialists which met in London in June 1833 to give evidence against Ashley's bill. ⁵

It seems clear that Robert Hyde Greg's ideas were to a large extent representative of those of his two younger brothers. W.R. Greg's own reaction to a proposed reduction of hours below twelve was to ask, "Did any nation

2. Ibid., pp.110-5.
4. Ibid., pp.119q, 119v-119w. For Greg's material see ibid., First Rep. D.2, pp.30-9; GBPP 1833 XX.
5. Ibid., Mins. of Ev., E, p.27; GBPP 1833 XX.
before ever think of restricting the industry and energies of its people?" The inevitable result would be a reduction in wages and an inability to meet foreign competition.¹
That the need to provide a coherent justification of the factory system, at least in its more humane forms, was a factor in the founding of the Manchester Statistical Society is suggested by the fact that one of the first acts was to constitute Samuel and William Greg a committee to report on the evidence to the 1833 commission. Their report, presented in March 1834, argued that the bill of August 1833 had been hastily prepared without fully studying the evidence which, on the whole, vindicated the factory system. In the Gregs' view the major charges - for example, cruelty and the encouragement of immorality - were proved to be groundless. As for unhealthiness, it was pointed out that the witnesses had split seventy-two to seventeen in favour of the factories. The drift of the evidence was to show "the weakly children are fatigued by twelve hours' labour, but that healthy ones are not".²
Whatever the merits of this argument it demonstrates an attitude which might have been inferred from an examination of the backgrounds of the other founders. Benjamin Heywood was born in 1793, the son of the banker, Nathaniel Heywood. Like the Gregs his Dissenting opinions sent him to a Scottish university, this time Glasgow. He temporar-

1. Ibid., Supp. Rep., Part II, pp. 146-7; GBPP 1834 XX.
2. Analysis of the Evidence taken before the Factory Commissioners. This paper was printed.
ily served in Parliament in 1831-2 but ill-health forced his retirement. His major interest was the Mechanics' Institute, of which he had been chief founder in 1824. He had been greatly impressed by Kay's 1832 book and was determined to prove that a natural harmony of interests could exist between a humanitarian employer and an educated work-force. Perhaps of all the founders he was the most genuinely interested in the welfare of the working classes though this interest was still in part due to a desire to save them, and him, from "the wild schemes of political agitators".

Heywood brought with him his two brothers-in-law, Samuel and James Robinson. They were cotton manufacturers, sons of a cotton dealer. Samuel, born in 1794, was later to become famous as a scholar of Persian. In the 1830's he was mainly known as an "improving" employer, founder of the famous Dukinfield village library where he was associated with other Unitarians, notably W.R. Greg, Thomas Ashton, G.W. Wood, and Rev. R.B. Aspland. Like Heywood he was dismayed at the deep class divisions in the industrial society of Lancashire and wished to prevent social upheaval by a mixture of kindness, inculcation of morality, and an appreciation of the source of the social hierarchy in laws of the universe. In his view the function of the

1. Thomas Heywood, A Memoir of Sir Benjamin Heywood (Manchester, 1888), passim.
3. Ibid., p.120.
4. Ibid., p.121.
Manchester Statistical Society was to "improve the condition of the industrious classes by an accurate investigation of the causes which produce our social evils" thus "cementing together the different ranks and classes of society". Apart from being Heywood's brother-in-law he was also a son-in-law of John Kennedy, one of the first two vice-presidents.

Kennedy had been present at Cambridge in June 1633 and had attended the meeting at which it was decided to form a statistical section. Perhaps, therefore, the idea of a statistical society was present in more minds in Manchester than William Langton's in the summer of 1633. Kennedy was the doyen of the society. Born in 1769 he belonged to an older generation than the others. A self-made man of Scottish birth he was a prominent cotton-spinner and inventor. One of his daughters married Edwin Chadwick. With him in the new society was another factory owner, Henry McConnell, son of Kennedy's old partner. Also a cotton master was Samuel Dukinfield Darbishire. Henry Newbery came from the banking side of the community (he helped to found the Manchester and Salford Bank in 1636).

The cotton masters were soon augmented by Peter Ewart jr., Henry Houldsworth, and James Murray among others. Family ties helped to increase the membership

1. Ibid., p.122.
2. Drinkwater's Diary, 27 June 1633. Also present was Dr. Lant Carpenter who had taught some of the Gregs.
3. DNB.
with Shakespeare Philips and Robert N. Philips, brothers-in-law of R.H. Greg. From a different area of manufacturing came Edward Tootal of silk fame. These men were bound together by class and family ties. They also shared a large common ground intellectually. Of the twenty-eight paid up members in July 1834 thirteen were members of the Manchester Literary and Philosophical Society in 1848.¹

Many, apart from Langton and Key, were to hold office in the local provident society.² Kennedy, Newbery, Heywood, Shakespeare Philips, and Tootal (with R.H. Greg) had signed a requisition for a reform meeting as early as 1827.³ Add to this the mechanics' institutes, village libraries, and schools and we have a fair picture of a tightly-knit reforming section of the commercial and industrial aristocracy of Manchester, usually men of the second generation rather than self-made.⁴

As the Gregs showed they were determined to defend the factory system against what they saw as misinformed criticism, without completely ruling out the possibility of slight reforms. The twin half of this aspect of their attitudes was an antipathy to the old poor law. Kay gave vent to this antipathy in one of the first papers read to

2. Ashton, op.cit., p.11.
the society. For Kay relief should not be given where it would not "encourage industry and virtue". But there was an obverse side to the often seemingly unfeeling reaction to pauperism. There was an emphasis on moral improvement, on the possibility of the creation of a better world in the middle class image where the streets would not only be paved and drained but free of crime and drunkenness, full of educated, happy, contented, self-reliant (that is, not dependent on the poor law) work-people.

The manifestation of the Utopian vision in statistics in the society was the work on "moral statistics", that is, criminal and educational statistics. Again it was the Gregs who were to the fore. The first paper read to the society was by William Rathbone Greg on criminal statistics. Greg saw the lack of accurate knowledge on the subject and pressed for complete official returns. They would form an index of the people's happiness (it being the function of government to make the people happy). What few statistics there were, plus statistics from other countries, were seen by Greg to indicate that as education advanced inequality of wealth increased, industry grew, and urbanization intensified so that crimes increased in number but diminished in atrocity.

The conclusion seems a little tortuous, probably influenced by the writings of A.M. Guerry (which Greg had

obviously read). Guerry had shown a positive correlation between education and crime which Greg had to explain away since it was fundamental to his position that the answer to crime was education and prosperity.¹ The conclusion, whatever its contradictions, was an interventionist one. The real contradiction in the ideas of men like Kay and Greg was their generally laissez-faire approach to some social issues (such as the poor law and the factory laws) and their highly interventionist beliefs in others (such as education and sanitary reform). This resulted from the tension between moralism and environmentalism in their ideology, a tension between a moralistic attitude of condemnation of laziness, lack of self-reliance, and improvidence and an environmentalist appreciation of the effects of lack of education and atrocious living conditions. A recognition of this tension is perhaps essential to an understanding, not only of the Manchester Statistical Society, but of the whole statistical movement.

The Manchester society was formally constituted in September 1833 with thirteen members. By mid-October there were eighteen, a number which grew to twenty-eight at the time of the first annual report in July 1834.² A year later there were forty.³ Manchester men were less

1. See below, Chapter XII, for a longer discussion of Guerry's impact.
3. Ibid., f.37.
fearful of "opinions" than the London society and defined their purpose in rather broader terms. They saw their function as "the collection of facts illustrative of the condition of Society, and the discussion of subjects of Social and Political Economy; totally excluding Party politics".¹ Despite the exclusion of "Party politics" (whatever that meant in what was probably a universally Liberal gathering) it is apparent that the society did not expect to leave it to others to thresh out the conclusions from the wheatsheafs of statistics. Such self-denial would scarcely have appealed to Benjamin Heywood, who became president. The two vice-presidents were John Kennedy and Colonel Shaw Kennedy, with Kay as treasurer.²

It was decided to try to restrict the society to a small group of intimates; membership was limited to fifty. With twelve persons required to vote before a new member could join selectivity was ensured.³ The society, as we shall see, quickly ran into debt, and a committee was appointed to consider changing the rule. Since it was desirable to avoid the "sacrifice and disadvantages attending any such extension of the Constitution of the Society as must impair its social character" it was resolved to try to continue with voluntary contributions.⁴ The

1. Ibid., frontispiece.
2. No secretaries were appointed in the first year. James Shaw Kennedy was born in Ayrshire in 1788, a nephew of Macadam. He had a distinguished war record and was stationed in Manchester from 1825 to 1836 (when he became Inspector-general of the Irish constabulary).
4. Ibid., f.12.
society was finally forced to rescind the rule in 1837.¹

Rules were generally kept to a minimum and the immediate problem facing the society in late 1833 was not finance but where to begin its labours. The Vice-President of the Board of Trade, Poulett Thomson, was also one of the M.P.s for Manchester and, as we have seen in Chapter III, the society held a conference with him at which the society was encouraged to continue its efforts since there was no possibility of wide-ranging government action. Little encouragement was needed - the society's early history was in complete contrast to that of the London society. Where the latter pictured itself in the role of attacking the entire range of statistics, yet could do no more than set up inactive committees, the former chose smaller, more tangible subjects and began work immediately.

We have already noted the small sub-committee of Samuel and W.R. Greg on factory statistics set up at the end of 1833. A sister project was an inquiry into the hand-loom weavers begun by Kay at the same time, though this does not appear to have been one of the more successful ventures of the society. But it did develop into a survey carried out in one of the poorest areas of Manchester. The survey was conducted at Benjamin Heywood's expense who showed the way for amateur societies to complete social surveys by employing an agent to do the fieldwork. The agent, Henderson, was "an intelligent

¹. Ibid., f.98.
Irishman, who was himself a hand-loom weaver*. Some 4102 families were covered and the society was sufficiently proud of its work to allow it to be presented to the 1834 meeting of the statistical section in its name.¹

The success of the pilot survey made the society undertake a much more ambitious plan. A committee was formed and over the next seventeen months four agents were employed whose job it was to discover the circumstances of the "Working Population, or in a word, all those below the rank of shopkeeper". Geographically the survey eventually encompassed Manchester, Salford, Bury, Ashton, Stalybridge, and Dukinfield. The total cost was £175.²

The results were first made public at the British Association meeting in September 1837 and were subsequently published. It was a large inquiry indeed - perhaps the largest of its type in our period. Some sixty-four per cent of the population of Manchester were visited, seventy-four per cent of Salford, seventy-two per cent of Bury, eighty-two per cent of Ashton, ninety per cent of Stalybridge, and ninety-five per cent of Dukinfield. The last two figures showed the strange social structure of those towns, the first that the survey of Manchester was probably not complete.³

¹. See Trans. BAAS, III, 1834, p.690.
³. Ibid., p.6.
The agents had noted the numbers of persons, rooms, and families in each dwelling and the rents paid. They had then noted the occupation, religion, and country of birth of the head of the family and the occupations of the rest. Also taken down was the number of adults in the family earning, the number of children doing likewise, the number of children at day school and Sunday school, and the weekly payments for these schools. This led on to such moral statistics as the number of books in the house, whether or not it was "comfortable" and well-furnished, the length of residence, and whether or not the members of a family belonged to a benefit society. Finally came an inquiry into the number of rooms, the number of sleeping rooms, and the number of beds per family, and the state of the water-supply.

The purpose of the inquisition was "to assist in promoting the progress of the social improvement in the manufacturing population".\(^1\) Compared with some other surveys the society's was not aggressively moralistic yet the moral concern comes through. Moreover, two questions which were begging for answers went unasked. There were no direct inquiries on income and hours of labour since "it was feared they could lead to no correct results". The agents reported that these were the only issues on which there was suspicion of and resistance to their efforts.\(^2\) Nevertheless, it is indicative of the moralistic

\(^1\) App.Mins., f.8.
\(^2\) Report, p.5.
side of the society's ideology, that it should be thought unworthwhile to press the matter while being much concerned with the number of books owned by the working classes.

More obviously committed to ideological needs was the other great success of the society, the education surveys. Here, as with the committee on factory statistics, part of the underlying motive may have been a desire to justify Manchester against its calumniators. In 1833 the Earl of Kerry had moved in the Commons for returns on the state of education in England and Wales. The returns, if correct, showed that the provision for education was totally inadequate. The members of the society, without seeing the Kerry returns, do not seem to have trusted the efficiency of the government survey. They appointed their own committee in April 1834 to inquire into the state of education in Manchester. The report was published in 1835, a second edition in 1837. The committee's task had been to examine the day, Sunday, charity, infant, and dame schools in Manchester, the number of children in them, and the "nature and efficacy" of the instruction. The main members were Langton, Samuel and W.R. Greg, and S.D. Darbishire with Kay and others being coopted. An agent of high ability, John Riddall Wood, was employed who carried out many other such surveys for the society.

Wood's work led to the satisfying conclusion that, on

1. The returns are further discussed in Chapter XI.
balance, the Kerry returns had omitted over 8000 school-children. With that concession to civic pride out of the way it was possible to proceed to the less pleasing results. It was estimated that some two-thirds of the five to fifteen age-group were at school, leaving one-third "receiving no instruction in schools whatever". While this might be felt to be a misstatement, since it seemed to make unjustifiable assumptions about the nature of school attendance, it should not divert us at this stage from recognizing that the bulk of the report was not statistically based. Whether or not this was due to the still loosely defined nature of "statistics" is not easy to decide. But it is relevant to go beyond quantification for it is in the qualitative parts of the report that the beliefs of the Manchester Statistical Society are most apparent.

The society's main objection to the state of education in Manchester was not to its deficiencies in numbers taught as to its nature. The dame schools could practically be dismissed as educational establishments since they were basically day-care institutions for the children of the working classes. Many of the teachers had other occupations, usually of a medial nature, "which renders any regular instruction among their scholars absolutely impossible". The "schools" were often held in "very

1. Ibid., p.3.
2. Ibid.
3. The society's statement of aims included no reference to numbers.
dirty, unwholesome rooms". The common day schools were a little better but "still very little fitted to give a very useful education". Discipline was poor and, most crucial to the Manchester men, "moral education, real cultivation of mind, and improvement of character are totally neglected". The other types of schools surveyed were generally superior, though seldom entirely satisfactory. The society concluded that the numbers attending were "a very imperfect criterion" of the state of education. On the basis of the Manchester survey that state was very poor and presented "a painful and mortifying contrast" to some countries on the Continent (Kay's influence is seen in the paean of praise to Prussia).

To its credit the society did not rest satisfied with undertaking a survey of its own backyard. With a clarification of the method of arriving at the ages of the children (a direct census of under fives, five to fifteens, and over fifteens was now taken) the survey was extended to Salford and Bury. The inquiries were modelled on the Manchester one. The conclusions were practically word for word the same. But there was a difference. In the report on Salford the society obviously felt that the trend of public opinion was now running sufficiently strongly in its favour for it to

1. Ibid., pp.5-7.
2. Ibid., pp.7-10.
3. Ibid., p.15.
4. Ibid., p.17. Also see Chapter XI below.
be able to question the advisability of leaving education to the "sole caprice" of working class parents.¹

With the completion of the surveys of Manchester, Salford, and Bury in October 1835 a new committee of W.R. Greg, Langton, and Henry Romilly was formed to survey the state of education in Liverpool. The inquiry took nine months to complete at a cost of £96.² Previous surveys had met with occasional obstacles (especially at Salford) but in Liverpool Wood found a great deal of suspicion. It was feared that the survey was a preliminary to government interference and that Wood himself was a government agent. If the schoolteachers did not harbour that suspicion then they were likely to assume that the information was sought by political or religious partisans. The opponents of the society got as far as holding a meeting which excited "party spirit".³ "Party spirit" was of course a term to use only of the opposition. The society saw itself as merely seeking after truth while its members were "bound together by no community of political opinions".⁴ The society's protestations should not be taken too seriously since its report recommended the creation of a "Board of Public Instruction ... as the first step in the performance

³. Ibid., pp.3-5.
⁴. Ibid., p.5.
of a duty, which is imperative with every enlightened government".1 This was scarcely a non-political statement in 1836.

By this stage the reports on education were falling into a highly predictable pattern in terms of content, format, and conclusions. The report on Bolton deviated in no way.2 The statistics were becoming more and more subsidiary to the cause of campaigning for a central board of education, state aid, teachers' training schools, and a much higher status for the teaching profession. The reports were used by other educational reformers to back their case.3 Nevertheless, further surveys were made since it could be argued that so far only the worst type of area - rapidly growing urban centres - had been studied. Consequently, it was decided to look at a quite different type of town and York was chosen. Despite the different environment the society was satisfied that, on the whole, the same conditions prevailed.4

There remained three further education surveys. The first was a second survey of part of Salford, the township of Pendleton, in the spring and summer of 1838. The report was briefer than usual and was concerned with the

1. Ibid., p.43.
change since the survey of 1835 as well as the reasons for irregular attendance. Except for a massive increase in the number attending Sunday school (from an estimated 9.1 per cent to 14.6 per cent of the population) there was no sign of progress. Indeed, following on two years of bad trade, the reverse was true (hence at least part of the rise in the Sunday school population). The motives behind the Pendleton survey are obscure—perhaps it was the trial for a complete revision which was never carried out for financial or other reasons. Perhaps the establishment of the Privy Council Committee on Education with Kay as secretary in 1839 ended the need for such work.

The other survey of 1838, that of Rutland, was rather more in the standard pattern. In this instance a rural district was examined to compare with the urban districts already studied. Two major variations from the norm were found in Rutland. Firstly, the 1833 returns were less inaccurate there. Secondly, the quality of the schooling was considerably higher than in the towns. The Rutland survey was followed by the last of the education surveys, that on Kingston-upon-Hull in early 1839. The dating implies that the foundation of the Privy Council Committee was an important factor in bringing an end to the surveys. Both the Rutland and the Hull surveys were accompanied by

reports upon the condition of the population (but only of three parishes for Rutland). The usual heads were included plus an inquiry into earnings.  

Apart from these major undertakings various other smaller projects had been tried. After a paper (not preserved) by Kay on "The Means Existing for the Religious Instruction of the Working Classes in Large Towns" in January 1835 a committee was appointed to look at the subject further. Printed forms were sent out to Church of England, Roman Catholic, and Dissenting clergy within a few weeks.  

The response was poor: eleven out of twenty Anglican clergy returned the forms and only five out of thirty-five Roman Catholics and Dissenters. The other reports of the society were of much less weight than the education and working classes surveys and the projected religious instruction survey. Henry Ashworth, the Bolton industrialist, prepared a report on the number and horsepower of the steam-engines and waterwheels in the Bolton area. James Murray and Richard Birley (both Manchester cotton-masters) did the same for Manchester and Salford. James Meadows undertook a study of the quantity of coal brought into Manchester in 1834 and 1836 and William McConnell of the amount of meat consumed in Manchester in

3. Ibid., f.57.
1836. In addition, a few individual papers were thought worthy of publication, such as Samuel Greg’s and Henry Romilly’s papers on criminal statistics and Henry Ashworth’s on a strike at Preston in 1836-7. ¹

As we have noted, the rush of activity in the first few years of the society’s existence was in direct contrast to the lethargy which almost immediately settled on the Statistical Society of London. The contrast may be carried further. Whereas the London society moved out of the doldrums in the late 1830’s the Manchester society began to drift into them. Its membership had reached forty-six by the time of the third annual report in October 1836 and was nearing the ceiling laid down in the rules. With the abolition of the limit membership grew to fifty-two by October 1837 and sixty a year later. ² Growth then ceased and a reverse movement began so that by 1846 the membership was only twenty-four, less than it had been in July 1834. ³

Meanwhile, the financial affairs of the society had always been in a precarious position since the surveys cost far more than the regular income. At the time of the first audit in October 1835 ordinary subscriptions and the interest on them had brought in £115.8.0. £42 had already been spent on the education inquiry and £88 on the working

¹. All these papers are to be found in Collection of Miscellaneous Reports and Papers of the Manchester Statistical Society (London, 1838). A copy of this volume is in the Manchester Central Library.
³. Ashton, op.cit., p.131. Ashton does not cite a source.
classes survey. With sundries total expenditure was over £144. Luckily, heavy donations had been made by Kay and others which left a handsome surplus of just over £100. But there were also outstanding bills of £75 which made the financial state less healthy.1 A year later cash in hand was £52 and outstanding debts £165 (nearly all owed to Wood and another agent for their work in addition to the large sums already paid).2 With the reduction in the scale of surveys the society managed to get itself roughly into balance by the end of 1838.3 The society had learnt the lesson London had to learn: statistical surveys were expensive. In 1839, when the total subscription income of the society would have been about £120, J.R. Wood put in a claim for a salary of £200 a year plus one pound a week living away expenses.4

In the early days of enthusiasm the society had risked financial ruin to complete surveys. But with the natural waning of enthusiasm the financial realities may have had an impact on the decline which began to set in. In late 1839 W.R. Greg drew up a plan for the future work of the society. Of his "statistical desiderata" only the survey of the state of education and the condition of the working classes in a purely agricultural district was carried out. Plans for surveys of the state of the working classes in Liverpool and Preston fell through. As late as October

1. App.Mins., f.43.
2. Ibid., f.80.
3. Ibid., f.108.
4. Ibid., f.111.
1840 a number of committees were set up but only one - on vital statistics - prepared a report. 1

Apart from the financial aspect the decline is difficult to explain (though it was small until the 1840's). Part of the reason no doubt lies in the loss of leading figures. Kay went to the Poor Law Commission and then the Privy Council Committee, Stanley to the Bishopric of Norwich, Peter Ewart jr. to Bombay, and Colonel Shaw Kennedy to Ireland. New blood of comparable strength was not added. Then again, from 1838 the reforming bourgeoisie had a powerful counter-attraction in the anti-corn law agitation. Ashworth, the McConnells, Darbishire, Thomas Ashton, the Gregs, the Tootals, Henry Romilly, Robert Philips and others were involved in that movement, not to mention Richard Cobden who had joined the society in 1835. 2

Despite the losses and distractions the momentum of the 1830's carried the society through to about 1841 or 1842. By then the big surveys were completed and reported on. The rest of the story is difficult to reconstruct for, index itself of decline, the Appendix to the Minutes contains no further material after October 1840 (and had been indifferently kept for some time before that date). Rapidly the society declined to the point where its continuation depended on one man, John Robertson.

1. Ashton, op.cit., p.34.
Roberta had been surgeon to the Manchester Lying-in Hospital since 1827. He had given evidence to the 1833 factory commission which had condemned the sanitary condition of Manchester while being generally pro-factory. However, he had called for a 10½ hour day for all workers.¹ In 1840 he delivered a paper to the society in which he called for outdoor relief to widows, arguing that

"there is need at the present moment to watch the measures of these gentlemen [the commissioners and assistant commissioners], lest, in their eagerness to carry into operation certain views as to out-door relief, they unwittingly overlook the claims of humanity".²

It is perhaps significant, then, that he did not join the society until 1838 and came to the fore when others had lost interest. By 1842 he dominated the society. According to Ashton eight papers were read in the 1841-2 session, two by Roberta. The next year only two papers were read, one of them by Roberta. Over the next seven sessions he delivered seven out of the fifteen papers. In the two sessions 1843-4 and 1844-5 he gave all four papers read.³ The society was very close to extinction and none of the papers read from 1841 to 1851 have survived. Those that were read were mainly on vital

2. On a Recent Proposal of the Poor Law Commissioners to Refuse Out-door Relief to Widows with Families [Manchester, 1840?], p.3. The only copy of this paper I know of is in the Earl Grey papers, Durham.
3. Ashton, op.cit., pp.144-5. Ashton gives no source for his knowledge of these papers (there is no official record). Perhaps he traced them from newspapers.
statistics and then frequently on peripheral issues such as the "Alleged Influence of Climate on Female Puberty in Greece" and the "Physiology of the Hindoos" by Roberton, and on the "Mortality from Burns and Scalds, especially among the Children of the Labouring Poor" by S. Crompton.

This state of affairs continued to the end of the decade when a revival took place. The proposed dissolution of the society in 1849 spurred one or two men to vigorous activity.¹ In 1850 the council of the Statistical Society of London was able to announce the Manchester society's "renewed activity on a more popular basis" though the number of papers read shows that it took another year or two for the revival to bear fruit.² In the 1853-4 session the published Transactions were begun and the society had recovered to a position of stability. By 1857-8 there were 119 members growing to 144 at the end of the decade.³ Though it has never approached the prestige and activity of the London society the Manchester Statistical Society has since that time had a continuous existence. But if it had barely survived the 1840's it was alone in that distinction among the provincial societies. The others, which had never reached the heights of Manchester, had long since plunged into oblivion by the end of our period.

1. Ibid., p.130.
2. JSSL, XIII, May 1850, p.98.
3. Ashton, op.cit., p.140.
Chapter VII.

The Other Provincial Societies.

Though Manchester was easily the most important and the most well-known of the provincial statistical societies short-lived manifestations of the movement appeared in many other towns. By March 1835 the council of the Statistical Society of London had reason to believe that societies had been formed, or were on the point of being formed, in Birmingham, Edinburgh, Glasgow, Hull, Liverpool and Worcester.¹ Over the next decade organizations were mooted, and sometimes founded, in Aberdeen, Barnsley, Belfast, Bristol, Doncaster, Gateshead, a second in Glasgow, Halifax, Leeds, Leicester, Newcastle, Nottingham, Portsmouth, the Potteries, Sheffield, Tavistock and Tonbridge.² Some of them never got beyond the stage of a statistical gleam in one man’s eye. Others, notably in Belfast, Birmingham, Bristol, Glasgow, Leeds, Liverpool and Newcastle proceeded to a formal level of existence and produced various surveys.

Apart from Manchester and London the earliest significant statistical society in origin was that set up in Glasgow. Or, more correctly, the societies set up in Glasgow. For Glasgow was unique in creating two statistical societies, the Statistical Society of Glasgow and the

1. MSS1, I, f.18.
2. Evidence for the plans for most of these comes from letters recorded in the council minutes of the Statistical Society of London.
Glasgow and Clydesdale Statistical Society. Both of them centred around one or two men. In the case of the Statistical Society of Glasgow they were Charles R. Baird and Robert Cowan. It was founded in February 1836 "to collect, arrange, and publish, facts illustrative of the condition and prosperity, with a view to the improvement of mankind". Thus, in common with the other provincial societies, but not London (at first), the "improving" basis of the society was openly acknowledged. At the time of formation there were forty-one members which rose over the next two years to sixty-six. The founders were Andrew Tennent, who wrote to London in January 1836 to announce the forthcoming formation of the society, Charles Baird, and Robert Cowan.

Cowan was a medical man, a physician at the Glasgow Fever Hospital. The statistics of fever were his major interest and he read two long papers on the subject in 1837 and 1838 which were subsequently published. In them he called for public health reform, including civil registration of births, deaths, and marriages in order that the "obstacles to the promotion of social improvement among the lower classes" might be removed.

If Cowan represented the nearly always present public health aspect of the statistical movement Baird came from

2. Ibid.
5. Ibid., esp. pp.14, 45.
the equally ubiquitous reformist middle classes. His relatives were mostly members of the industrial bourgeoisie. During the period 1833-5 he was the lawyer for employers' associations fighting a succession of strikes. Then, when exceptionally hard times came in 1837, he was secretary to a committee formed to raise public subscriptions for the relief of the poor. The humanitarianism was heavily tempered by the requirement that an applicant had to state if he was a trade unionist on a form to be signed by the Commissioner of Police. Though he was overruled Baird demonstrated the connection of social statistics with such attitudes by wanting to ask the applicants further questions to ascertain the condition of the working classes. As he himself put it in his report on Glasgow for Chadwick in 1841, his interest in social statistics arose because he "was most anxious that the condition of these classes should be inquired into, so as to be improved". As one would expect in an anti-unionist supporter of the "improvement" of the lower classes Baird believed that the state was in danger from revolution and upheaval unless the middle classes led the way in sanitary reform and the provision of an English-style poor law, savings' banks; temperance and friendly societies, recreational facilities, and, above all, education to improve "the

3. *Local Reports ... Scotland*, p.159.
moral man". It was a man of these beliefs who was secretary to the Statistical Society of Glasgow throughout its brief existence. The active life of the society probably came to an end some time during the summer of 1838 for unknown reasons.

The other society in Glasgow, the Glasgow and Clydesdale Statistical Society, had a longer nominal existence but possibly an even briefer actual one. It was formed in April 1836 with James Cleland as president, leading contributor, and dominating influence. Cleland was by that time an elderly man. Born in 1770 he had done reasonably well in business as a cabinet-maker. He became involved in the intellectual life of the community and in 1811 was president of the Andersonian Institution. In 1814 he was appointed to the new post of Superintendent of Public Works which he filled until his retirement in 1834. It was in that post that Cleland’s statistical bent developed. The first important undertaking occurred in 1819 when Cleland proposed a census of the city. This was perhaps the first large-scale statistical venture by a municipality. From that time until 1836 Cleland published a number of works on the statistics of Glasgow.

1. Ibid., pp.193-5.
2. The last letter from the society to London was dated April 1838 (MCSSL, I, f.186). The society was mentioned in the June 1838 Journal.
He conducted the 1831 census of Glasgow which covered a much wider range than the standard census. He had also been an early advocate of civil registration in Scotland.

Cleland, now in retirement, went to the Dublin meeting of the British Association in 1835 to give a paper to the statistical section. There he would have met W.R. Greg and William Langton who were on a mission from Manchester to spread the statistical message. They may not have made a great impact on Cleland for there was some delay before the foundation of his society. But he must have been impressed with the rapid growth in enthusiasm for social statistics. The delay may have been due to careful preparations by Cleland for the society was founded in an extraordinary blaze of brilliance compared with any other provincial society. By the beginning of May 1836 it had been set up with a patron, a president, three vice-presidents, twenty-eight councillors, a secretary, and a treasurer. The Principal of the University of Glasgow was one of the vice-presidents and four professors were among the nine "ordinary" councillors who were, it seems, expected to do the work. Among the rest of these and the nineteen "extraordinary" councillors

1. James Cleland, Enumeration of the Inhabitants of the City of Glasgow and County of Lanark. For the Government Census of 1831, with Population and Statistical Tables Relative to England and Scotland (Glasgow, 1832).

2. Letter to His Grace the Duke of Hamilton and Brandon Respecting the Parochial Registers of Scotland (Glasgow, 1834).

3. Glasgow Bridewell, or House of Correction (Glasgow, 1835).

were the secretary to the Chamber of Commerce, a governor of the Forth and Clyde Navigation Company, the president of the Mechanics' Institute, the Moderator of the General Assembly, and the chairman of the West India Association.¹ Altogether there were 240 fellows, including sixty-six merchants, eight bankers, nine writers, fourteen medical men and six clergy plus assorted businessmen, aristocrats, officials, gentry and other prominent men (including, rather surprisingly, Robert Owen). There was, in addition, the rather incredible number of 116 "honorary and corresponding associates".²

The aims of this assembly of notables were very similar to those of the much more modest affair founded two months earlier. Directly quoting a phrase previously used by Cleland statistics was defined as "the knowledge of the present state of a country, with a view to its future improvement". In common with London and Manchester the disclaimer was made that in "prosecuting these objects, the Society will exclude all opinions from its transactions, and publications, and confine its attention rigorously to facts".³

The baroque edifice of the Glasgow and Clydesdale Statistical Society was a sham, or at least built on insecure foundations. A journal was begun of which volume one, part one appeared. It contained a paper by Cleland

2. Ibid., pp. 9-15.
3. Ibid., p. 3.
read in November 1836 on the statistics of Glasgow. There was little original data in the paper which mainly consisted of collated statistics from elsewhere, notably Cleland's own earlier works.¹ Like Baird Cleland found space for a twin condemnation of trade unions and the "deplorable ignorance in the mass of the operatives who have allowed themselves to be led on by a few designing and selfish knaves".² The only other paper in the Transactions was not from Glasgow but one on education read to the Bristol Statistical Society.³

The endpiece of the Transactions gave a hint of some of the problems facing the society when it included an appeal for early contributions to enable the continuation of publication.⁴ Probably more important than lack of money was the growing ill-health of Cleland. He had very likely been ill for some time when he withdrew from the Statistical Society of London in April 1839.⁵ He died in 1840. The Glasgow and Clydesdale society may have carried on a nominal existence for it was still noted as having 255 ordinary fellows in 1847 though no other reference has been found to it for nearly ten years before that date.⁶ It is very likely that the society did nothing after late 1837.

2. Ibid., p.35.
5. MCSSL, I, f.225.
The failure of the society did not ring the curtain down on all Cleland's statistical endeavours. His burgh council inquiries were taken over by Alexander Watt who was designated "City Statist". Watt was a friend of Baird's and as he claimed in 1844 the title of "Secretary to the Statistical Section of the Glasgow Philosophical Society" the Statistical Society of Glasgow may have found some continued life in that form.¹ There is no sign of any great activity on the part of the Philosophical Society though Watt himself did some useful work. Moreover, the continuity of ideas was marked; Watt campaigned for laws "to improve the social condition of the people".² But, overall, the statistical movement was a failure in Glasgow - in particular, no surveys of education or the condition of the working classes were carried out.

Part of the reason may lie in the split into two societies. If their history must remain vague, at least until further research, the motives behind the formation of two separate organizations are equally difficult to ascertain. At first glance the reason does not seem to lie in party politics. Both societies were unusual in their connections with the Tories. Archibald Alison, high Tory Sheriff of Lanarkshire, was president of the Statistical Society of Glasgow, while Cleland had been partly responsible for a banquet given by Glasgow Tories.

2. Ibid., p.3.
for Sir Robert Peel in 1835. Nor, in any case, were the two societies unable to cooperate in some ways. Robert Cowan was on the council of Cleland’s society. Moreover, in January 1837 Baird wrote to London that his group would be happy to send its publications which would be conveyed to G.R. Porter through Cleland. To solve the conundrum would require greater research into the political and intellectual history of Glasgow than is possible within the scope of this thesis.

If Manchester may be taken as the best representative of the involvement of some of the industrial and commercial bourgeoisie in the statistical movement then Bristol shows the possibilities of leadership by medical men and divines. It was also the first society, though not the last, to be the direct result of proselytizing by the statistical section of the British Association. As with many of the societies Bristol had a central figure, Charles Bowles Fripp. The man himself is not well-known: he is not mentioned in any of the standard reference works. There are no memoirs of his life by himself, relatives, or friends. But Alumni Oxonienses and Alumni Cantabrigienses mention a number of Fripps from the West Country. The most important was Samuel Charles Fripp, an Anglican clergyman born

1. For this banquet see James Cleland, Description of the Banquet given in Honour of the Right Hon. Sir Robert Peel (Glasgow, 1837).
2. MCSSL, I, f.123.
in 1785 who was converted to Unitarianism in Bristol in 1822. Then there was Charles Spencer Fripp, second son of Edward Bowles Fripp of Westbury in Gloucestershire who was born in 1823 and destined to become an Anglican minister. Perhaps C.B. Fripp was the latter's uncle, almost certainly he was related to these ecclesiastical Fripps. But whether he was a Unitarian or an Anglican cannot be settled with any degree of certainty.

Fripp presented a paper to the British Association meeting at Bristol in August 1836 on the statistics of education in Bristol. The paper was a result of a private inquiry, formed on the Manchester model, but dependent upon returns from circulars to "the clergy and other ministers of religion". It was very much influenced by the Manchester surveys in its conclusions as well. But Fripp was not backward in criticizing the society's apparent inference that because, at the time of the inquiry, one-third of the five to fifteen age-group were not at school then that proportion remained wholly un instructed at any time since few children were at school for all that period of their lives. Fripp also departed from the Manchester pattern by admitting that his own city was worse than other cities. Fripp's main deductions from the evidence were that the means were inadequate while

1. For Fripp's conversion see DNB under Lant Carpenter. Otherwise see Alumni Cantabrigienses and Alumni Oxonienses (under Tripp in the latter).
there was a need for a statistical society in every large
town to inquire into its social condition.¹

Fripp was making a play for the creation of a statisti-
cal society and his audience was receptive. Henry
Hallam, whose family influence lay in Glouces-
tershire, helped and soon a collection of worthies was gathered.
A meeting was held in early September with Hallam in the
chair. The standard phrases of the movement were given a
west country airing. It was moved that it was

"of great interest and importance, with a view to
the future improvement of society, to ascertain
with precision and accuracy all such facts as are
calculated to illustrate its condition and
prospects".

With this self-congratulation on the perception of, if
not truth, then the need for truth out of the way the
meeting set up a society to "collect, arrange, and publish
the Local Statistics of Bristol and its Vicinity, confining
its attention to facts, and totally excluding all party
politics".² (Hallam's influence in the phraseology comes
through).

The governing circle of the society at its inception
was composed of Fripp, James Cowles Prichard, John Addington
Symonds, Charles Pinney, Lant Carpenter, John Matthew
Gutch, George Birch Jerrard, William Tothill, Rev. J.E.

1. Charles Bowles Fripp, Statistics of Popular Education
   in Bristol (Bristol, 1837).
2. See Proceedings of the Bristol Statistical Society,
   1836-41, a volume in the Bristol Central Library. The
   meeting is described in an unidentified newspaper
   cutting which begins the volume. The volume includes
   the annual reports.
Bromby, and Arthur Biggs. Concerning the last two no information has been found but the rest (apart from Fripp and Tothill) were sufficiently important to be noted in the Dictionary of National Biography. Prichard was born in 1786 of a Quaker family. He had begun his medical training by learning pharmacy from a Mr. Tothill (perhaps William or William's father). He received further training at Edinburgh and Cambridge (which he attended at the same time as Babbage and Jones). In 1812 he became physician to a Bristol hospital and, three years later, to the Bristol Infirmary. As with many of the Manchester men he had been prominent in local education, helping to found the Bristol Literary and Philosophical Institute in 1822.² His close friend, Symonds, was of a younger generation. Born in 1807 he came from a line of five generations of medical men. He himself graduated in medicine from Edinburgh. In 1831 he moved to Bristol as a hospital physician and later as lecturer at the medical school. His friendship with Prichard and place of training (his father lived in Oxford) may indicate a similar Dissenting background.

Clearly a Dissenter was Dr. Lant Carpenter, perhaps the leading Unitarian divine of the age. Born in 1730 he was a proselytising Unitarian (the converter of Samuel Charles Fripp). He had taught at least some of the Gregs.

1. Among the rest of the provisional council were two other Anglican clergy.
2. John Addington Symonds, Some Account of the Life, Writings, and Character of the late James Cowles Prichard (Bristol, 1849), pp.6-8
He moved to Bristol in 1817 and cooperated with Prichard in the creation of the Literary and Philosophical Institute. Also from a religious background was John Matthew Gutch, son of an antiquary and divine. He was born in 1776 and moved to Bristol in 1803 to found a newspaper. In 1823 he transferred to Worcester to be a partner in his father-in-law's bank but visited Bristol each week on newspaper business. His political views are revealed by the fact that his paper was sued for libel by the Duke of Wellington and Lord Lyndhurst. Similarly embroiled in politics was Charles Pinney, born in 1793, a merchant and slaveowner who was mayor of Bristol during the Reform Bill riots in 1831. That his heart was not in repression is hinted at by his subsequent trial on charges of failing to do his duty at that time (he was acquitted). He became the first alderman of the reformed corporation. Finally, we may mention Jerrard, a well-known mathematician with possible clerical connections.¹

These men formed the nucleus of a society which, starting with a reasonable strength of forty-six members, grew slowly to fifty-four over the next year and a half.² But an obstacle to progress soon showed itself which must have bothered other societies. The members were willing but not able. They were prominent men of affairs - businessman, doctors, clergy. They had little time for the lengthy process of collecting statistics. Consequently,

¹. For Symonds, Carpenter, Gutch, Pinney, and Jerrard see DNB.
². JSSL, I, May 1838, p.49.
the first annual report bemoaned the vast field open and argued for the need for accurate co-ordinated research. But the committee members were not available for "so arduous and absorbing an employment". Even if they were it would not be reasonable to expect accuracy, only "a close approximation". This, however, would be sufficient "as affording the basis of a sound municipal economy, and as a guide to the hand of benevolence" which would aid "the alleviation of distress".

The attitude is reminiscent of Manchester. It is not the only similarity. J.E. Bromby explained in 1838 that the society had two purposes. One was to act as a focus of encouragement for occasional "zealots" who would collect statistics to chart "the fluctuating vicissitudes of [Bristol's] internal condition and of its trade with the different quarters of the world". Secondly, and much more valuable, its function was to study the "poorer classes" and ascertain their "means of instruction and improvement" and "how far they enjoy those comforts and conveniences which every man must enjoy before he is entitled to the epithet of civilized". The purpose of the inquiries was to extinguish "Sansculottism" and "render practicable an amelioration of our statutes which the present state of things utterly precludes". The poor were inevitable but it took effort and propaganda to make the wealthy realize

2. Ibid., p.10.  
3. JSSL, I, January 1839, p.548.  
4. Ibid., p.549.
their duties. In a simple society they would, but Britain lived in an "artificial and complicated state of things" where she was the workshop of the world. The poor were crowded together, away from the rich, prevented from actual starvation by the poor law but "destitute of everything which ennobles life". More was required from "the stewards of unrighteous mammon".  

Bromby's report thus started with sentiments of controlling revolution that Manchester or Glasgow or London could have echoed. Yet the evangelical call to action was perhaps unique in the statistical movement in its insistence on reducing differences of wealth. It is suggestive of Thomas Chalmers of Edinburgh who had influenced J.P. Kay greatly. But Kay and the Manchester Statistical Society would scarcely have attacked the "stewards of unrighteous mammon". Yet if the style is a little different Bromby was typical of the movement in making a case for reform then admitting that

"this, however, is not within the province of the Statistical Society ... Their only object is to ascertain, as nearly as possible, what the actual exigencies are, and by an accurate exhibition of them, to rouse the community, and eventually the legislature, to take adequate measures to meet them".

Once again we find the movement's hallmark in the contrast of an ideology stressing the necessity of the wealthy improving the working classes with a disclaimer of

1. Ibid., pp.549-50.
3. JSSL, 1, January 1839, p.550.
"opinions" and "party politics" and a profession of
"confining their attention strictly to facts". Bromby
points up the contrast particularly by incorporating into
the disclaimer a further example of pressing for state
and local action.

But there remained the burden of collecting the facts,
the "tedious employment" in Bromby's phrase.1 As usual
recourse was had to an agent. B.F. Duppa of the Central
Society of Education was contacted and he selected an
agent who was trained by accompanying the Central Society's
agent on a survey of Marylebone. The agent, C.F. Pullen,
began his work in Bristol in May 1837. The schedules of
inquiry were based on models from the Statistical Society
of London.2 By the time of the first annual report an
interim report on 275 families in one parish had been
prepared which was read to the British Association meeting
in Liverpool in 1837.3 Pullen, supervised by Fripp,
Bromby and Arthur Biggs, continued the survey so that by
November 1838 4700 families had been visited.4 By the
summer of 1839 nearly 6000 families including over 20,000
people had been visited. Altogether the inquiry had cost
£110. Help had come from a £50 grant from the British
Association plus private contributions to supplement the
inadequate funds of the society.5

1. Ibid., p.543.
3. Ibid., pp.12-18 and JSSL, I, June 1838, pp.86-9 (the
latter report is not as full as the former).
5. C.B. Fripp, "Report of an Inquiry into the Condition of
the Working Classes in the City of Bristol", Third
The inquiry had been finished in July 1839. Enthusiasm was beginning to wane by that date for of the sixty-four supposed members forty-nine were in arrears. With a cash balance of less than £2 the society had no choice but to pause in its labours. Hence the annual report for 1840 noted with grim irony that the council could not "congratulate the Society on any great progress". The council reaffirmed the lack of spare time of its own members but announced plans for an inquiry into the state of education in Bristol and appealed for assistance. It came from two sources. The British Association again stepped in, with a grant of £20. The Statistical Society of London also helped by providing at no cost the printed inquiry schedules. The free schedules kept the total cost of the survey, carried out in the first six months of 1841, to £25 - a net cost to the society of only £5. The report very much followed the standard pattern with over 22,000 schoolchildren covered. With its two major projects completed the society collapsed. Pullen was paid off in October 1841 but the society's finances were good with a balance of £38, its best ever. The society had completed the two standard surveys for provincial societies and was presumably wound up because it could think of

2. Ibid., pp.6-7.
If the enthusiasm of the Bristol society was transitory that of the men of Belfast was similarly so but less productive. The Statistical Society of Ulster centred on members of the Belfast Natural History Society who had attended the Liverpool meeting of the British Association in 1837. At first no more than a statistical section of the Natural History Society was contemplated but in February 1838 twenty-one members decided to form an independent statistical society. The society was founded the next month with sixty-seven members. Committees were set up on education, the state of the working classes, the trade between Ireland and Great Britain, the state of agriculture, and the amount of mechanical power in the Belfast area.¹

By May there were ninety-seven members with G.R. Porter and Rawson Rawson as honorary members. The vice-president of the society, Captain Portlock of the Royal Engineers, explained that the purpose of statistics was to "rescue Political Economy from all the uncertainty in which it is now enveloped".² Apart from that typical statement the paper he read said very little at some length.

Membership had passed the hundred mark when the first anniversary meeting was held in November 1838. A Mr. Bruce

1. JSSL, I, May 1838, p.50.
read his first report on the charities in Belfast which was limited to a history of the Charitable Society for the period 1753–76. The level of the paper may be gauged from the fact that one of its more weighty statements was that an iron chest ordered from Holland had cost nine pounds.\(^1\) Bruce's report was from one of the committees added to the original five. The other additions were on steam navigation, medical statistics, medical education, the classification of crime, the moral and intellectual condition of criminals, literary and scientific institutions, inland communications, and mines and minerals.\(^2\) With fourteen committees the society did not lack in ambition.

Achievement was another matter. In January 1839 the education committee was able to announce that its sets of questions had gone to the printers.\(^3\) At the next meeting but one the medical committee announced its plans, including a study of "typhus fever". But these were still plans. The two papers presented were of considerably less moment — one on the pawnbroking system of Armagh and the other on a 1613 proclamation by the Lord Mayor of Dublin settling wage-rates.\(^4\) It was not until November that the council could report the completion of the education survey in some parishes. But the weakness of the society for over-extending itself was again demonstrated with the appointment of a committee on the linen

1. JSSL, I, January 1839, p.553.
2. Ibid., pp.553–4.
trade. The semblance of activity was illusory and though the society may have dragged on for some years it was later to be remarked that "it has never been conducted with spirit, and it is at present somewhat in abeyance".

Another society which, in part at least, owed its existence to the 1837 British Association meeting was the Liverpool society itself. Viscount Sandon was president of the statistical section and on a number of occasions he urged the formation of a statistical society. The society was founded at the beginning of 1838 and soon had eighty-five members. Three committees were formed — one on Anglo-Irish trade, a second on the "statistics of human life" (divided into medical statistics and moral and educational statistics), and a third on criminal statistics. The most active figure in the society was William Henry Duncan. He had graduated in medicine from Edinburgh in 1829 and was appointed physician to the Northern Hospital. He was to write, in 1840, the local sanitary report on Liverpool for Edwin Chadwick. The other major influence in the society was John William Harden. A lawyer, he was born in 1809 and

was also a graduate of Edinburgh. At the time he was a commissioner of bankruptcy, a post suggesting Whig connections. ¹

The standard ideology of the movement was most likely in command at Liverpool judging by the subjects of the first three papers read: the condition of the agricultural classes, the causes of crime and the effects of prison discipline, and the building operatives' strike of 1833.²

Soon it was decided to undertake research into the condition of the working classes in Liverpool, a project the Manchester society had contemplated.³ At the annual meeting in October an impression of enterprise was conveyed by the presentation of eight papers including an analysis, by Duncan, of the material so far collected by the society's agent on the condition of the poor.⁴ But when the society published an initial number of its Proceedings most of the space was given over to bewailing the difficulties of research, in particular its expensiveness and time-consuming nature.⁵ Not surprisingly, the society soon ceased to function.

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Two more statistical societies had a brief existence in connection with the British Association: Birmingham and

1. Modern English Biography.
2. JSSL, I, May 1838, p.52.
3. JSSL, I, June 1838, p.118.
5. A copy of the Proceedings is in the Manchester Central Library.
Newcastle. At the meeting in Birmingham in 1839 a paper on the educational statistics of Birmingham was read. This was not the first manifestation of the movement in that city. At the end of 1834 a statistical committee of the Birmingham Philosophical Institution was formed and the secretary, George Parsons, wrote to London and Manchester for advice. Parsons seems to have relied a little too heavily on the London society since he was still asking for questionnaires a year later. London failed to produce the questionnaires and the committee seems to have disappeared.

In early 1838 the statistical idea surfaced again when the Birmingham Educational Statistical Society was formed. A "great meeting" was held "at which a considerable portion of the clergy attended, as well as others not connected with the establishment, and gentlemen around, in the words of J. Corrie, a magistrate, and one of the "gentlemen around". If Corrie was at all typical then he represented a bluff version of the notion of improvement with his statement that "I have no conception of any other means of forcing civilization downwards in society except education". The leading member was Francis Clark, concerning whom no information has been found, except that he may have been the son of a doctor. As Corrie indicated

2. MCSSL, I, f.67 (November, 1835).
there was a Church of England contingent - for example, William Boulthbee of a clerical family. But it must be suspected that they were the Edward Stanley and Richard Jones type of clergy since the education survey was to be criticized by many of the clergy as unfair to the church.\(^1\) The medical profession was represented by Corrie's son, John Read Corrie, a Cambridge trained man, and Joseph Hodgson, surgeon at the general hospital and son of a Birmingham merchant.\(^2\) The society appears to have been outside the small-craftsman radical milieu of Birmingham politics.

Its standpoint was intellectually closer to Manchester. When Clark presented the society's education survey to the British Association he explained that it had been reduced in scope because of the recent riots "which had engrossed the attention of the more active members".\(^3\) The survey itself was carried out by James Riddall Wood, the regular agent of the Manchester Statistical Society. The report, too, was his work since a sub-committee set up to examine its accuracy "found it impossible to test the accuracy of the statements contained in it, without going over the ground after that gentleman". Hence the report, though printed as being by the "Birmingham Statistical Society for the Improvement of Education", was sent to the Statistical Society of London as Wood's work.\(^4\) The report,

2. For Hodgson see *DNB,* otherwise *Alumni Oxonienses.*
therefore, closely followed the format and content of those by the Manchester society, with heavy condemnation of dame schools, reliance on corporal punishment, and rote learning but a nod to the value of the moral training received in Sunday Schools, even if their general instruction was poor and they were no "substitutes for a general system of education". ¹

It was a useful body of evidence to add to the growing pressure for education reform. It had been intended to be the first step in the collection of statistics for the Birmingham meeting of the British Association which it had been hoped would be held in 1838 but was deferred to 1839 because of Newcastle's prior claim. On its completion the society could not decide what to do next. ² Eventually two further projects were completed, one on commercial statistics and the other on medical statistics. The former covered such matters as savings banks, the workhouse, taxes, steampower, and the occupations and wages of the members of the local provident society. ³ The report on medical statistics was a forerunner of the local report on Birmingham for Chadwick's sanitary survey. The latter was prepared by a committee including J.R. Corrie and Joseph Hodgson (among others). The 1839 report was to have appeared in the London society's Journal, but for

1. Ibid., pp.25-49.
some unknown reason never did so - possibly the local sanitary report obviated the need.\textsuperscript{1}

The local society in Birmingham had been created to collect statistics for the British Association. Similarly, in Newcastle a committee of the "Educational Society", led by William Cargill, David H. Wilson, and Joseph Watson, was formed in 1838. The three men remain dim figures except for the fact that Cargill wrote books on foreign trade and foreign policy in general. The report was more limited in scope than intended because of "extreme difficulty" of an undefined nature.\textsuperscript{2} The report contains a short survey of the number of schoolchildren and their literacy. As with the other reports the harshest words were received for the quality rather than the quantity of education. The report closed with some very facile observations on the state of the working classes, their high wages and yet their wretchedness.\textsuperscript{3} The Newcastle committee fits easily into the Manchester mould with its mixture of sympathetic environmentalism, antipathetic moralism, and a naive belief in the virtues of education.

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\textsuperscript{1} JSSL, II, October 1839, p. 290.
\textsuperscript{2} William Cargill et al., "Educational, Criminal, and Social Statistics of Newcastle-upon-Tyne", JSSL, I, October 1838, p. 355.
Underlying much of the work of the statistical movement lay the belief that the work was properly one for central and local government which had devolved upon private societies and individuals by default. Given this notion, it might be argued that the one city where the movement was completely successful was Leeds which took municipal action. Yet in Leeds, where a statistical society was formed and where the town council undertook a survey, while the two groups were closely connected the activities of the town council seem to have cut the ground from underneath private endeavour.

The two were roughly contemporaneous. The town council's statistical committee was set up in May 1837, the society a few months later. Since the society was short-lived and abortive it is perhaps easiest to deal with it first. It was formed in January 1838 as an offshoot of the Literary and Philosophical Society. Its original fifteen members stated that their interests were the study of subjects for a statistical account of Leeds, an account of the schools connected with Marshall's works, medical statistics, population, the causes of crime and the effects of punishment on the criminal, the state of the climbing boys, and the history of the union among the Leeds' woollen operatives in 1833-4. The rather strange collection of the general and the particular was an obvious reflection of the individual interests of the

group. In particular, it is understandable that a prominent member was J.G. Marshall, one of the leading manufacturers of the area, and a man very much of the Benjamin Heywood and Thomas Ashton type. Like them he had been involved at the outset in the mechanics' institute movement.\(^1\) The society appears to have spent much of its time considering what it ought to do, for Samuel Hare, the president, presented a paper in August 1838 to the British Association outlining the "subjects for statistical inquiries".\(^2\)

The actual work of statistical research was left to a committee of the town council. The project began in May 1837 when a preliminary committee was set up "to find out the best method of obtaining statistically the condition of the borough and the expense of carrying out a survey".\(^3\) The motion had been proposed by Robert Baker who had also foreshadowed a motion on public health which was not immediately put.\(^4\) From the start, therefore, the town council inquiry was linked to the public health movement. This is not surprising for in aims and character Baker was rather like a Yorkshire Chadwick. Born in 1803, the son of a druggist, he became a poor law medical officer in Leeds in 1825. He quickly showed his flair for controversy and lack of tact by launching an attack on the state of the local infirmary in 1827. As with Kay

\(^1\) Mabel Tylecote, op.cit., p.57.
\(^2\) JSSL, I, November 1838, pp.426-7.
\(^3\) Minutes of the Leeds Town Council, IV, f.205.
\(^4\) Ibid., f.194.
the cholera epidemic of 1831-2 was a turning point in his life and caused him to write a brief study of the sanitary inadequacies of Leeds. He became surgeon to two local factories as well as a sub-inspector of factories and the conflict of interest led to charges of his being a "pluralist placeman" until he was forced to give up his private practice in late 1836. He had also become one of the Liberals on the town council.

Baker was a supporter of the factory system and told the 1833 commission that factory employees were not more "languid, weakly, or debilitated" than other operatives. He also gave tables to J.E. Drinkwater which were to involve the latter in a controversy with M.T. Sadler. The kind of viewpoint subscribed to by Baker and the Leeds statisticians was well put by J.G. Marshall when he stated that it was impossible to tell the effects of long hours of labour on children without

"a careful inquiry into other causes of disease and immorality that in fact produce many of the evils attributed to too long hours of work, and which, if removed, would render any great reduction of the present hours of labour both unnecessary and undesirable. In our opinion, the health of the workpeople in this and other large towns receives very great injury from the filthy and unhealthy state of many of the streets, from want of proper sewerage ... The great number of spirit and beer

shops, and want of efficient regulation of them, and of police generally, the want of adequate means of education and religious instruction, and of opportunities for healthy recreation. 1

If Marshall, the improving, humanitarian (to a point) employer, was the Leeds equivalent of the Gregs, Ashtons, and Heywoods of Manchester then Baker was his J.P. Kay. Baker was soon to single out Marshall's factory for special praise. 2 But there was a more important politico-medical ally for the Baineses and Marshalls then Baker in 1837. The chairman of the statistical committee was Dr. James Williamson, the mayor. He had been appointed a physician to the infirmary some time before Baker as well as becoming physician to the house of recovery and the public dispensary and a lecturer at the medical school. Like Baker he gave evidence to the 1833 commission, defending the factory system and pointing out that even pulmonary consumption in flax mills could be caused by the "sympathetic irritation... propagated to the lungs" from stomach complaints caused by too much alcohol and poor diet. He wanted "more opportunity for intellectual, moral, and religious education" and denied that "any uniform limitation of hours is essential to the physical health of children". 3 Despite the similarity of their views, both political and medical, the relationship between Williamson and Baker was far from cordial. Their personal

1. Ibid. Supp. Rep., Pt. II, p. 79; GBPP 1834 XX.
3. Ibid. Medical Rep. C.3, pp. 8-10; GBPP 1833 XXI.
conflict came to a head when Chadwick approached Williamson to do the sanitary report on Leeds and Baker submitted plans of his own which caused Williamson to resign and Baker to take over.¹

The clash of personalities did not have an immediate effect on the town council plans. The two men were united in seeing the sanitary and educational issues, that is, in a very broad sense, the problems of urbanization, as the root cause of the inadequacies of their society. The factory system was to be found an alibi by diligent statistical search of the streets, houses, and schools. It was decided to prepare for the survey by writing to the London, Manchester, and Liverpool statistical societies for advice and publications.² Before the summer recess a report was drawn up and the council voted £120 to pay the entire cost of the survey.³ This was to prove a gross under-estimate.

After the recess Baker was able to try to take the initiative. At the first meeting there was no quorum with only Baker and one other present. Although in theory nothing was done Baker was directed to present the draft questionnaires he had drawn up.⁴ But Williamson soon took

2. Minutes of the Leeds Town Council Statistical Committee, f.2. This volume is to be found on shelf 36 of the committees' strongroom of the Leeds Town Council Record Office (the minutes are hereafter cited as MSLC). Also see MCSL, I, f.148 for the letter to London.
3. Ibid., ff.3-4.
4. Ibid., ff.4-5.
charge and the town clerk, Edwin Eddison (another avowed Liberal) was appointed to draw up a report.\(^1\) Eddison's report explained that the survey had not yet begun because of the proposed new valuation of the city which would reduce the work of the statistical committee.\(^2\) The committee lapsed into inactivity while the valuation was carried out. It was not until the committee of the Literary and Philosophical Society jogged it that it came back to life.\(^3\) The statistical committee of the town council adjourned to the society for an "hour's desultory conversation" then returned and "separated without doing anything further".\(^4\) Baker had not been present and without him the committee seemed devoid of initiative. Again the committee left its work to Eddison. He drew up some forms but found competition from Baker.\(^5\) At last, after eighteen months of no progress, things began to move. A schedule was adopted and Baker succeeded in getting himself in charge of operations. Two agents were to ask the questions and one of the local deputy-registrars was to perform the laborious task of abstraction.\(^6\)

Baker's domination of the survey over the next year was aided, ironically, by a major Tory victory when, at

3. MLSC, f.7.
4. Ibid., f.8.
5. Ibid., f.9 (October 1838). Baker was sometimes occupied elsewhere as a factory inspector.
6. Ibid., ff.10-11.
the first meeting of the committee after the November 1838 elections, absenteeism by the Liberals resulted in Williamson being deposed as chairman. ¹ By now three agents were being employed and Baker was authorized to employ more as required. ² Consequently, by the time one of the wards was finished it was apparent that more money would be needed. ³ It was here that the advantages of an official inquiry showed themselves. Another £100 was granted. ⁴ Interim reports were read and Baker underlined his own motives by recommending that an approach be made to the Improvement Commissioners about the worst street nuisances. ⁵

Baker went beyond this, however, and added to the growing antipathy to the survey on the part of some Tories. At one meeting of the committee, where the two Tories present outnumbered the sole Liberal, one of the agents was suspended because he was also employed by the Liberals. Proposed questions on parliamentary and municipal rights and privileges were struck out. Baker had been printing material without the committee's approval. There was more than a suspicion that the survey had been used as a cover for discovering people's politics as well as their condition. ⁶ Baker had never been the Tories' favourite Liberal and had earlier been singled out for

1. Ibid., f.12.
2. Ibid., f.14.
3. Ibid., f.16 (February 1839).
5. MLSC, ff.16-20.
attack for his extravagance over the proposed police force. ¹

Nevertheless, by mid-October 1839 a draft report was ready. ² With a few revisions it was presented to the town council who ordered the committee to print, at a cost of not more than £50, the report, or extracts, or an abstract. ³ The reaction to the report is a fair indication of the political alignments behind it. The Tory Leeds Intelligencer dismissed it as a political charade. The radical Leeds Times gave it a moderately favourable reception. ⁴ Inevitably, it was the Liberal Leeds Mercury that waxed enthusiastic. According to the Leeds Times in 1841 the editor of the Mercury, Edward Baines jr., had a "prurient and diseased imagination concerning the working classes". ⁵ Baines was an ardent supporter of the large manufacturers and Baker's report provided just the kind of evidence and conclusions needed to clear them. ⁶

It was a large report. The chairman of the committee stated that it would take four hours to read, the town clerk six hours if the tables were included. ⁷ It was also a temporary swan-song for Baker since the writing on the wall was clear enough for him not to stand in the municipal

2. LLSG, f.23.
7. Leeds Intelligencer, 2 November 1839.
elections the next week. He thus lost his place on the statistical committee and a say in what was going to be published. He therefore acted with dubious propriety and sent the report to Rawson Rawson. A long abstract was made of it in the Journal. Since this is the paper usually thought of as the official report of the statistical committee it must be emphasized that it was in fact an abstract of Baker's report, published unofficially.

Baker called attention to the insanitary state of the streets, the lack of lavatories, the poor sewage disposal. The houses were small, overcrowded, badly ventilated, and inadequately supplied with water. Baker argued that the moral state of the people showed "a deplorable laxity of domestic discipline" because of these factors and "the want of better general regulations". This was unlikely to be improved without better educational facilities. Finally, he dealt with the physical condition of the population. Mortality was high but Baker cleared the factory system of any blame. Beyond that Baker was less dogmatic in his conclusions but the sanitary state of the town was seen as the prime cause of the deplorable physical condition of the people.

Although Baker's report became known as that of the statistical committee they rejected it for publication. There were obvious inaccuracies - for example, in the tables on church accommodation. Moreover, the size of the

1. JSSL, II, January 1840, pp.397-424.
original precluded publication and it was decided to prepare an abstract. The process of revising and abridging was delegated to Williamson. It took until November 1840 when the proofs were approved and the printing of 1000 copies was authorized. It was also recommended that a new committee should be formed to distribute the copies. The council approved. Since it was waging a campaign to obtain an improvement act for Leeds it was natural that the council should ask the committee to look into the best means of improving Leeds. In fact the statistical committee soon found itself responsible for organizing a petition on sewage and ventilation. Furthermore, copies of the abstract and the petition were to be sent to the principal towns of the United Kingdom.

But the abstract had struck trouble. Inaccuracies had been found in several tables, especially those on crime. The committee was wearying of the task and speed was essential since the desired bill was before Parliament. Therefore, it was decided to print since the report still gave a “fair view”. The committee subsequently faded out of existence. It was suggested that it should be used to support the council’s application to Parliament but that plan was dropped. A motion to reappoint the

1. MLSC, f.29.
2. Ibid., f.31.
4. Ibid., ff.242-5.
5. MLSC, ff.35-6.
committee was withdrawn in November 1841 and a separate committee on the proposed improvement bill set up instead.¹ By that time Williamson's abstract had been printed.

Copies of the abstract are now rare and it is a little-known document. It was considerably briefer than Baker's published report and was set out in such a fashion as to make its points with clarity and force. The differences of ideas between it and Baker's abstract were small and not significant. The main differences in the tables are in those of the trades of criminal offenders. Williamson checked the first few figures and found wide discrepancies (170 butchers against 272 in Baker, 117 bricklayers against 201) but time ran out and no further corrections were made after "clothiers". Thus the occupations of criminals tables in both abstracts are meaningless. The other major corrections occurred in the tables of religious accommodation since Baker was wrong on the geographical location of the churches.²

But it was Baker's inaccurate and unauthorized report which attracted attention. Ever on the alert for ways of spreading the statistical news the London society decided to print 250 copies and send them to the corporations of the major towns and cities with a letter to the mayor explaining the desirability of emulating Leeds.³ Joseph Fletcher obtained twenty-five copies for Chadwick to

¹ Ibid., f.432. Leeds Intelligencer, 13 November 1841.
³ MCSSI, I, f.247 (January 1840).
distribute. Little response was forthcoming. Pious hopes were expressed from Gateshead where action was deferred until after the 1841 census and hence forever. The one solid reply came from Sheffield.

No records of the Sheffield survey appear to have survived. However, we do know that a committee of the town council was set up. The results were sent to Rawson but publication was deferred until after the results of the 1841 census could be incorporated. But there may have been another reason. At the same time that London received the Sheffield report an article was published in the Leeds Intelligencer by a Sheffield doctor, George Calvert Holland. It attacked the factory system with a comprehensive set of statistics of earnings, population, crime and mortality. Holland was, therefore, a rare figure in social statistics. Born in 1801, the son of a Sheffield artisan, he was a Unitarian who had graduated from Edinburgh in medicine. After a period of practice in Manchester he became caught up in a medical controversy of a technical nature. He moved back to Sheffield where he was soon active in the Literary and Philosophical Society, the Mechanics' Library, the Mechanics' Institution, and Liberal politics. Apart from his artisan father his background was typical of the movement.

1. Ibid., f.257.
2. Ibid., ff.267, 270.
3. JSSL, V, April 1842, p.89.
4. Leeds Intelligencer, 8 May 1841.
5. DNB.
The reversal of the standard ideas on industrialization emphasizes both the unique nature of Sheffield society and Holland's own doubts about the ideology of improvement.

Holland was almost certainly the main figure in the Sheffield survey. In 1841 he gave a paper to the British Association on vital statistics which developed into a book in which he stated that the statistics had been collected at the suggestion of the town council and partly at their expense. In an earlier book he had favoured the factory system for its discipline but had shown his independence of mind by suggesting that education was not so effective as many thought. Holland argued that it was not easy "to elevate and refine the mass" and that some writings on the subject raised such a utopian vision that the "imagination riots in the contemplation".

By 1841 his unorthodoxy had increased to the point where he thought that "degradation, poverty, and wretchedness" were the inevitable effects of mechanization. He was soon to support protection and trade unionism and earned the enmity of the Sheffield Liberals as a lapsed heretic. His 1843 book was perhaps the most complete statistical onslaught of the period on the ideology of the

3. Leeds Intelligencer, 8 May 1841,
movement. It was a delicious piece of irony that he should also argue that it was his intention to state facts, not opinions. The "facts" included the superiority of the working classes of Sheffield to those of other industrial cities where the social hierarchy was more rigid and differentiated. The craft system was better for the people since the "machine cheapens to the starving point the labour of the industrious mechanic" though Holland still wished to see the craftsmen gathered into disciplined factories. His artisan, like Kay's or Baker's, was to be self-reliant, educated (to a point), and living in a greatly improved sanitary environment but he was also to be a trade unionist and a craftsman, not a passively unorganized machine-tender.

As with most such studies the quantification was dwarfed by the social comment. That comment could scarcely have appealed to the Statistical Society of London if it had appeared, as seems likely, in the town council's report. In that sense the 1841 census may have been a useful alibi to exclude an ideologically unpalatable paper.

The Sheffield survey was one of the last manifestations of the independent provincial movement. The Leeds report also aroused interest in Aberdeen where a committee was formed by the burgh council which in the end produced the local sanitary report for Chadwick, a document of

2. Ibid., p.11.
meagre attainments. Other ephemera had shown themselves in Halifax and Leicester in the late 1830's. At Barnsley a local mine-owner, Thomas Wilson, had also tried, but failed, to set up a statistical society.

In 1838 Rawson Rawson had stated that the Journal had been established partly with the intention of "uniting the efforts of existing Societies, and of promoting the establishment of others". The provincial societies were seen as the proof of the vitality of the statistical movement. Eight years later the council was forced to recognize "how ephemeral is the existence, how transitory the exertion of the local Statistical Societies generally". As a broadly based interconnected national endeavour the statistical movement had collapsed. It had left a number of useful reports on education and the condition of the working classes, plus a collection of odds and ends of little value.

It had been a movement with a number of common features. Where it is possible to discover anything about the membership it was dominated by the more humanitarian elements among the commercial and industrial aristocracy of the towns with a strong admixture of doctors and occasional

2. For Barnsley see the Wilson papers in Leeds Central Library, DB 178/28.
3. JSSL, I, May 1838, pp. 5, 8.
4. JSSL, IX, June 1846, p.99.
clergy. There was a near universal subscription to an ideology favouring economic growth along the patterns laid down in Manchester and Leeds, suspicious of, though not entirely opposed to government interference in industry. The source of Britain's ills was seen in rapid urbanization unmatched by a corresponding growth in social institutions. The solution was seen in terms of two areas of combined governmental, local, and individual action: public health reform and education. It was around these twin poles that there gathered a coherent social philosophy incorporating elements of environmentalism and a consciousness of moral superiority.

The sources of the philosophy require further study. Obviously it suited the Gregs, McConnels, Heywoods, and Marshalls of Britain to defend the factory system from the romantic radical Tory right and the emergent working-class left with something better than mere selfishness. The sanitary question was a perfect alibi and provided scope for reforming action. The vision emerged of a clean, seweried, paved, and swept Britain peopled with a serious, thrifty, self-reliant but not self-assertive working class passively riding the trade cycle, secure in their membership of benefit societies and savings' banks, and able to read their bible without noxious vapours from cess-pools spoiling the pleasure. In the circumstances of Britain in the 1830's this was not as limited a vision as it may sound in the 1970's (nor has its more universally acceptable aspects been entirely translated into reality). It
was a class vision though it would be erroneous to engage in the kind of language which would see the statisticians as the intellectual lackeys of the ruling class (whatever that would mean). For a crucial point to understand about the movement is that it was trying to convert the upper classes to its view of the urgent necessity for social reform. The statistical societies were companion pieces of the mechanics' institutes. The latter were intended to act directly on the sensibilities of the working classes, the former to create the evidence needed to persuade central and local government to provide more favourable conditions for the "improvement" of the working classes. Though a great deal of lip-service may have been paid to the ideas represented by the movement its failure to arouse much enthusiasm among the wealthier classes is shown by its collapse and limited achievements.

Where the statisticians got their ideas from is unfortunately beyond our compass. Clearly much is not particularly original. Especially in education the sources lie well back in the eighteenth century. At the more immediate level one likely place to look is the University of Edinburgh since its graduates were so well represented in the movement. Edinburgh was the centre of the Scottish Enlightenment and its influence on intellectual currents in the early nineteenth century was considerable.¹

Above all, interest must centre on W.P. Alison and Thomas Chalmers. Alison was the great representative of the public health idea in Edinburgh, Chalmers of a type of political economy which stressed the responsibility of the wealthier classes for acting in an evangelical Protestant tradition to help their fellowmen. Kay, for example, was not only trained by Alison but learnt much from Chalmers, whom he quoted at length in his 1832 book.

What is more central to this study is the process of collapse. Part of the reason lies in the amateurism of much of the movement—well meaning men sitting around having "an hour's desultory conversation". A common feature was the discovery of the large amounts of time and money required to complete statistical surveys, time which they could not spare and money which they would not. Nor were there enough professionals to keep the momentum going. Kay was soon siphoned off from Manchester to Chadwick's machine and then to education. Baker was an increasingly busy factory inspector (and personally unsuited to holding together an alliance of local notables). The men of Bristol were always calling on somebody else to do the work. It is useful to remind ourselves that the London society survived because of the enthusiasm of a few—a very few—drawn from the nation at large. Rawson Rawson wrote to Thomas Wilson of Barnsley that he had "learned by experience to expect little work from any body, and to take the initiative upon myself".  

1. Wilson papers, Leeds Central Library DB178/28, Rawson to Wilson, 10 July 1839.
Amateur groups could sustain activity for a while. But even if they did actually do something then they would, like Bristol, run out of topics and "finding, as they conceive, that there is nothing more to be done, become virtually extinct".\(^1\) There was little idea of repeating work, of charting changes. This was natural. The real aims of the societies had seldom been to discover previously unknown facts. The societies were not only "means to an end", as Ashton rightly notes of Manchester,\(^2\) but means to already perceived ends of a defined nature. The results of the Manchester society's education surveys could have been interpreted to imply that few children did not receive an appreciable amount of formal education.\(^3\) The possibility was ignored as criticism shifted to a qualitative analysis of the deficiencies of the existing means of instruction. The reports on the working classes were so thoroughly imbued with preconceived notions of the ills of society and their remedies that it is difficult to believe that they led to an expansion of understanding on the part of the investigators. Once, therefore, sufficient propaganda had been assembled there was little point in repeating the proceedings. Moreover, once the debate had been carried to the national level their interest in further local research was hard to sustain. By the early 1840's education and public health appeared (perhaps misleadingly) to have reached this level.

2. Ashton, op.cit., p.11.
3. Indeed have been so - see Chapter XI.
By the end of the 1830s the burden of research had moved to London. The 1838 Select Committee on the Education of the Poorer Classes tied together the provincial work to that date, legitimized it, but in the process reduced the need for further individual statistical pressure. A similar process occurred with the 1840 Health of Towns Committee which was nothing more than a way of reading into the parliamentary record some of the recent public health inquiries.1 Moreover, by that time there were men operating at the national level with far greater skill, and in more influential positions, than a Greg or even a Baker could aspire to. One of them was William Farr.

1. This committee is discussed further in Chapter X.
Chapter VIII.

William Farr and the early years of the Registrar-General's Office.

Mid-1637 may be taken as the time when England and Wales (but not Scotland) entered the modern era of vital statistics for it was then that the Registration Act of 1836 came into force.¹ That Act as it passed into law on 15 August 1636 was a straightforward measure whatever the agonies of its birth. A General Register Office for England and Wales was to index and collate the returns of births, deaths, and marriages from a two-tiered system of registrars and superintendent-registrars. Registration of births was not compulsory but the registrars could seek information which then had to be supplied. Registration of deaths was compulsory. The superintendent-registrars were to make quarterly returns to the General Register Office and the Registrar-General was to make an annual abstract of the number of births, deaths, and marriages which was to be laid before Parliament. It was an Act for England and Wales only – attempts to pass bills for Scotland had failed completely in 1634 and 1635 and Scotland was not to have civil registration until 1855. The Kirk was much more successful in preserving its monopolies than the Church. However, one dissenting congregation began to keep registers of the cause of death in 1636.²

1. 6 & 7 Gul. IV, c.86.
It had been intended that the Act should go into effect on 2 March 1337 but the delay in the formation of the new poor law unions made it expedient to delay implementation until 1 July. By that time the General Register Office had five men on the permanent establishment. T.H. Lister was Registrar-General, Thomas Mann was the senior clerk, and there were three other clerks. William Farr was employed on a temporary basis until 6 July 1339 and was not the first clerk to be put on the establishment in the statistics branch as James Thomas Hammack had been appointed three weeks earlier. The statistics branch was extended the following January with two more clerks being added and five more by the time of Lister's death in 1342. The return of the employees in the whole office in 1347 implies that a drastic reduction in the establishment took place when Major George Graham succeeded Lister. Twelve clerks out of the sixty-eight appointed up to Lister's decease were "reduced" at some stage whereas none appear to have suffered that fate among the sixteen appointed up to April 1347. Moreover, Graham made no additions in his first year and only two in the following two years.¹ Lister was probably mainly responsible for the early over-expansion. He must be suspected of taking on a large number of clerks, especially in the records and indexes branch, who were incompetent and superfluous but of good

¹ Registrar-General of Births, etc. Office, pp.4-6; GBPP 1847 XXXIV. Graham was appointed in June 1842. Nassau Senior had recommended Chadwick for the job: Chadwick papers, Nassau Senior to Sir James Graham, 6 June 1842 (copy).
Whig connections.

At the end of 1846 the Office comprised Graham, Mann, and two inspectors. Beneath them were four branches—correspondence, accounts and register books, records and indexes, and statistics. Each of these was headed by a first clerk but Farr also had the unusual distinction of a courtesy title, "Compiler of the Abstracts", though he remained a clerk, not an officer. Under Farr were three senior clerks and ten juniors and there were also ten temporary clerks working on the rearrangement of the 1841 Census statistics by registration areas. Altogether the Office had four officers, seventeen first and senior clerks, thirty juniors, and eight messengers on the establishment plus Farr's ten temporaries, six sorters of transcripts, one labourer, four transcribers, and seven indexers not on the establishment. This not inconsiderable piece of administrative machinery had grown by a process determined by patronage (under Lister), population expansion, the continuing accumulation of records, the 1841 Census (which was supervised by Horace Mann), and an expansion in the activities which remained unsanctioned by statute. The local network consisted of 621 superintendent-registrars and 2189 registrars. Altogether, it cost nearly £73,000 in 1846.¹

The quality of the local officials is not easy to ascertain. Chadwick had been defeated and once Lister and

¹ Registrar-General of Births, etc. Office, pp.6-7.
Mann were confirmed in their appointments in mid-September 1836 his influence was curtailed. Criticism of the local officials was not long in forthcoming. Chadwick found some of them intolerable: a "Calvinistic Dissenter" who favoured the separation of Church and State in Manchester, a "socialist" in Birmingham (Chadwick suffered verbal apoplexy at this and could say no more), and an itinerant nonconformist preacher, anti-corn law lecturer, and temperance man in Leeds.\(^1\) The *Times* also took exception to the local officials in reporting the case of a woman prosecuted for failing to give the particulars of birth when requested. It luridly questioned that a

"coarse and greasy district registrar, should have the privilege, choosing his opportunity during the absence of the husband, to obtrude himself, upon the plea of his official character, into the house and presence of the wife, to subject her to an examination into particulars which circumstances might make of the most delicate and distressing nature, and that at a period when the least alarm or agitation might be fatal to the woman..."\(^2\)

It is not obvious what was particularly "delicate and distressing" about the information required under Schedule (A) of the Registration Act. No doubt some appointments were ill-advised, some well-advised but unsuited.

The central administration had played no more than a small part in the selection of the officials and could not complain if the odd socialist, greasy or otherwise, were chosen. The guideline circulars had been vague with the major requirements being solvency and residence (even this

1. Chadwick papers, Chadwick to "My Lord", 8 January 1841 (Lord John Russell?).
latter was found too constricting by Lister). Of the 2193 registrars appointed by the end of 1836 just under half (1021) had been poor law officers—416 medical officers, 500 relieving officers, and 105 others. The remaining 1172 were distributed among 111 members of the medical profession, 262 in other professions, 437 "in trade", and 362 "others". Some of the last group had a varied history indeed. The registrar of births, deaths, and marriages for St. Pancras had been a commissioner of paving, lighting, and cleansing and a collector of rates. The registrar at Nailsworth (Gloucestershire) was an auctioneer and appraiser, secretary to a loan society, agent of savings' bank, treasurer to the "Society for the Prosecution of Felons", and a general house agent. Nor was jobbery excluded from reckonings: the most blatant example, perhaps, was the appointment of one of John Wilks's sons as superintendent-registrar for St. Luke's Leeds (of which Wilks senior was vestry clerk). It is not surprising that after Graham came to power doubts about the universal quality of the registrars led to the appointment of four inspectors. By 1846, as we have seen,
two were on the permanent establishment. The inspectorate must have done much to ensure efficiency, though how much we cannot say. As with so much else we must regret the lack of departmental records.

One of the inspectors' main tasks was to find out how well the registration of births was being accomplished. Apart from the exclusion of Scotland (and Ireland) the main defect of the 1836 Act was the voluntary nature of the registration of births. Therefore, a large number of births were likely to be unregistered if the registrar did not display the kind of zeal the Times found so repulsive. The change from compulsory to voluntary registration had been regretted in the Commons but could not be altered without risk of losing the whole Bill for at least another session. The deficiency in the Act in this respect was widely recognized but could not be remedied until Anglican resentment against civil registration had substantially diminished. As a corollary it might be noted that few changes occurred in the administration in the early decades as a result of officials discovering previously unsuspected defects. In 1836 the statistical supporters of civil registration wanted a compulsory system covering the whole of the United Kingdom. This, with concessions to regionalism, is what was created by stages over the succeeding generation.

The problem of births registration was in some ways one of public relations techniques for the General Register Office. It was necessary, in order to justify the system, to prove that civil registration was better than parochial
registration. It was also necessary to be able to argue that room for improvement would always exist while births registration was voluntary. The first annual report maintained such a balance. From the number of baptisms in the 1820’s it was predicted that there would be some 444,589 registrations in 1838. There were actually just on 400,000 baptisms and if the number of registrations in the fourth quarter (April, May, June) were multiplied by four then the number of registrations was already running at an annual rate of 487,124. The fourth quarter had to be taken because of the slow start with about 75,000 births registered in the first quarter. Baptisms just before and after the introduction of civil registration were correspondingly high, a result of a campaign by some members of the Church. Consequently, the Office could report a "considerable and progressive advance" to superiority over the old system despite difficulties of novelty, indifference, ignorance, and "extensive and stubborn opposition".

Little further was said on under-registration in the second annual report except to note that the registration of births was now considered complete enough to justify sub-division by county. By the time of the third annual

1. At Leeds, for example, the vicar tried to persuade Anglicans to ignore the Registration and Marriage Acts (Leeds Mercury, 1 July 1837), For cases involving refusal of information, sometimes incited by clergy, see PRO H.0.39/4.


3. Second Report, p.7; GBPP 1840 XVII.
report Lister and Farr were able to state that the 500,000 per annum mark had been passed in 1839-40.1 But the fourth report estimated that "several thousand" were still unregistered and Parliament was reminded that completeness was impossible without compulsion.2 The extent of under-registration was taken up in earnest in the sixth annual report in conjunction with an analysis of illegitimacy in various countries. There were problems of comparability in that some countries registered stillbirths while others (including England) did not. The fact which emerged was that the illegitimacy rate in England was apparently towards the lower end of the European scale. More significantly, the rates in some urban areas, preeminently London, were impossibly low even in the context of the wide variations on the Continent. Combining two of Farr's tables makes this clear.

Table 8.1: Registered illegitimacy in specified European countries and cities in the second quarter of the nineteenth century.3

<table>
<thead>
<tr>
<th>Place</th>
<th>Period covered</th>
<th>Illegitimacy rate (per cent)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sardinia</td>
<td>1828-37</td>
<td>2.09</td>
</tr>
<tr>
<td>Turin</td>
<td>1828-37</td>
<td>18.91</td>
</tr>
<tr>
<td>Sweden</td>
<td>1831-5</td>
<td>6.56</td>
</tr>
<tr>
<td>Stockholm</td>
<td>1831-5</td>
<td>40.70</td>
</tr>
</tbody>
</table>

1. Third Report, p.17; GBPP 1841-2 Sess.2 VI.
2. Fourth Report, p.9; GBPP 1842 XIX.
3. See Sixth Report, p.xxiii. Prussia, the City of Frankfurt, and probably Austria and Vienna included still-born.
Table 8.1 (Contd.)

<table>
<thead>
<tr>
<th>Place</th>
<th>Period covered</th>
<th>Illegitimacy rate (per cent)</th>
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</thead>
<tbody>
<tr>
<td>England</td>
<td>1842</td>
<td>6.72</td>
</tr>
<tr>
<td>London</td>
<td>1842</td>
<td>3.20</td>
</tr>
<tr>
<td>France</td>
<td>1842</td>
<td>7.11</td>
</tr>
<tr>
<td>Seine</td>
<td>1842</td>
<td>28.81</td>
</tr>
<tr>
<td>Prussia</td>
<td>1841</td>
<td>7.12</td>
</tr>
<tr>
<td>Berlin</td>
<td>1839-41</td>
<td>14.95</td>
</tr>
<tr>
<td>Austria</td>
<td>1842</td>
<td>11.38</td>
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<td>Vienna</td>
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<td>Norway</td>
<td>1831-5</td>
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<td>Belgium</td>
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<td>Wurtemberg</td>
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<td>Genoa</td>
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<td>Frankfort (City)</td>
<td>1840-2</td>
<td>17.23</td>
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<td>St. Petersburg</td>
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<td>18.80</td>
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A few other comparisons may be added. The City of Frankfort's rate may be placed against the 8.57 per cent registered in provincial Frankfort in 1840-1. In Sweden, the rate was 40.7 per cent in Stockholm, 16.3 per cent in "other towns", and 4.9 per cent in country districts. Farr ascribed some of the excessive number of illegitimate births in Stockholm and Vienna to foundling hospitals.

1. Ibid., pp.229-30, 236-7.
2. Ibid., pp.180,182.
which drew in girls from the country. To this we may add for Germany and Austria restrictive marriage laws which inevitably raised illegitimacy rates.¹ But Farr could not avoid the conclusion that there was a considerable under-registration of births in the larger English cities, especially London.²

The point is worth pursuing further for it suggests the major defect in the early operation of the Registration Act. Only one of the registration districts of London had a rate above the national average. And Marylebone's rate was just higher (6.9 per cent against 6.7) and was inflated by the existence of its lying-in hospital. Of the twenty districts with the lowest illegitimacy rates in England and Wales seventeen were in London which filled all ten bottom places.³ To a lesser extent the same situation prevailed in other large centres, the highest illegitimacy rates being recorded in small towns (such as Wigan) or semi-rural areas. In other words, the highest rates tended to be recorded where people had the greatest difficulty in concealing their private affairs, the lowest where it was very simple to do so.

The margin of error in the registration of births was not insignificant. It may be possible to estimate the rough order of the error if other demographic

3. Ibid., pp.xxxii-xxxiii.
characteristics of London are studied. One of these may be derived from one of the most dubious statistical experiments conducted in the 1840's by Farr - the attempt to gauge national literacy and educational levels by the simple test of the percentage signing the marriage registers with a mark. The national average for men was 32.9 per cent (1838-45) and for women 49.2 per cent. For London the corresponding percentages were 11.8 and 24.1, the lowest in the country and well below that for the surrounding counties. If we assume that London had no effect on the literacy of its English and Welsh immigrants, who were overwhelmingly aged between fifteen and twenty-five at the time of migration, then, from the place of birth tables in the 1851 Census, we may deduce that the proportion signing with marks among the English non-London born should be 38.0 per cent for men and 47.7 per cent for women. If we further assume this to be true for all Londoners then the male figures would indicate an under-registration of "marriages" of 29.7 per cent, the female 31.0 per cent. The deduction, of course, is too tenuous to be regarded as exact, but the correspondence between the two last figures is remarkable and in no way implicit in the method.

The other notable anomaly in London's figures lies in the total number of births registered. The crude birth

1. Eighth Report, p.xxx; GBPP 1847-8 XXXIV.  
2. Deduced from Eighth Report, pp.lvii-lviii and Census of Great Britain, 1851. Population Tables, Pt.II, 1, p.31; GBPP 1852-3 LXXXVIII Pt.I. This is based on adults only.
rate was not low but it must be remembered that the age-structure of London's population was highly biassed towards young adults. The registered birth rate per thousand women aged fifteen to forty-four was 109.2 for London (1838-45) compared with 134.3 for the country as a whole (including London). If we assume an under-registration for London of twenty per cent and no other under-registration in the country, then the birth rates per thousand fecund women would be raised to 139 and 140 respectively. D.V. Glass, using much more technically sophisticated methods, has estimated that registration in the period 1841-5 should be multiplied by 1.094 to arrive at births. Applying this multiplier to non-London births for 1841-5 and then allowing for twenty per cent under-registration in London and a growth of population of 2.7 per cent to adjust to mid-1843 would give an overall under-registration of 10.1 per cent, 14.8 births per hundred women fifteen to forty-four and a crude birth rate of 35.2 per 1000. Allowing twenty-five per cent under-registration in London would give 10.9 per cent, 15.1, and 36.1.

These estimates are still conceivably a little too low.

1. In the 1841 Census it was found that 35.3 per cent of the male population of Middlesex was aged twenty to forty compared with 30.1 per cent for England. For females the proportions were 37.6 per cent to 31.5 per cent. (Census of Great Britain, 1841. Preface; GBPP 1843 XXII).

2. D.V. Glass, "A Note on the Under-Registration of Births in Britain in the Nineteenth Century", Pop.St., V, 1951-2, pp.70-88, esp. p.85. I have deliberately not examined Professor Glass's excellent article in detail but preferred to let the reader compare the two approaches which are more complementary than contradictory.

3. Ibid., pp.84-86.
If we adopt the round figures of ten per cent under-registration outside London and twenty-five per cent for London we obtain an overall under-registration for the period 1341-5 of 11.3 per cent, a crude birth rate of 36.3 per thousand and fertility rates of 14.8 per thousand women aged fifteen to forty-four for London and 152 for the country as a whole.  

This arithmetical game has endless permutations but the general conclusion is apparent. Glass's suggested multiplier for 1341-5 (and, one suspects, for 1346-50) is probably too low as Glass himself indicated. An under-registration of ten per cent or slightly more (but not much greater than the 11.3 per cent arrived at above) for the whole country for the first period seems likely. For London the under-registration was probably nearer twenty to twenty-five per cent with a sliding scale of adjustment down to nearly complete registration in rural areas. If fertility levels remained unchanged then we may deduce that under-registration was still at about nine per cent in 1346-50 and six per cent in 1351-5. 

This early high degree of under-registration points not so much to the inefficiency of the administration by the local officers as to the existence of a large segment of the lower class population which for all practical

1. A crude birth rate of 36.3 is higher than estimates for the 1360's but the fertility rate of 152 per thousand is marginally lower (Glass, op.cit., p.85).
2. Glass puts the inflation factors for these two periods at 1.064 and 1.051 implying under-registration of 6.0 per cent and 4.9 per cent respectively. On 8 February 1344 Graham wrote to Chadwick, "I calculate that out of 10 births at present at least 1 escapes Registration" (Chadwick papers).
purposes remained outside the scope of government. The marriages of this group were often de facto insofar as they had any permanence and the resulting children were both illegitimate and unregistered. It is the gradual disappearance of Dickensian London and its provincial relatives rather than increased administrative efficiency which explains the continued reduction in under-registration after the big decrease of the first few years. No doubt this is a simplistic picture, possibly an incorrect one, but greater coherence cannot be expected until further research into this period which has been neglected in the general rush to the seminal phase of the Industrial Revolution.

The identification of the social wilderness of the great towns as the dominant cause of births under-registration also undermines in one way the assumed early efficiency of the registration of deaths since it would be necessary to infer a rather higher infant mortality than that normally calculated. But outside that very particular area there is little reason to be sceptical about Farr's confidence over the completeness of his returns for the number of deaths. In the first annual report they were reckoned to be no more than two per cent deficient whereas it was thought that the parish registers would exclude one seventh.1 If rather more than ten per cent of infant deaths went unrecorded then Farr's two per cent would have

to be raised to four to five per cent in the first few years of registration. But under-registration of non-infant deaths was probably negligible. Moreover, the registration of infant mortality was considerably more complete under the new system than the old. As Farr stated, the new registers showed 2140 out of 10,000 occurring under age one compared with 1975 in the burial registers for 1818-30 and 1760 for ages one through four compared with 1474.1

Because of their confidence over completeness Farr and his colleagues were able to concentrate on what they considered to be the most serious weakness of the early registration of deaths, the partial incompleteness and inaccuracy of the information supplied under the cause of death head. The problem divided itself into two parts. Firstly, medical practitioners were urged to fill in the forms since a few did not bother to do so. Secondly, Farr had to devise some means of classifying the material. For the first Farr had to rely on exhortation and the support of influential opinion. The exhortation usually took the form of a generalized affirmation of the benefits to be gained from registration. The influential opinion, in the first report, was an open letter from Henry Halford, President of the Royal College of Physicians, Astley Coope, President of the Royal College of Surgeons, and J. Hingeston, Master of the Society of Apothecaries, asking all medical practitioners to cooperate on the cause of death

1. Ibid., p.14.
schedule with the Registrar-General's Office.¹ The letter had previously appeared in medical journals and was backed by editorials.² It had been reprinted in a circular of January 1838 explaining the duties of local officers under the Registration Act. In a circular sent to all physicians, surgeons, and apothecaries in July 1845 the letter was reprinted and subsequently published in the seventh annual report.³ There was still a hard core of opposition for the Medical Times in an editorial reported receiving several letters against registration and called for cooperation.⁴ It was backed by the Times, which reversed its earlier scepticism.⁵

The Registrar-General's Office was fighting against a residual legacy of its association with the Poor Law Commission. In the early days of its operation one speaker at an angry meeting of the Huddersfield Board of Guardians said "I am only sorry that so good an Act of Parliament should be coupled with such a bad one as the new Poor Law".⁶ A letter to the Medical Times in October 1845 brought up the old grievance of the tender system and argued that a doctor should be paid for registration otherwise "he would be giving something for nothing, as the New Zealanders did to the missionaries". This brought forth another sharp rejoinder from the editor.⁷ The cause was taken up by the

1. Ibid., Appendix (N).
2. E.g. see Lancet, 1836-7-II, pp.345-6, 348-9.
3. Seventh Report, pp.xviii-xxi; GBPP 1846 XIX.
5. Times, 3 September 1845. Also see 2 November 1846.
London Medical Gazette in January 1846 which was more concerned with carelessness than intentional omission.\textsuperscript{1} The exhortations faded away as, presumably, the few unreconstructed doctors did.

More serious, from both the contemporary and historical standpoints, were the obstacles encountered in devising a satisfactory means of classification. Doctors might fill in the forms but what they filled in could be vague and meaningless. Returns also had to be compared if the great scheme of investigating disease-specific rates of mortality was to be carried out. Farr set about the job immediately in the first annual report with a new statistical nosology. The most common nosology in use at the time was that of William Cullen, the great Edinburgh physician of the third quarter of the eighteenth century. Farr saw it as not only outdated but ill-adapted to statistical purposes. The basic principle which Farr tried to establish was that unclear distinctions should be abolished. This was a necessary precondition for Farr who referred to his plan in one of those striking phrases which are strewn across the early reports: "classification is another name for generalization, and successive generalizations constitute the laws of the natural sciences". The desire for uniformity took precedence over completeness since in the first half year of registration some cause of death had been inserted in 141,607 out of 148,701 deaths.\textsuperscript{2}

In the appendix to the fourth report the material presented in 1839 was modified and the original statistical nosology was refined and extended.\(^1\) Farr explained that he had no basic dissatisfaction with the early registration but wished to make improvements in detail. The new nosology received a mixed review in the *London Medical Gazette* which criticized ambiguities in some of the names as well as some of the causes.\(^2\) Farr, however, persevered with it and the circular of July 1845 offered a free copy of the nosology on request and enclosed a book of blank forms of certificates of death which included spaces for primary and secondary causes. These circulars were sent to the registrars for distribution.\(^3\) There are signs of decreased concern after this, partially due to fewer inadequate registrations but also reflecting the shifting interest of Farr who became less single-minded about the analysis of the causes of death.

In the seventh annual report Farr was able to compare civil registration with the burial registers for the years 1838 to 1840. In 1838 the burial registers were deficient by a margin of 14.6 per cent which increased to a constant level of nearly 15.4 per cent the next two years. Civil registration was justified.\(^4\) Farr had never doubted this, even over the registration of the cause of death where it was agreed that there was a greater margin of error. With

4. Ibid., p.vi.
slight reservations we may also agree that the totals were nearly complete. The cause of death is a different matter since in the state of medical science in the 1840's there would be a very great deal of mis-diagnosis. It is instructive to note that a recent study of the cause of death assigned by clinicians and by pathologists after a post-mortem showed that the same underlying cause of death was given in 45.3 per cent of the deaths though only one quarter of the cases involved disagreements over facts and there was a tendency to compensatory errors. Perhaps, therefore, Farr's statistics of the causes of death should be treated with caution.

Farr probably realized that the statistics were useful only in broad outline for he seldom utilized the minute medical and geographical sub-divisions which in the earliest reports appeared in the massive following tables. These reports stand as a testimonial to one of the great medical statisticians. William Farr was born in 1807, the son of a Shropshire farm labourer. His parents migrated to a local village to become servants. At the age of two Farr was adopted by the local squire, an elderly bachelor. The move was advantageous for at an early age it brought Farr his first patron. In 1826 he was indentured to a

Shrewsbury physician. In 1329 he went to Paris and stayed there for some time. In 1332 he gained the licence of the Society of Apothecaries, the only formal qualification he gained. For a while he was a house surgeon at the Shrewsbury infirmary but, after his marriage, he set up practice in London. He was probably not very successful but was involved in a number of literary ventures such as editing journals as well as doing the statistical work for Sir James Clark's book on consumption in 1335. His success, then, was dependent upon patronage but his varied background ensured a great sympathy and understanding of human problems, especially those of the lower classes. Moreover, after only three years of marriage his first wife died of consumption in 1337.1 Behind the reports, with their insistence upon the quantity of needless suffering and early mortality, perhaps there lies unrevealed personal emotions.

The range of subjects covered in the reports is very wide indeed. The breadth of erudition displayed is appalling to the over-specialized scholar of the late twentieth century, the battery of epigram after epigram overwhelming to the historian attempting to sift the material for the more important sections in order to summarize them. To do

1. This account of Farr's early life is based upon three sources: some notes for a biography by Joseph Whittall in the Farr papers, X, ff.2-3 and Major Greenwood, The Medical Dictator and Other Biographical Studies (London, 1936), pp.91-120. There are also some long obituaries and a typewritten survey of bibliographical and biographical materials in Farr papers, IX. Finally, see N.A. Humphreys (ed.), Vital Statistics: a Memorial Volume of Selections from the Writings of William Farr (London, 1885), pp.vii-xxiv. Farr remarried in 1841.
so is to do an injustice to Farr, the assistants he brilliantly directed, and even George Graham who, as the second Registrar-General, gave him able backing. There is little dross in the early reports which entitle Farr to wider recognition and a place among the small band of truly excellent practising social scientists of the nineteenth century.

Farr's works are little read today, may even have been little read in his own time. The annual reports and appendices for which he was responsible, whoever signed them, do not arouse antiquarian interest or figure among desert island literary survival packs. There are no entries in dictionaries of quotations under his name. Yet had he had the publicity flair of a Chadwick or a Simon or a Kay-Shuttleworth some at least of his more striking phrases might have found a place. An undated remark provides the basic key to Farr's ideas: "There is a certain relation between the value of life and the care bestowed on its preservation". There are many other phrases worthy of being singled out: "diseases are the iron index of misery"; "the aggregation of mankind in towns is not inevitably disastrous"; "To save the life of one human being is meritorious; but here are thousands to be saved in every part of the kingdom from sickness"

2. Farr papers, II, f.41.
and untimely death";  
1. "man's course is determined by opinion; and opinion uninformed by science is full of delusions, wayward and prone to exaggeration";  
2. "knowledge will banish panic".  
3. They are signs of one of the best Victorian rationalist reforming minds in full operation. Further than this Farr was one of the clearest exponents of a considered environmentalist theory of the time. He believed that poverty and despair were the result of poor living conditions and that their inevitable concomitants were high rates of disease. These could be partially reduced by sanitary measures but otherwise would have to wait upon rising standards of living. Farr never succumbed to the monoideism of a Chadwick.

Like many great social scientists Farr did not develop these theories so much as a result of his investigations as he followed certain types of investigations because he was convinced by these theories. In a long and revealing passage in the first report he makes this apparent. Moreover, the work he carried out to prove his theories and its publication was not, strictly speaking, sanctioned by the 1836 Act as was noted in the instance of the causes of death in the second annual report.  
4. This barrier was at first circumvented by the device of the "letter" which Farr "wrote" to the Registrar-General and which was then reprinted as an appendix to the official report. It is in

2. Eighth Report, p.xxxv.  
3. Ninth Report, p.xvii; GBPP 1847-8 XXXV.  
the letter in the first report that Farr issued his manifesto:

"Diseases are more easily prevented than cured, and the first step to their prevention is the discovery of their exciting causes. The registry will show the agency of these causes by numerical facts, and measure the intensity of their influence. The annual rate of mortality in some districts will be found to be 4 per cent, while in another set of circumstances, which the registry will indicate, they do not live more than 25 years. In these wretched districts, nearly 6 per cent. are constantly sick, and the energy of the whole population is withered to the roots. Their arms are weak, their bodies wasted, and their sensations embittered by privation and suffering. Half the life is passed in infancy, sickness, and dependent helplessness. In exhibiting the high mortality, the diseases by which it is occasioned, and the exciting causes of the disease, the abstract of the registers will prove, that while a part of the sickness is inevitable, and a part can only be expected to disappear before progressive social amelioration, a considerable proportion of the sickness and deaths may be suppressed by the general adoption of hygienic measures which are in actual but partial operation. It may be affirmed without great risk of exaggeration, that it is possible to reduce the annual deaths in England and Wales by 30,000 and to increase the vigour (may I add the industry and wealth?) of the population in an equal proportion?."

This is not the voice of a man seeking answers to new questions but that of a man wishing to state accurately his theses about the nature of urban society and demonstrate them to the public by irrefutable, government collected statistics. With only six months material to hand Farr was prepared to state that, all else being equal, mortality increased with density and that where density and affluence were equal then mortality depended upon the effectiveness of waste disposal. Unfortunately, his own tables showed that the densest areas were not always the

most unhealthy, a result that Farr interpreted to mean that mortality could be reduced by artificial agencies.¹

The next year he returned to the subject armed with a complete year's figures which enabled him to elaborate upon the "true causes" of high mortality. Again the blame was laid on overcrowding and insanitary conditions which could be greatly ameliorated by effective sewage disposal and by the "dilution of inevitable exhalations".² Farr realized that social reform could best be carried out if good economic reasons could be given. Therefore he came up with a scheme for sewage recycling as manure which was later to be taken over by Chadwick, who was always adept at inventing other people's ideas.³ Farr went further in 1840 and tried to design statistically controlled experiments which would enable him to separate out the influences of sex, location, climate, seasons, and epidemics on mortality.

The expansion of subjects was continued in the third annual report with a long discussion of violent and sudden deaths, an examination of the influence of seasons on mortality, of mortality differences by sex, deaths in London hospitals, age-specific rates for various causes of death, urban-rural differentials, influence of locality and occupation, and epidemics. He also extended the brief analysis of the second report of the age at marriage.⁴

¹. Ibid., pp.78-9.
³. Ibid., p.12.
The discussions of violent and sudden deaths were paradigms of the Farr method. Firstly, Farr demonstrated that violent deaths were often related to occupation. Then, while conceding that some violent deaths were almost unavoidable, he reeled off a list of reasons and questions directed towards the assertion that mortality could be greatly reduced. If some mines and factories were better than others then all could be improved. Mines could be better ventilated, people who work at heights should not drink, research might make cotton and linen less combustible, fireguards should be used, poisons and drugs should be harder to acquire and be kept out of the reach of children, people should learn to swim. Other violent deaths could be averted. Suicide and murder were often committed as imitative acts and thus newspaper stories of violence should be discontinued for it was highly questionable whether "the advantages of publicity counterbalance the evils: attendant on one such death". High suicide rates were also associated with unhealthy areas and could be reduced by pure air and exercise.¹ In any event there should be much deeper research into the circumstances surrounding any sudden death.² What is striking about all this is not so much its humanity as how little the tediously collected and collated statistics were required. The real function of the General Register Office was to be another government-sponsored pulpit for reforming ideas.

1. Ibid. App., pp.5-15.
2. Ibid., pp.15-19.
In the fourth annual report Farr was able to complete one piece of research which he had touched on the previous year. With the results of the 1841 Census to hand he tabulated all deaths by age, sex, and successively small units of area down to the sub-district level. One other feature was an essay on the growth of population notable for its anti-Malthusian approach.\(^1\) The last principal point of interest was a discussion of the numbers that marry and remarry.\(^2\) Otherwise there were no major innovations.

The following year, 1843, was one of crisis. It was a crisis of vague dimensions in retrospect but the Office was under the impression that there was a serious move for the repeal of the Marriage and Registration Acts and a nervous collection of newspaper clippings was made to add to those previously collected.\(^3\) Understandably the fifth annual report is something of a tour de force. The investigation into marriage and remarry continued.\(^4\) The seasonal influence on mortality was summarized into a neat little law which stated that the annual mortality equalled twice that of the spring plus the autumn equalled twice that of summer plus winter.\(^5\) Neat but useless and therefore no justification for government expenditure. What was a justification was Farr's glittering centrepiece

2. Ibid., pp.6-9.
3. See General Register Office, CZ1.1.
5. Ibid., p.ix.
of the display, the discussion of mortality tables and the presentation of English Life Table No.1. It was fan-fared by a history of life tables in which the nations of Europe were exhorted to channel their chauvinism into a rivalry for the production of the best official statistics. The methods used in the calculation of the table were explained as were the terminology and potential utility of the table. This last gave Graham and Farr the opportunity to compliment the middle classes on their "favourable reaction ... on the highest departments of science, and on the physical condition of the people" since England led in actuarial science. The supporters were rather blatantly being rallied.

Actuarial applications were only one aspect of the life table. It was also seen as a representative of the age, of the triumph of Victorian enlightening of social conditions as their forbears had conquered the ignorance of the heavens. In that rationalist dawn of the social sciences Farr could foretell the future on the basis of laws as immutable as those of Kepler and Newton. He predicted that 9398 out of each 100,000 born in 1841 would be alive in 1921, a prediction he likened to Halley's confidence in the return of the comet:

"What knew Halley of the vast realms of aether in which that comet disappeared? Upon what grounds did he dare to expect its reappearance from the distant regions of the heavens? Halley believed in the constancy of the laws of nature ..."

1. Ibid., pp. xii-xv.
2. Ibid., pp. xviii-xxiii.
Although we little know the labours, the privations, the happiness or misery, the calms or tempests, which are prepared for the next generation of Englishmen, we entertain little doubt that about 9000 of the 100,000 of them will be found alive at the Census in 1921.\(^1\)

It was quite inconsistent with the notion that mortality could be reduced but the inconsistency was immediately set down in print. While their necks were still craned towards the golden future promised by the Registrar-General the sewage was lapping round the feet of Englishmen. Thanks to the Office this problem too could be solved. By the study of differential rates of mortality useful information was given

"not only to those professedly engaged in sanitary and statistical inquiries, but to the inhabitants of the respective districts, who are really the parties most interested".\(^2\)

That was a modest claim compared with an earlier one that stated bluntly that the barrier to ascertaining

"the influence of external causes upon health and longevity, has now been overcome in this country by arduous labours of scientific inquiries, and by the conjoint enumerations of the ages of the population and the registration of Births and Deaths".\(^3\)

To prove the claim there were graphs of life-tables for England and for Surrey, Liverpool, and London (with an enormous age-axis but still the first graphs to appear in the reports),\(^4\) twenty-eight pages of deaths by ages,\(^5\) and one hundred pages of deaths by cause, age, and

1. Ibid., p.xvi.
2. Ibid., p.xxxiii.
3. Ibid., p.xxvii.
4. Ibid., pp.xxxvi-xxxvii. The graphs were discussed at pp.xxiii-xxvi.
5. Ibid., pp.32-59.
In what was by now an established pattern many people were shown to fall short of their allotted lifespan from remediable causes. Instead of seventy years they had but twenty-six to forty-five and so were deprived of

"years of childhood and youth principally - years of toil too and poverty perhaps, but of life - years also of manhood in its prime, wisdom in its maturity, virtue in its height of usefulness and glory. The facts ... will be confirmed by the still more extended data which are every year accumulating under the present system of Registration. In the mean time enough has been advanced to direct public attention to the "hidden pitfalls", which had so long lain concealed, which destroy every year thousands of lives, and which it is believed admit, to a considerable extent, of removal by the judicious application of sanitary measures".

Clearly no man of heart or sense could fail to support the Office in its endeavours.

This was Graham's first full report, though written by Farr. It was a ham performance of heroic dimensions wringing out every last drop of sympathy and support for the Office. Like most ham performances it covered up underlying inadequacies. Farr's work may not have added as much to knowledge about the causes of death as he claimed though it may have proved things to non-specialists about which they were previously dubious. One must take a very hard look at Farr's insistence that one hundred pages of tables on the causes of death formed the indispensable statistical concordance to the local administrator's textbook. Nor is there a great deal of evidence to demonstrate

1. Ibid., pp.60-159.
2. Ibid, p.xxviii.
that the early reports had a major effect on the public conscience. They seemed to have lacked the immediacy which gave Chadwick's 1842 Sanitary Report its great impact though, of course, Chadwick and others used the registration data to support their arguments.

Moreover, as Farr's writings became more scientific the reports were that much decreased in the universality of their appeal. The fifth report may be taken as the dividing line. The part intended for the general public, that part which was published over Graham's name, is full of generalized statements of little substance designed to prove the worth of the Office. The problems of the causation of death which had originally dominated Farr's research were stated to have been solved. On the other hand, Farr's appendix included a splendid treatise on life tables which must have been incomprehensible to all but a handful of readers. The application of the theory of differences and interpolation to the construction of life tables was treated in an elegant passage. Only after this did Farr proceed to less technical questions. High infantile mortality (said Farr, dealing with new questions) could be controlled by better training of nurses and midwives. Other mortality differentials were generalized into equations showing Farr's shift from practical to theoretical questions, from application to methodology.

2. Ibid. pp.186-7. In true Farr fashion there was a footnote on the derivation of "midwife" from "medewyf" meaning a woman of mede or merit, deserving recompense.
Life could be expressed in terms of seven parameters—drink, food, medicine, clothing, firing, lodging, and cleansing. Income divided by the cost of these multiplied by the mean physiological duration of life equalled life expectancy. A general identity for mortality and density of population was also calculated. Hence the density variable was controlled to reveal the impact of other factors.¹ Farr, challenging Chadwick, put forward his own solutions to high urban rates: more hospitals, better sewage disposal, and the equalization of poor rates and other local taxes in large local authorities.² In this way poverty, which caused widespread "depravity of mind and habits", would be eliminated, although it would require generations.³

The report was concluded by what can best be described as a proto-Booth-style survey of living conditions in London. Circulars were sent to the registrars of the 125 registration districts of London in October 1842. The primary purpose was to compare areas of high mortality (down to the street and house level) with the drainage, density, occupations, earnings, food, firing, and moral habits of the people in those areas. 120 returns obtained by the end of October were reprinted but the lack of a framework in which they could be placed for useful comparative purposes rendered abortive one of the most interesting projects launched in this period.⁴

1. Ibid., pp.197-209.
2. Ibid., pp.211-4.
3. Ibid., pp.214-5.
4.Ibid., pp.248-324.
Despite this failure the fifth report represents both a turning and a high point of the first decade or so in the life of the General Register Office. A slight loss of momentum is discernible after this. Farr did not settle down in the early years to a routine of producing annual statistics on the same problems but tended to move on to further questions once he was reasonably satisfied with the reliability of his answers. In the sixth report, as we have seen, he dealt mainly with foreign returns, especially those on illegitimacy. He furthered his work on life tables and added tables of insurance premiums for males and females of different ages. Little space was devoted to other topics, including the analysis of the causes of death.

The last two topics worked themselves out within the next three reports. In the eighth report Farr carried out an excellent dissection of the Northampton Tables which were still used by most insurance offices.\(^1\) As for the causes of death it was clear that Farr had lost interest, at least temporarily. There was little comment in the sixth report and in the seventh and eighth the figures were given for London only. By the ninth report they were not included at all but were reserved for the weekly publications for London and were not included again in the parliamentary reports until 1857.

Attention had been moved to three topics: education,

\(^1\) Eighth Report, pp. 289-325.
marriage, and methodology. The first was covered by the proportion signing the marriage registers with a mark which Farr took as an index of literacy. The seventh report dealt in part with this and Farr produced statistics on it for many years.\(^1\) As for marriage itself Farr demonstrated in the eighth and ninth reports a close correlation between marriage rates and economic fluctuations.\(^2\) The main significance, however, of the reports of these years lies in their treatment of the methods of collecting demographic data, in itself an indication of Farr's loss of enthusiasm for his first concerns. He was like an intelligent boy with a building set he had had for some time. Kit no.1 was fun and absorbing for a time but its possibilities had been exhausted and he now wanted more advanced kits with which to build more complex models.

In the seventh report the extras requested were registers of migration and annual revision of the census lists,\(^3\) the recording of the age of the mother at marriage and at the time of birth of her children,\(^4\) and the extension of civil registration to Scotland and Ireland.\(^5\) Farr also designed a complete new kit with a rearrangement of the 1841 census material for Kent in which the population was enumerated by sex and the districts by number of houses, area, and land-type according to successively

3. *Seventh Report*, p.v. The phraseology is ambiguous and could mean an annual census.
4. Ibid., p.xii.
5. Ibid., p.xvii.
smaller units of registration districts, sub-districts, and parishes. The same geographical divisions were gone through by sex and age and then the divisions were changed to parliamentary cities, boroughs, and counties and the processes repeated. Finally, the population in institutions was counted and classified.1 Part of this work was continued in the very long (462 pp.) appendix to the ninth annual report. In it were the rate of increase, population, deaths, and death-rates by registration divisions, registration counties, and districts; population by sex and number of houses by districts and sub-districts from the census of 1841, and the population by age and sex in the parliamentary counties for the census years 1801-41.2 Farr's ten temporary junior clerks had earned their money.

The concentration on improving the methods of collection and presentation of demographic statistics was shown in the tenth annual report not by any new material but by the complete absence of Farr's usual appendix. The report was restricted to thirteen pages of abstracts and official comments which set the model for the next few years.3 Farr, with Horace Mann, had moved on to preparing directly for the 1851 Census which was to be a showpiece for mid-nineteenth century English demography. The early phase of civil registration had come to an end.

1. Ibid. App.; GBPP 1846 XIX.
3. Tenth Report; GBPP 1849 XXI. The reports were separately republished in a smaller format and when the tenth report was published, three years later in 1852, it included much fuller tables including ones on the cause of death.
It was an end which was more like what the beginning ought to have been than the beginning actually was. The brief tenth report of 1849 is what might have been expected from the clause in the 1836 Act laying down the requirement for the presentation to Parliament of an annual abstract. Instead, the "annual abstract" had grown to mammoth volumes of up to 500 pages which collectively formed one of the nearest things to a periodical encyclopaedia that has ever been issued by a British government department. In this chapter we have mentioned but a few of the many questions touched on or fully discussed in the reports and only the barest outlines of those we have studied have been given. This multi-faceted endeavour by Farr was a source of both strength and weakness. Strength in that it entitles Farr to be regarded as the greatest British statistician of his time. Weakness in that the Office could not properly perform the functions of ten sociology departments and a number of research units on its own, nor was it meant to. For the historian all the data is of value but for the contemporary the resources and arguments may have been spread too thinly over too many causes to have had a great impact on the public consciousness. It is not the Registrar-General's annual reports which spring to mind when one thinks of the formative influences on the development of the reforming social conscience of the mid-nineteenth century. Nevertheless, Farr was, like the statistical movement as a whole, a part of the drive to convert the political nation to a particular set of reforms. Moreover,
his work did provide ammunition for other forces in the battle and therefore may have contributed to what small victories were won by the end of our period.
Chapter IX.

Health and Occupation.

The Registrar-General's Office was not the only official source of vital and medical statistics in the late 1830's and 1840's. Apart from the familiar example of Chadwick's work there appeared a series of official reports on the health of army and navy personnel. The army statistics take precedence both in timing and expertise. Their genesis is clear. The first report was on the health of the troops in the West Indies. This had been giving cause for concern for some time and in 1834 the Deputy Inspector-General of Army Hospitals, Sir Andrew Halliday, wrote to the Secretary of State for War.¹ Halliday claimed in a pamphlet of 1839 that he was responsible for the idea of the reports. This claim should be placed in the context that the pamphlet was an attack upon the choice of people outside the Army Medical Department to prepare the reports. Halliday felt his department would have made a better job. This is doubtful, for as Halliday himself admits, public estimation of the department was low. One hint of its ineffectiveness is the lack of surviving records for the late 1830's apart from a regulation governing the wearing of a shell jacket in

¹ Sir Andrew Halliday, A Letter to the Right Honble. the Secretary at War, on Sickness and Mortality in the West Indies; Being a Review of Captain Tulloch's Statistical Report (London, 1839), pp.3-4.
lieu of a frock coat for officers. Nor was Halliday the only person to urge summarization of the medical officers' returns. Sir James McGrigor, Director-General of the department, had repeatedly called for a digest to be made of the folio volumes of returns starting in 1816 (which by 1836 had reached 160 in number).

Nothing might have been done had not the specific issue arisen of the alleged unhealthiness of the lower floor of the officers' barracks in the Bahamas which resulted in the setting up of a medical board in October 1835. Underlying this seemingly trivial matter was the whole question of the causation of disease on foreign stations and the best means of reducing the high mortality experienced by officers and men. At the same time the adequacy of the diet of the troops was under consideration (having first been discussed in the West India Commissariat in September 1835). Consequently, in October 1835 the Secretary of State for War, Viscount Howick, determined upon an inquiry into the health of the troops designed to reduce the loss of life. Henry Marshall was placed in charge of the operation.

Marshall was a man of some sixty years of age. His father had been a relatively poor inhabitant of Stirlingshire. Marshall the younger studied medicine at Glasgow

1. Ibid., pp.2-5. P.R.O., W.O.3/446, f.74.
2. Statistical Report on the Sickness, Mortality, and Invaliding among the Troops in the West Indies, p.iii; GBPP 1837-8 XL. Hereafter referred to as West Indies(1).
3. Barracks (Bahamas, etc.), p.3; GBPP 1840 XXXIV.
4. Ibid., p.53.
5. West Indies(1), p.iii.
afterwards joining the navy and then, in 1805, transferring to the army. For a man of little social standing he rose high, to the post of Deputy Inspector-General of Army Hospitals in 1830. Over the next few years he published a number of articles on army statistics in the *Edinburgh Medical and Surgical Journal*. One of the earliest was a paper on the geographical distribution of diseases. More clearly a forerunner of the official studies was a paper on the medical returns of the army. In it Marshall called for uniform returns so that comparisons could be made to estimate the influence of climate and disease. The argument was repeated in a subsequent paper. Marshall did not anticipate an official survey for in a paper on the French infantry he expressed the hope that the Statistical Society of London would study the vital statistics of various classes in society. Nevertheless, Marshall had already used the manuscript returns of the medical officers and was an obvious choice to head Howick's proposed inquiry.

But Marshall's role was quickly reduced to a supervisory one by the circumstance of his transference to

4. Ibid., pp.43-4.
Edinburgh in 1836. The bulk of the work was undertaken by Lieutenant Alexander Murray Tulloch whom Howick had brought in from outside the medical department. Like Marshall, Tulloch had distinguished himself in the previous few years by a series of articles on army statistics. Like Marshall too, Tulloch had a Scottish background. Born in 1803 at Newry he came from a Jacobite family. He was initially intended for the law and began his practice in Edinburgh (presumably after studying there). He quickly threw this up and joined the army, being posted to India. There he immediately attacked the inadequate diet of the troops and other abuses.\(^1\) After his return to Britain he began to express his ideas in some anonymous articles in the *United Service Journal*.\(^2\) One of these criticized the existing system of military pensions. Much of the technical part of the argument revolved around the exact amount of mortality among the troops and Tulloch called for detailed studies of the "mortality at each station occupied by British troops".\(^3\) The article demonstrated an impressive grasp of actuarial methods. In a later number Tulloch raised the question of the mortality among officers.\(^4\) The major motive was an actuarial one.

1. DNB.
2. There is no question of Tulloch's authorship. An editorial note later acknowledged it (1838, Pt. III, p.235n) and some of the copies in the University of Edinburgh Library contain Tulloch's signature.
but Tulloch favoured investigations "from the statistical point of view" which would help to improve the condition of the troops and reduce the high levels of morbidity and mortality. He hoped that others "of due competence and authority" would take up the burden. 1

Howick decided that Tulloch had the "due competence" and gave him the authority. That his worth was appreciated is shown by his promotion to captain in 1838, major in 1839, and lieutenant-colonel in 1844. 2 With Marshall in Edinburgh Tulloch assumed direction. From April 1836 he was aided by Thomas Graham Balfour, an assistant-surgeon in the Army Medical Department. Balfour was another Scot who had recently graduated in medicine from Edinburgh and was, much later, to become a leading member of the Statistical Society of London. 3 Manuscript drafts of a few of the parliamentary papers indicate that Tulloch did the basic writing with comments and corrections from Balfour (who undertook much of the tabulation). Marshall was responsible for the overall design of the reports (which was fixed in the first one). 4 Marshall's contribution, therefore,

1. Ibid., p. 172.
2. Tulloch later became a major-general and was responsible for the damning inquiry into the deficiencies of the commissariat in the Crimea.
4. The Tulloch papers are held at the County Record Office, Newport, Monmouthshire. They include papers on the Crimean commission and papers of General Alexander Bruce Tulloch, who served in various colonial conflicts later in the century. The papers were discovered a few years ago and are not well-known. Their overall condition is excellent and they are catalogued.
was crucial and in particular it should be noted that he drew up the classification of diseases used throughout the reports.¹

It was more than two years before the first report was published. This was due to the strange belief on the part of some in authority that publication of the morbidity and mortality rates of the troops in the West Indies would constitute a danger to security in the event of war.² It was not until mid-1838 that publication was authorized and the delay removed something of the interest in the report. As early as June 1836 Marshall and Tulloch had finished their preliminary research on the Windward and Leeward Islands. They had concluded that more fresh meat was required in the army rations which prompted the War Office to recommend an increase.³ However, the Treasury was not fully convinced and some salt rations were retained.⁴

Hence there was still much to argue about in the first report if only to justify the reforms already introduced. It is deceptively mild and uncommitted at first sight (by the standards, that is, of the argumentative parliamentary papers of the time). In his introduction Tulloch stated that it was

"principally confined to such points as can readily be solved by the test of facts and figures. Observations as to treatment, speculations regarding the contagious or non-contagious nature of particular diseases, or any reference to medical theories except where they can be made the subject of

1. Quetelet papers, Tulloch to Quetelet, October 1837.
2. Quetelet papers, Tulloch to Quetelet, 15 January 1838.
3. Barracks (Bahamas, etc.), pp. 58-62; GBPP 1840 XXXIV.
4. Ibid., pp. 74-5.
calculation, would obviously be quite foreign to the purpose of a Statistical Report". 1

The remark puts Tulloch within the framework of the statistical movement with its much professed antipathy to "opinions". Yet within that framework there was a great range of carefulness in the treatment of evidence from Woronzow Greig's idiotic stereotypes of Irish labourers and Nassau Senior's vision of statistics as a truth-demonstrating mechanism through to Farr's brilliant studies. Tulloch and Marshall shared Farr's notion of statistics as "an essential means of acquiring the requisite information upon which to found practical measures for the amelioration of the condition, and for promoting the health". 2 They were also close to Farr's end of the spectrum in their technical competence and intellectual honesty.

Like Farr Tulloch had points to make of a controversial nature but of all the statisticians perhaps Tulloch was the least vehement, the most measured in his writing. It would be difficult to imagine a Chadwick, even a Porter, carefully toning down his drafts so that "the greater proportion" became "a large proportion" and then "frequently". 3 They might have preferred to keep the words and change the statistics. The report itself was divided into six sections. The first was by far the longest and

3. See draft in Tulloch papers, box D150, Monmouthshire C.R.O.
was in four parts dealing respectively with the Windward and Leeward Command, the Jamaica Command, the Bahamas Command, and the Honduras Command (the last two very briefly) with regard to sickness and mortality. Each part began with a description of the topology and climate of the area to provide a background for possible local variations. Tulloch then dealt with the number of troops, their duties, accommodation, and rations. The very high rate of mortality (93½ per thousand per annum for the Windward and Leewards for 1817-36 compared with about 15 per thousand for troops in the United Kingdom) led into a discussion of the various causes of death.

These had been divided by Marshall into seven groups: fevers, diseases of the lungs, diseases of the liver, diseases of the stomach and bowels, diseases of the brain, dropsies, and others. It was not a very adequate nosology. Under "fevers" it was found that in the Windward and Leewards 717 per thousand of the mean strength were admitted to hospital per annum and 36.9 per thousand died. Under "diseases of the stomach and bowels" 421 per thousand were admitted and 20.7 per thousand died. But, of the 20.7, 19.4 came from "acute dysentery", "chronic dysentery", and "diarrhoea". Apart from the problem of deciphering the differences between these categories it must be wondered

2. Ibid., p.7. This included only those deaths occurring under medical treatment and therefore excluded "sudden" deaths and deaths of those invalided out.
3. Ibid., p.9.
whether a sizable number of fever cases were being mislocated. The nosology also included such strange categories as "water in the head", "fatuity", and "madness" (as a cause of death). Also of doubtful value was the distinction between "acute catarrh", "chronic catarrh", "asthma", and "difficulty of breathing". Black troops were treated separately from whites on the theory that different climates suited different races. There were remarkable divergences: the indicated mortality among blacks from "fevers" was only one-eighth that of the whites. Total mortality was about half the level of the whites.¹

This pattern of investigation was followed for the other three commands and for the individual stations in each command. The second section was on invaliding but the available statistics did not allow Tulloch to go very far into the problem.² The third section was an even briefer discussion of the numbers in hospital.³ It was the fourth section which contained the most radical argument of the report. The section was concerned with the influence of age and length of residence on mortality. Returns were available only from 1830 but this was sufficient for Tulloch's needs. He was able to compare the age-specific mortality rates for ages eighteen to twenty-five, twenty-five to thirty-three, thirty-three to forty, and forty to fifty for the Windward and Leeward and Jamaica Commands with the English figures according to

¹. Ibid., pp.12-13.
². Ibid., pp.79–81.
³. Ibid., pp.82–3.
the Carlisle tables. There had been an impression that mortality decreased with age among the troops. Tulloch showed that this was untrue and that mortality increased faster among the troops (except for the forty to fifty year olds in Jamaica, many of whom were invalided out and therefore did not appear in the returns). Tulloch was well pleased by this reversal of orthodoxy by his statistics: "we trust they will be sufficient to displace hypothetical opinions, which have principally originated in the want of accurate statistical information". As Tulloch pointed out, the error had arisen from the preponderance of youthful deaths in absolute terms, a preponderance which vanished once the returns were reconstructed on an age-specific basis.¹ The conclusion resulted in the recommendation that it was best to send out young troops once they were fully trained.²

It was a natural progression to consider the effect of length of service (that is, acclimatization). Though it was not easy to separate out Tulloch showed that in Jamaica, where "of all others the benefit of residence has been most strongly insisted upon", mortality among those resident one year was seventy-seven per thousand, two years eighty-seven per thousand, and over two years ninety-three per thousand. He could not control for the influence of age and while it is not clear whether he understood this problem Tulloch did note that the correlation would have been more marked had it not been

1. Ibid., pp.54-5.
2. Ibid., p.86.
for the inclusion in the new arrivals of a number of old soldiers who quickly died.¹ Other statistics were not so conclusive but did not suggest the opposite and Tulloch felt justified in arguing that length of residence did not reduce mortality except during epidemics when newly arrived troops might suffer excessively.² The results had already gone to Howick who was sufficiently convinced to announce that in future regiments would stay three years in the West Indies and not up to ten or eleven as had been the case.³

The other reform, which we have already noted, was the increased ration of fresh meat. This followed from Tulloch's success in proving his case by the clever expedient of separately analyzing the mortality of officers. Had there been no difference then it would be legitimate to deduce that "no improvement either in the comfort, diet, or accommodation of the soldier, would be likely to effect any material improvement in his health".⁴ But it was not so. Mortality among officers was half as high as among the troops in the Windward and Leeward Command and two-thirds in the Jamaica Command. In the former the officers' susceptibility to diseases of the lungs and stomach and bowels was much lower than the troops generally. The same effect was nothing like so

1. Ibid., pp.88-9.  
2. Ibid., p.95.  
marked in Jamaica, a contradiction which Tulloch turned to his advantage by arguing that it demonstrated that the high rates of the men could not be due to intemperance or night duty.¹ The argument was supported by reference to the high rates for non-commissioned officers who did not perform night duty and were presumably less intemperate.² Tulloch's thesis on the difference between Jamaica and the Windward and Leewards was a little forced but he managed to carry his point. Moreover, he had carried it by an early use of differential mortality rates of a class-based type (using the term loosely though, in retrospect, it applies in a more precise sense as well).

On the basis of the statistics Tulloch felt confident in asserting a number of conclusions. A number of shibboleths could be demolished: high temperature was not very important since the various stations fluctuated widely in their mortality; but little in temperature; nor was excess moisture the villain since no pattern could be discerned (though Tulloch conceded the two combined might have some effect); miasma "wafted" from South America was no more likely than local "exhalations" from the soil. Indeed, apart from very high localities Tulloch could not "point out any practical rule to be followed in the choice of healthy localities for the troops".³

Tulloch had overstated his case against the suspicion of marshes (though that is to criticize with hindsight),

1. Ibid., pp.98-9.
2. Ibid., p.100.
3. Ibid., pp.102-3.
had been a little less than rigorous in his treatment of the mortality of officers, and the nosology bequeathed to him by Marshall was a very inefficient analytical tool.

Yet, in the context of other statistical works, it was a masterpiece, if a masterpiece demonstrating some of the assumptions and attitudes of the statisticians. Apart from Sir Andrew Halliday, obviously eating sour grapes, the reception was very favourable. The Inspector-General of Army Hospitals, William Fergusson, still thought there was an acclimatization effect and placed much more emphasis on the evils of intemperance, but otherwise praised Tulloch.¹ The best praise of all was imitation: a lengthy summary was read to the Statistical Society of London, which also, as we saw in Chapter V, set up a committee to process data from the East Indies along the lines laid down by Tulloch.²

Tulloch continued his work with a report on the health of the troops in the United Kingdom, the Mediterranean, and British North America wherein his skill was further demonstrated. In studying the dragoons in the United Kingdom he found that their mortality was higher than among the civilian population of similar ages.

Tulloch neatly explained this by urban-rural differences since the troops were garrisoned in towns. In the report on the Mediterranean he cast further doubt upon the accepted notions of the causation of fever by examining the lack of relationship between marshy soil or excessive vegetation and the occurrence of fevers. The point was made even more sharply in the report on West Africa where mortality from fevers was very high, especially in Sierra Leone where no less than 410 per thousand of the white troops had died on average per annum. The reports were by now becoming predictable and had little to add. A proposed summary never appeared though a draft was prepared which is to be found in the Tulloch papers. But Tulloch and Balfour also prepared, a few years later, a report on the period 1837-46 for some stations. The returns had been improved and comparisons were made easier by the growth of non-military vital statistics, especially Farr's reports. Thus it was shown that mortality among the troops in the United Kingdom was slightly higher than that for the similar age-group among townsmen but that there was little difference in the occurrence of any group.

1. Statistical Report on ... the Troops in the United Kingdom, pp.5-6; GBPP 1839 XVI.
2. Statistical Report on ... the Troops in the Mediterranean, pp.64a-65a; GBPP 1839 XVI.
3. Statistical Report on ... the Troops on the Western Coast of Africa, pp.9, 26; GBPP 1840 XXX.
4. See the reports on the Cape of Good Hope and Mauritius in the same paper as the West Africa report and the report on Ceylon, Burma, and the Tenasserim Provinces; GBPP 1842 XXVII.
5. Statistical Report on ... the Troops in the United Kingdom, the Mediterranean, and British America; GBPP 1852-3 LIX.
of diseases. Generally, some progress could be observed in improving the health of the troops, but perhaps not as much as Tulloch might have wished.

The army reports had by now been joined by similar reports on the health of the navy which had enabled comparisons to be made. A few months after Tulloch and Marshall began work the question had been raised in the Admiralty and after consultations with the head of the Army Medical Department the navy's Physician-General, Sir William Burnett, recommended the idea. There were difficulties over the estimated cost and in the end it was proposed that one surgeon and one clerk should be employed. The officer initially employed died after a few months and was replaced by John Wilson. He found it necessary to reorganize the inquiry and begin again since the initial plan had made no provision for tracing the sick from the ships to the hospitals (thus greatly reducing the number of cases). It was also felt that the method of computing the strength of the squadrons led to an overestimate of the total population. The combination of the two errors would have given "an exaggerated view of the health of the Navy".

1. Ibid., p.7.
2. E.g. see Tulloch, "Comparison of the Sickness, Mortality and Prevaling Diseases among Seamen and Soldiers, as shown by the Naval and Military Statistical Reports", JSSL, IV, April 1841, pp.1-16 and T. Graham Balfour, "Comparison of the Sickness, Mortality, and prevailing Diseases among Seamen and Soldiers, as shown by the Naval and Military Statistical Reports", JSSL, VIII, March 1845, pp.77-86.
4. Ibid., ff.97-102.
5. Statistical Reports on the Health of the Navy, Pt.I, p.iii; GBPP 1840 XXX.
was yet another Scot who had joined the navy in 1813.1 It was not until 1825 that he graduated in medicine (from Edinburgh with a thesis on dysentery). In 1827 he wrote a book on the causation of fevers in the West Indies which was sceptical of existing theories but was in no way quantitative.2 But one notable feature was a cautiousness and humility of approach shown when he said "it is easier to demolish an old structure than to rear a better one in its stead ... It may be found ... I have only substituted one error for another".3

The caution was evident in the official reports (and any lack of numeracy was, at least in the details, made up for by somebody else doing the arithmetic). Many defective returns were found and if Wilson was not satisfied that the deficiencies could be made up then the particular ship concerned was struck out of the totals for whatever period was necessary. Moreover, though returns of mortality were reasonably accurate, invaliding returns were not and with transferences from ship to ship and ship to shore double-counting must have occurred. It was also difficult to trace all cases on shore while the short service of a ship in any one place created further obstacles in the way of assessing the effects of climate and location. Ages were indeterminate in the returns. In the tables of the sick and hurt no mention was made of rank so that no controls

1. Modern English Biography, Supplement.
3. Ibid., p.123.
could be introduced to compute the differences in diet or other environmental factors.  

Nevertheless, Wilson had felt confident enough in a preliminary report to state that the figures gave "a very gratifying view" of the health of the navy.

The introduction to the first published report was a catalogue of the great improvements which had taken place in the navy: the reduced spirits ration, the use of lemon juice, the better water, improved diets for the sick, the cleansing of the ships, and, most recently, the institution of ships' libraries which marked the passing of the belief that the "debasing, and destructive effects of savage ignorance, is thought essential to the character of a British seaman". Both the moralism and its irrelevance to the statistics shows that Wilson shared some of the features of the civilian statisticians. Moreover, despite his ability and care, he did not realize that few conclusions could be safely drawn from the statistics even on such a simple matter as the overall level of mortality. In the second report he was to note with some surprise that the South American station appeared healthier than the English Channel. The result might have convinced Wilson that the South American figures were meaningless but it did not. He was more concerned by then with proving that the navy was healthier than civilian life since

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1. Reports, Part I, pp.vi-x.
2. F.R.O. Adm.1/3532 (In-letters, 29 January 1839).
3. Reports, Pt.I, pp.x-xx. The libraries were started in August 1838.
4. Statistical Reports on the Health of the Navy for the Years 1830 to 1836, Pt.II, p.iv; GBPP 1841 Sess.2 VI.
he could not think of anything "so well fitted to popularize the service". ¹

The second report was even more of a statement of faith that the "spirit of improvement, everywhere active, will not sleep in the Royal Navy". ² While the figures may not be entirely reliable the great magnitude of the improvement which had occurred cannot be denied: according to Wilson the annual mortality in 1779 was one in eight, in 1811 one in thirty-two, and in 1830-6 one in seventy-two of the establishment. ³ Wilson gave credit to the changes in diet and water but also stressed the value of the attention paid to "the intellectual, religious, and moral improvement of seamen". ⁴ Wilson was a part of the statistical movement.

The resumption of the reports in the late 1840's marks the emergence of a different type of statistician, perhaps narrower in outlook, definitely more competent technically. In 1849 the first of a new series of naval health reports was published under the direction of Alexander Bryson. Bryson was a man of wide experience. Born in 1802 he had studied at Glasgow and Edinburgh, joining the navy in 1827. ⁵ In the late 1840's he distinguished himself by establishing the separate existence of yellow fever and the effectiveness of some prophylactic measures against it, including the use of quinine and the

¹. Ibid.
². Ibid., p.x.
³. Ibid., p.vi.
⁴. Ibid., p.viii.
⁵. DNB.
immediate transference of ships where yellow fever had broken out to colder climes.¹ The first report followed Wilson's plan, though, significantly, without obeisance to the ideology of improvement.² The second report was quite different for Bryson had had time to reorganize. The antiquated Cullen nosology used by Wilson (and rejected by Farr) was dropped and various other technical changes made.³ However, a plan to tabulate the efficacy of methods of treatment had to be abandoned because of the impossibility of controlling the experiment.⁴ The importance of the report lies in the concluding discussion on the causes of disease.⁵ One argument stands out: Bryson rejected swamp miasmata as the cause of dysentery and instead hypothesized the existence in rivers of "infusorial animalcules of a poisonous nature, or ... minute organic germs".⁶ This cautiously revolutionary pattern was repeated in the third report.⁷

With Bryson we are entering a different era of statistical researches which lies outside our scope. But his

2. Statistical Reports of the Health of the Navy for the Years 1837 to 1843, Pt. I; GBPP 1849 XXXII.
3. Statistical Reports of the Health of the Navy for the Years 1837 to 1843, Pt. III; GBPP 1852-3 LXI.
4. Ibid., p.vi.
5. Ibid., pp. 87-94.
6. Ibid., p. 89.
7. Statistical Reports of the Health of the Navy for the Years 1837 to 1843, Pt. III; GBPP 1854 LXVIII.
writings, and those of Wilson, Tulloch, Marshall, and Balfour bulk large in the general corpus of investigations into the diseases of different occupations, a corpus which had been greatly added to during the period under review. It is itself a part of a wider mass of material relating to vital statistics. We shall not be surveying all aspects for the amount of material is too great to be covered in any useful manner with brevity. Moreover, vital statistics in the narrow sense did not change greatly during the 1830's and 1840's except in those areas which are discussed here. This is not to underestimate the value and significance of the work done. To take an example: Charles Ansell's treatise on friendly societies published for the Society for the Diffusion of Useful Knowledge has two points of interest. The first is the emphasis upon the values of self-help. In a classic exposition of the ideals of the "steam intellect society" (to which, let us remember, Drinkwater and Porter belonged) Ansell argued that "frugality and providence give to a man a moral independence, and a happiness of which a mere pauper can scarcely form an idea" while all would gain "from the labouring classes becoming sensible of their true interests". ¹ The second point of interest is the inclusion of graphs of life tables, being an early example of the resurrection of the graphical method. ²

Such valuable minutiae can be indefinitely multiplied.

2. Ibid., opp. p.64.
In the same year as Ansell's book was published a Dublin physician produced a study of midwifery which included statistics of the duration of labour and other factors associated with pregnancy and childbirth.¹ Yet vital statistics generally showed little change until Farr's reports (T.R. Edmonds, a fine vital statistician, significantly did much of his research on Swedish population statistics).² And when civil registration yielded its harvest Farr was the best reaper. Moreover, within the general corpus, certain types of inquiries stand out as of general importance, preeminently the statistics of the environment at home and work.

Thus we return to occupational diseases. Their study had a long history in Europe, dating back to a late fifteenth century treatise on goldsmiths. In the sixteenth century works were written on miners and scholars and in the seventeenth century on sailors, soldiers, salt workers, and lawyers. In 1700 the classic study by Bernardino Ramazzini was published which covered no less than forty-two occupations.³ Ramazzini's book, and its predecessors, were of course non-quantitative but they provide a distinguished ancestry for the men of the 1830's and 1840's.

1. Robert Collins, A Practical Treatise on Midwifery, Containing the Results of Sixteen Thousand Six Hundred and Fifty-four Births Occurring in the Dublin Living-in Hospital (London, 1835).
With the enthusiasm of the age for statistics it is understandable that they should apply their techniques to occupational diseases.

One book may be picked out as a trend-setter: Charles Turner Thackrah's *The Effects of Arts, Trades, and Professions, and of Civic States and of Habits of Living, on Health and Longevity.* Thackrah was a Leeds physician who had helped in the foundation of the Philosophical and Literary Society and the Leeds Medical School. His book proved popular: the first edition was quickly sold and a separate American edition was prepared. Sadler referred to it in the parliamentary debates on his factory bill and we might also note that it was brought to Charles Babbage's attention. It was not a statistical work but it served to provoke interest in the question even if its generally anti-factory tone may have offended some readers. As Thackrah died in 1833 it was left to others to carry on.

Preeminent among Thackrah's successors was William Augustus Guy. Guy's work was so important, perhaps equal to everything else done by individuals in our period, that it would be as well to deal with some of the lesser figures first. Their total production was less than might be anticipated. The authority on the history of miners' diseases states that between Thackrah's second edition of

1832 and the official inquiry of 1842 only seven papers were published on that particularly vital topic. He further argues that serious statistical work did not begin until the 1850's and 1860's. The interpretation seems justifiable for even if the 1842 government report is looked at we find a very limited amount of statistical information. In a survey of the mining districts of South Staffordshire, Shropshire, and Worcestershire Dr. James Mitchell remarked upon the high mortality rates of children under three and from deaths by violence. Particularly arousing concern was the mortality from accidents. In the 1843 report on the Midlands it was stated that about half the miners to be found in the registration books died from accidental causes. But in general the statistics were non-existent and it is noteworthy that the sensational 1842 report on women and children in the mines depended for its impact not on massed statistics but on horrifying woodcuts of much more universal appeal.

One crucial bar was the type of information available since even the Registrar-General's published reports were divided by area not occupation. This meant that research was directed towards special groups whose profiles were ascertainable because of association with some institution or other. Thus, if we stretch the definition of

"occupation", there were a few studies of the statistics of the insane. Colonel Sykes, for example, used the records of the London lunacy commissioners to write a rather dull article the sole noteworthy observation of which was the excessive mortality rate of pauper lunatics.\(^1\) His material was taken over and supplemented by Farr from the records of Hanwell and Bethlem to produce a more solid paper which asked whether this high mortality was due to disease or the treatment received. Farr was unable to provide an answer and therefore suggested an official inquiry.\(^2\) Other investigations based on institutional records were John Thurnam's attempted refutation of the common notion that insanity was more frequent among women than men and an ambitious paper by Samuel Hare on the retreat in Leeds.\(^3\) It is not a particularly impressive list (though it could be added to with similar items). It is perhaps unfortunate that the standard study of insanity in nineteenth century Britain does not go further into the availability of sources.\(^4\)

One excellent quantitative work of a similar type to these was William Baly's on the mortality in prisons.\(^5\)

Baly was physician to the Millbank Prison and was later to be co-author of the equally excellent report on cholera authorized by the Royal College of Physicians.\(^1\) Baly’s starting point was the high mortality in prisons — twice that for the same age-group in the population at large.\(^2\) His main problem was to demonstrate that this high mortality was not simply a reflection of the class from which most prisoners came. We cannot discuss his work at great length but one section may be singled out as of particular merit. Baly managed to correlate mortality with length of imprisonment and to show a marked increase which made it unlikely that extraneous social factors were the culprits.\(^3\) He then demonstrated that three-quarters of the "excess" mortality was due to "tubercular" diseases.\(^4\)

At the other end of the spectrum of working class life from the prisons were the provident institutions which could also be used to study vital statistics. The man who was to emerge in the 1840’s as the leading figure here was F.G.P. Neison. His first paper utilizing the experience of provident institutions was a mammoth affair.\(^5\) He had obtained his English statistics from the Registrar of Friendly Societies but for Scotland other methods had proved necessary. In 1840 Neison sent blank schedules to

2. Prisons, pp. 4-10.
3. Ibid., pp. 28-43, 75.
4. Ibid., p. 86.
every Scottish minister with a request that they would use their influence. The results were poor and in 1643 he tried again, offering prizes for the best returns as an incentive. This time he obtained many excellent returns.¹ Neison was unable to produce much direct evidence of the effects of occupations but a great deal of his paper was directed towards eliminating, in part or in toto, the other suggested influences on high mortality. He attempted to demonstrate that the members of friendly or provident societies had a considerably better mortality record than the general population, an advantage not explained by selective entry since they were also superior to the experience of insurance companies who were clearly more selective.² Neison argued that the members of friendly societies lived in the poorest areas (this may be doubted) and that their better health, even in such a place as Liverpool, implied that it was not sufficient to point to "the peculiar sanitary condition of large towns". Other factors, "such as the poverty and distress" of the mass of the working classes, had also to be taken into account.³ Neison greatly deplored the enthusiasm of Chadwick and some of the public health agitators and had been involved in a debate with Chadwick in which the latter was worsted.⁴ Despite the defects of the paper Neison's professionalism was apparent and gave weight to

¹. Ibid., p.297.
². Ibid., pp.297-314.
³. Ibid., p.316.
⁴. See below, Chapter X.
a conclusion which came close to heresy for a member of the Statistical Society of London:

"The evils, so far as relates to health, represented to exist by some writers to so frightful an extent, and to connect themselves with inferior sewage, filthy streets, and ill-planned houses, are certainly over-stated by them. The data brought forward have generally been of the most indefinite and insufficient nature; and when, in connection with this, the erroneous methods employed, and the promiscuous manner in which their figures are generally combined, are kept in view, it must seem surprising that the thinking and intelligent portion of the community should have given their opinions any credence, or believe their conclusions entitled to so much weight."

For Neison some of the real causes were to be found in conditions associated with occupations - such as the sedentary and unhealthy work of the clerk. It was not that he was opposed to the sanitary improvement of towns but that it should be done for the sake of the "comforts, conveniences, and elevation of taste and moral purity, thence arising". Neison's views deserve space for they were contrary to those of the statistical movement as a whole. No doubt he also overstated his case but his criticisms of Chadwick, in particular, were well-directed. Nevertheless, it must also be noted that he was closely associated with William Augustus Guy who was a prominent member of the Health of Towns Association.

Guy may not have agreed entirely with Neison but he, above all, showed the influence of factors other than cess-pools and urban filth on mortality rates. Like

1. Ibid., p.342.
2. Ibid., p.343.
Neison he was a man of the 1840's whose views had not been set in the mould of the 1830's. Like Neison, too, his abilities as a statistician were of a high order (though Neison performed some of the more technical actuarial tasks for him). Furthermore, Guy may be considered as one of the main theorists of social statistics in the period on the basis of a paper he read to the Statistical Society of London in 1839.¹ For Guy the way to truth lay through abstract reasoning based upon measurement and observation. Large numbers of observations were necessary to eliminate measurement errors while the observations had to be based upon correct classifications. Guy saw that "the certainty of a science is exactly proportioned to the extent to which it admits of the application of numbers". Hence arose the science of statistics where "Man, considered as a social being, is its object". For medical men it entailed "the discovery of general laws" and "the best means of preserving the health and prolonging the life of communities". Guy conceded there were severe limitations in the applicability of statistics to individual cases but his preemptive defence of the recurring criticisms of the statistical method in the social sciences remains unanswerable:

"The ordinary observer, no less than the statistician, may make an unwise choice of a subject of investigation, and devote himself to some childish puerility; and when he has chosen a subject, he may observe

¹ W.A. Guy, "On the Value of the Numerical Method as applied to Science, but especially to Physiology and Medicine", JSSL, II, February 1839, pp. 25-47.
without care, and experiment without a plan; he may group together dissimilar facts, deduce from them wrong principles, and make absurd applications of his general laws to individual instances; but his errors will be the same, whatever may be the mode of expression which he adopts; the only difference will be, that error will contrast more strongly with the strict expression of the numerical method, than with the loose and ill-defined phrases of common observation.  

It was a superbly universal attack upon innumerate reactionaries. Yet we must not miss the special tones of the period - the emphasis upon the possibility of general laws as well as the desire to use statistics as a means to the end of social reform.

Guy's own practical exercises in statistics were based upon his work at the King's College Hospital. In 1843 he gave a not very impressive paper on the correlation of the seasons and weather with sickness and mortality. This was soon followed by Guy's first paper on the influence of employments on health. Guy dealt in that paper with the incidence of pulmonary consumption. By comparing the proportion of patients with pulmonary consumption to the total number of patients in different occupations he came to the conclusion that sedentary work was the worst, outdoor work the best for that particular

1. Ibid., p.44.
3. Guy, "Contributions to a Knowledge of the Influence of Employments upon Health", JSSIL, VI, August 1843, pp.197-211. Guy may have been drawn to the subject by G.C. Holland's Vital Statistics of Sheffield which had a considerable section on occupational diseases.
4. No attempt is made throughout this work to translate early Victorian nosologies.
ailment. It also seemed that exercise was beneficial (from a comparison of two different branches of the printing trade), a constrained posture had little effect (from a comparison of tailors and clerks), and the inhalation of dust very bad (from a study of modellers, masons, and sawyers).

It was the first paper in a long series. The second was very much an off-shoot of the first in that it took further the problem of indoor versus outdoor employments. Guy's test was the rather dubious one of taking the excess of young persons in a trade as proof of its unhealthiness. He was aware of the objection that some occupations might be thought to require such an excess but countered with the argument that this was only true where there was an extensive use of machinery. Nevertheless, he put forward his paper as a partial piece requiring confirmation from other sources. With these reservations the same conclusion was reached about the unhealthiness of sedentary occupations though they were favourable to a few even if they were unfavourable to the great majority. Guy was also able to use civil registration statistics for London for 1839 sent to him by Chadwick. Guy felt that the cause of death data was only marginally useful. There were also defects in the lists of occupations but they were not as serious. Once again, therefore, Guy warned that "strict

numerical results" could not be expected but only "probabilities in support of others derived from independent sources". However, the civil registration records pointed in the same direction as the hospital records. Guy further showed that there was a "great and undue advantage" in the healthiness of the upper classes compared with the rest of society. But as in the first paper Guy modified this by stressing the evil effects of habits of intemperance. Hence his work was evolving into a neat balance (or confusing mixture depending on one's opinion) of an environmental and a moral view of the failings of British society. Between the "bad air which the in-door labourer is constrained to breathe", "the inclemencies of the weather to which the out-door labourer is exposed", "the unhealthy habitations which both classes are compelled to live in", and "the bad habits in which both indulge" Guy could not choose as to relative importance. Once again the vision of the virtuous proletarian as the node of a sewage network is conjured up.

The theme recurred in Guy's third paper where he examined the 1839 registration statistics on deaths from pulmonary consumption. He repeated that it was impossible to weigh "causes over which the poor have virtually no control" with "their own habits of life". If anything there was a slight shift away from a moral emphasis with

Guy stressing that "all causes of exhaustion are indirectly causes of intemperance". Consequently, the "improvement" of the moral habits of the working classes was dependent upon the "improvement" of their dwellings and workshops. Guy committed himself to the rather rash prediction that if "those evils were once corrected over which the labouring class have no control, they would not be slow to perfect the work of a wise and far-seeing legislation". Guy echoed Neison in arguing that the sanitary idea applied to housing was not enough when so much mortality could be attributed to the state of the workshops and long hours of work.¹

Guy was soon to show his distinctly middle-class bias and to elaborate further upon the theme of the virtuous artisan. His articles had suffered from the want of a standard by which to judge what mortality ought to be. The standard had to be as favourable as possible so that Guy chose to study the titular aristocracy first.² Neison drew up a life table from data Guy had culled from Sharpe and Debrett which was compared with that in Farr’s fifth report and other life tables. It was found that the experience of the sample was less favourable than that of the population at large though better than that of urban populations. Guy decided that the life expectancy of

1. It is perhaps necessary to add that Guy was thinking in the context of the small workshop system of London, not the factory system.
male aristocrats born from the middle of the sixteenth century to the end of the seventeenth had decreased, after which it increased again. The change had marked the decline of the habits of the upper classes to "extreme intemperance" with a subsequent improvement. Furthermore, the heirs to titles (the basis of the sample) possessed an "unlimited command of the means of dangerous self-indulgence" as well as an "absence of the common motives of self-exertion". Hence the independent labouring man probably had a higher life expectancy.

Guy returned to the pleasures of attacking aristocratic dissipation in an article on the gentry. Unlike more recent myths, these did not appear as the virtuous strivers in conflict with those just above them in the social scale. Instead they were lesser followers of the same reprehensible life-style, saved from its worst effects only by lack of means. As before, Guy found a marked diminution in life expectancy of cohorts born from the mid-sixteenth to the end of the seventeenth century because of "intemperance and self-indulgence". Because of their "idleness" and "dissipation" the aristocracy and gentry had a considerably lower life expectancy than the members of agricultural friendly societies. Guy had so far

forgotten his earlier environmental theories about pure air and sanitation that his middle class condemnation of the landed classes led him to pick out "temperance, mental occupation, and bodily exercise" as the three main elements of health. The balance was becoming unhinged and it was not restored in yet another paper, this time on the professions,¹ or in a paper on the life-spans of sovereigns.²

This was not the end of Guy's research on occupational and social health - in 1848 he gave a rather strange paper on nightmen, scavengers, and dustmen³ - but enough has been said to show the drift of his arguments. Whether he had intended it or not a project which had begun with an emphasis upon the unhealthiness of many occupations as well as the houses of the working classes had begun to convey the impression that the major responsibility for good in Britain in the 1840's lay with the individual. It would be wrong to press Guy's views in these later articles too far for they must be judged within the context of an attack upon the leisured and wealthy by an assertion of middle class virtues which would improve all. It must also be seen in the context of Guy's active propaganda for the Health of Towns Association. As a representative of the social attitudes of the statisticians

his earlier views with their tension between environment and the individual are more significant.

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Since he was writing in a London context Guy never had to face the issue of the harmful or beneficial effects of the factory system. This was dealt with elsewhere, but seldom in a quantitative fashion even by a man like Leonard Horner (who was once described as "a statistical person" by Henry Ashworth of the Manchester Statistical Society).¹ This is not to say that there are not a lot of factory statistics. There are many pages of tables on the numbers employed in some mills, their ages, even the numbers supposedly benefiting from education clauses in factory acts. These are obvious outgrowths of administrative need and reformist pressure. Beyond such mere cumulations, often meaningless since there is no frame of reference, the statistics are sparser than might be assumed.

One of the few serious attempts to study the factories quantitatively was made, ironically, for purposes outside the statistical mainstream, indeed for ideological ends quite opposed to it. Michael Thomas Sadler's 1832 select committee on factories was, as we saw earlier, anathema to some of the men who founded the London and the provincial societies. Yet it was Sadler who, for all the

¹ Education of the Poorer Classes in England and Wales, Sel.Ctte. Mins. of Ev., p.65; GBPP 1837-8 VII.
rigging and bias in his committee, tried to show by figures as well as opinions that factories had an injurious effect on the health of the operatives. The analytical tool used was crude: the number of burials by age from the official reports on the burial registers for the period 1813-30. By comparing different areas it seemed that as many died by the age of twenty in factory districts as died by the age of fifty elsewhere.

Sadler's committee aroused the ire of the intellectual establishment which was to dominate the statistical societies, the parliamentary commissions, and key areas of the civil service. The 1833 Royal Commission followed. In its membership it was in general a model of orthodoxy and it is not surprising that the official report does not attack the factory system per se but reserves its strictures for individual mills while voicing praise for the larger more humanitarian millowners, such as Marshall's of Leeds, as the desirable model for all Britain. Sadler's attack had been upon the system and the system was now vindicated. Not only that but the "pernicious notion of the propriety and necessity of legislative interference to restrict the hours of adult labour" was dismissed and its advocates labelled as professional agitators. In this context the exception made for children should not have its significance over-emphasized. With such a clear

2. Employment of Children in Factories. R.Comm. First Rep.; GBPP 1833 XX.
3. Ibid., pp.47-50.
ideological commitment it is not entirely surprising that the commission did not spawn a multitude of research projects.

Some research was undertaken for the 1833 commission by the medical commissioners. The summary report presented a glowing picture which picked out the most favourable comments of the three assistant commissioners.¹ This was not really possible with Bisset Hawkins who had found little good to say. Therefore his summary was contrasted with the comments of the non-medical commissioners on the better factories.² It was Bisset Hawkins's report which so offended the Gregs and the Manchester Statistical Society. But it was Bisset Hawkins who came closest to the modern idea of a controlled experiment by examining 700 children at a Manchester Sunday school, half of whom were factory children and half of whom were not. There was a clear advantage in health in favour of the non-factory children, a result confirmed by a second, smaller experiment.³

Hawkins's research was largely ignored insofar as it was not refuted. The bulk of the statistical work of the commission was published in 1834 and was produced by Dr. James Mitchell, a London actuary. There was a large amount of statistics on wages of doubtful utility since no indication was given of actual earnings.⁴ Similarly of little

2. Ibid., pp. 6-14.
3. Ibid., pp. 1-2.
value were returns on the literacy of operatives of unknown reliability. Also included were health returns of marginal relevance since they referred to the East India Company, Christ's Hospital, and the navy dockyards. No serious correlation was made between these and the factory returns but Mitchell concluded that there was no evidence to prove that factory labour was more or less healthy than other forms of labour. In fact the whole of the supplementary report was crammed with ill-digested information. The second part was even worse since it consisted of nothing more than nearly nine hundred replies by manufacturers to questionnaires.

The reason was that the statisticians were, almost to a man, opposed to the factory agitation and sought their explanations of and remedies for Britain's ills elsewhere. We have already noted in Chapter IV Drinkwater's involvement in a heated debate with M.T. Sadler. Drinkwater had managed to satisfy himself that there were practically no statistical documents capable of demonstrating the injurious effects of factory labour. For the statisticians of the mainstream the factory question was to all intents and purposes a non-subject - no papers were given to the Statistical Society of London on it, the only paper to the Manchester society was a justification.

1. Ibid., pp.42-3.
2. Ibid., pp.47-58.
3. Ibid., p.61.
5. Employment of Children in Factories. First Rep.C.1, p.159, GBPP 1833 XX.
surveys of the condition of the working classes (like the censuses of 1841 and 1851) significantly excluded any distinction between factory and non-factory labour. The 1833 commission had been an unwanted exercise, necessitated by Sadler's earlier efforts. From that date until the end of our period there was no other full-scale government inquiry into the factories. The addition of further information was dependent upon the reports of the factory inspectors and incidental evidence in the entirely non-statistical report of the 1840 Select Committee on the Operation of the Factory Acts. It would be reasonable to deduce that within the definition of statistics accepted by the societies the direct impact of industrialization was not a topic that came within the bounds of the "actual state and condition of society" which should be studied in order to be improved. It was, as Joseph Fletcher put it, to the lower classes' "disorderly habits and the bad circumstances of the town" that the statisticians directed their attention.

1. The Royal Commission on the Employment of Women and Children of 1842-3 was not concerned with the factory system per se and, as noted above, made little use of statistical techniques.
2. See Factories, Sel.Cttee. Reps.; GBPP 1840 X.
3. Health of Towns, Sel.Cttee. Mins. of Ev., p.73; GBPP 1840 XI.
Chapter X.

The Physical Environment.

It quickly became a truism of the generation of social investigators after the Reform Bill that the sanitary state of towns was abysmal. The man whom we all associate with the movement to reveal those conditions to the political nation by means of statistically based inquiries is Edwin Chadwick. But Chadwick's achievements should not be exaggerated. Indeed it could be argued that without him the public health movement would have made greater progress since his abrasiveness, egotism, and lack of tact caused him to alienate powerful allies (such as William Farr). Chadwick, like the other sanitary inquirers, was concerned to convert public opinion so that reforms could be carried through. Within that broad front there was disagreement and it was here that Chadwick's essentially sectarian approach must be considered less than useful. Yet he will remain forever associated with the public health movement because of his responsibility for producing one of the three great official inquiries into the cess-pool that was British urban life in the early Victorian era. Those three - the Select Committee on the Health of Towns of 1840, Chadwick's Sanitary Report of 1842, and the 1844 Royal Commission on the State of Large Towns - dominate the quantitative and qualitative work of the period except for Farr's lonely efforts at the Registrar-General's Office.
In addition to these three, and crucial to their genesis, were the reports of the statistical societies on the condition of the working classes and the reports by Southwood Smith, Neil Arnott, and J.P. Kay on fever and sickness among the London poor. As we saw in Chapter II the idea had occurred to Chadwick soon after the passing of the 1836 Registration Act to institute some sort of survey of fever, the precise nature of which remains obscure. Chadwick was rejected by Farr and the matter was dropped for a while. The continuation of severe epidemics in London throughout 1837 and early 1838 caused Chadwick to reactivate his plans since the prevalence of fever was having an effect on the volume of claims made on the poor law authorities. Consequently, Chadwick informed Lord John Russell in a letter of May 1838 that questions were being asked of the poor law medical officers in London while his three medical experts undertook local surveys.¹

Arnott and Kay were instructed to report on the causes of fever which could be removed by sanitary measures. Inevitably their conclusions were determined by the miasma etiology of fever which was to become an obsession at Somerset House. The removable agency was "putrefactive decomposition", a piece of wisdom which "until lately ... has been little understood even among people more advanced".² The advantage of the erroneous miasma theory was that remedies for "putrefactive decomposition" were necessary

1. Fourth Annual Report of the Poor Law Commission, Appendix (A), No.1, p.63; GBPP 1837-8 XXVIII.
2. Ibid., p.68.
public health measures by any medical theory: proper sewage disposal, a pure water-supply, rubbish collection, ventilation, the isolation of such nuisances as slaughter-houses, and the prevention of over-crowding in poor lodging-houses.¹

The beneficial confusion over miasma was repeated in Southwood Smith's report on the causes of sickness and mortality amongst the poor. Moreover, Southwood Smith was responsible for a statement about the nature of social problems which was not necessarily original but which was to be vital to the Chadwickian approach to public health. He stressed that some of the excess mortality and sickness was due to the "improvidence" of the poor which could only be altered by bringing them "under the influence of the inducements to forethought and prudence". But more significant than the moral failings of the poor were factors "which can be avoided by no prudence, and removed by no exertion, on the part of the poor". These were the lack of sanitary facilities.² The time was ripe for the marshalling of a broader volume of evidence to back the emerging public health movement. But it was not until after the fifth annual report of the Poor Law Commission (which included a more quantitative report by Southwood Smith) that Bishop Blomfield moved in the Lords for a full inquiry into the sanitary condition of the labouring

1. Ibid., pp.68-9.
population. The Poor Law Commission was given the authority. Chadwick was placed in charge, which made up for his increasing lack of influence in the normal affairs of the Poor Law Commission.²

Before Chadwick’s report was ready he had been upstaged by Robert Aglionby Slaney. Slaney wanted to see more results than were coming forth from Chadwick and therefore obtained the appointment of a Commons select committee on the health of towns.³ The proceedings of the committee were modelled very much on Slaney’s 1838 committee on the education of the working classes. Its inquiries were not to break new ground. The purpose of the committee was to read into the parliamentary record the opinions and even sections of the writings of carefully selected experts. It thus became a national gathering of some of the provincial statisticians plus the Somerset House doctors. The pattern was established immediately with Southwood Smith as the first witness assenting to the truth of passages from his own reports:

Slaney - “In the second paragraph, after adverting to the want of forethought and prudence, you state, ‘There are evils of another class, more general and powerful in their operation, which can be avoided by no prudence, and removed by no exertion on the part of the poor. Among the gravest, and at the same time most remediable of these latter evils, is the exposure of certain noxious agents generated and accumulated in the localities in which the poor are

1. M.W. Flinn, introduction to Chadwick, Sanitary Report, p.45. The introduction will hereafter be cited as “Flinn”, the report as “Chadwick”.
2. For Chadwick’s tenuous position at this time see S.E. Finer, The Life and Times of Sir Edwin Chadwick, pp.154-207.
3. Flinn, p.45.
obliged to take up their abode, and to the pernicious influence of which they are constantly and for the most part unconsciously subjected; that is your opinion?"

Southwood Smith - "It is".1

This charade continued throughout most of Southwood Smith's evidence and that of the other witnesses. By these means the most telling sections of Smith's reports were read into the record. Neil Arnott was treated in a similar fashion. The work of the statistical societies was also used to some extent. Jelinger C. Symons, one of the assistant hand-loom weavers commissioners, had been greatly influenced by Robert Cowan's work on the vital statistics of Glasgow and gave evidence as to the state of public health in that city.2 Charles Richard Weld, for some time the paid assistant-secretary of the Statistical Society of London, explained the results of the inquiries he had carried out in London.3 Also present was Joseph Fletcher, though more in his official capacity as secretary to the hand-loom weavers commission.4

Perhaps the star witnesses for the statistical movement were James Williamson, Richard Cobden, and J.R. Wood. Williamson attested to the substantial accuracy of the report of the Leeds Town Council Statistical Committee written by Robert Baker. The questioning deftly moved from the exposition of sanitary failure as embodied in

2. Ibid., pp.60-7.
4. Ibid., pp.69-76.
that report to the provision of remedies in the form of paving, drainage, and improved cottages as well as local boards of health. The last mentioned would institute statistical surveys so that in

"a few years many most interesting facts relative to the influence on health of certain locations, employments, and social circumstances would be established, and many practical inferences of direct application formed". ¹

Cobden described the achievements of the Manchester Statistical Society (of which he was a member). He testified to the accuracy of some of the data in the 1837 report on the condition of the working classes, especially the figures on the number of cellar-dwellings in Liverpool.² Wood had a deeper knowledge of the surveys as the society's agent and was able to build up a suitably horrifying picture of the physical environment of the poor.³ Other witnesses associated with the statistical movement were Edmund Ashworth, Thomas Ashton, and W.H. Duncan (of Liverpool).

The committee was as biassed as any of the time and its mode of procedure had a certain superficiality. Yet it should not be dismissed as Chadwick tried to do.⁴ Chadwick hated anybody claiming credit for ideas he had taken up. His propaganda against the committee's recommendations went so far that he was ordered to stop work on his inquiries and was only reprieved by the change of

1. Ibid., p.117.
2. Ibid., pp.106-8.
3. Ibid., pp.128-41.
4. See Flinn, pp.45-6 for Chadwick's reaction.
government in 1841. Chadwick's antipathy was intensified by the fact that between 1839 and 1841 he had become converted to the belief that the solution lay in external drainage and sanitation rather than in the improvement of the actual houses themselves. Once Chadwick was committed to a theory any hint of heresy could only be met by at least verbal consignment to the stake. Slaney's report was heretical in that it recommended worship of the false god which Chadwick had so recently renounced—a general building act to regulate the quality of dwellings erected for the working classes. Chadwick may have been piqued by the fact that the committee preempted his notion of a general sewerage act including boards of health, commissioners, and inspectors. The committee also proposed a general improvement act to obviate the necessity for separate local improvement acts.

It is apparent that Chadwick should not be given credit for ideas which had been expressed elsewhere at an earlier date. Nevertheless, his single-minded adherence to the sanitary idea in the years 1839 to 1842 resulted in the production of a piece of propaganda of the first importance. The report was not only largely his own work but was issued over his name since one of the Poor Law Commissioners did not wish to take responsibility for it.
It is a masterpiece of persuasion, subtly blending fact and fiction. The whole thrust of the argument was designed to prove that national salvation lay through water-fed sewers sweeping away the miasma, accompanied by rubbish collection, pure water, and centrally supervised district medical officers. That the complexities of public health could be reduced to such simplicities of cure immediately arouses suspicion.

These doubts are not allayed by a closer examination of the report. It is vast but repetitive. It begins with a section on the general condition of the residences of the poor which is no more than a string of quotations from the local reports most congenial to Chadwick. This was followed by a long section on the state of drainage and the water-supply and other "external" arrangements which forms a key part of the analysis. Again there was a heavy reliance upon quotations which supported the miasma theory that Chadwick was determined to prove. By the theory disease was a result of decaying organic matter. Disease could thus be removed by removing the organic matter. Quote is piled upon quote to prop up this thesis which had reached its absurd but logical extreme a few years earlier when one writer claimed instances of graves being opened whereupon men "dropped down and expired upon the spot". Perhaps it was the growing sense of unease

2. Ibid., pp.80-99.
3. Ibid., pp.99-166.
at such idiocies that caused the miasmatists to be so virulent in the 1840's.

Even so, Chadwick's particularly gross selectivity in the use of evidence should not pass unnoticed. This is most clearly demonstrated in the treatment of the great Edinburgh expert in social medicine, W.P. Alison. In Chadwick's report Alison is mentioned twice. The first is when Chadwick is referring to a report by Neil Arnott in which Alison is noticed in passing as accompanying them on a tour of inspection.\(^1\) Alison appears again when a paper of his is very briefly cited to show that population increases in parts of Glasgow had not been matched by the growth in housing.\(^2\) For the leading Scottish expert on the topic this was derisory. Alison's sin was that he refused to accept Chadwick's over-simplifications. Alison had published a major study of the problem of poverty in 1840 as part of a campaign to get the Scottish poor law reconstructed. In it he had argued that poverty and destitution were the primary sources of disease and that intemperance was relatively insignificant since those most afflicted were children while the poor drank less than the rich. Drunkenness was a result rather than a cause of poverty.\(^3\) In the local reports in 1842 Alison explicitly criticized the miasma theories of the Chadwickians.

1. Chadwick, p.97.
2. Ibid., p.189.
Alison saw that cleanliness was desirable and necessary but not sufficient and would need to be accompanied by a general improvement in the standard of living of the lower classes.¹ To reduce the impact of this heresy Chadwick straddled it with two articles by Arnott pushing the miasma line and denying Alison's conclusions.² Furthermore, Chadwick ignored Alison's report in the summary.³ Examples of this sort begin to make the 1842 report look more like the infamously biassed 1834 poor law report.

The former may also be compared with the poor law report in that large sections which we might expect to be quantitative are non-quantitative. In view of the amount of statistics in the 1842 report that may seem a startling assertion. But it is justifiable in the sense that the first two sections relied for their proofs of the miasma theory on qualitative or pseudo-quantitative statements:

"The greater number of cases of fever in June is in a great degree to be accounted for from the extremely filthy state of those places where it has been worst"⁴

or

"it is equally certain that both health and life are frequently sacrificed by the constant damps and unwholesome smell"⁵

There is some statistical material in the third section on "internal economy and domestic habits".⁶ But the standard

1. Local Reports ... Scotland, pp.13-32.
2. Ibid., pp.1-12, 34-9.
3. Arnott was taken as the authority for conditions in Edinburgh. It might also be mentioned that there was only one direct reference to William Farr (Chadwick, p.231).
5. Ibid., p.115.
was not very high, even for the time. For example, in one table all deaths from lung diseases among milliners and dressmakers were put down to "ignorance of the want of ventilation".\(^1\) However, the section on occupational diseases is perhaps one of the best, though still vitiated by Chadwick's dogmatism. In one passage which might stand as representative of the whole report Chadwick makes a plea for an understanding of the complexities of environmental influences which he immediately reduces to an unsurpassed crudity of simplification:

"On comparing the actual condition of workmen with the medical description of these diseases, and the causes, we commonly found that the results of a cluster of causes are commonly ascribed to one; and in respect to several classes of workmen the real cause, the invariable antecedent, such as defective ventilation, is unnoticed."\(^2\)

Rapidly the "cluster of causes" is overwhelmed by the noxious influence of miasma.

The third section was basically another set of impressionistic assertions carefully selected from the local reports and connected by Chadwick's commentary. It was in the fourth section, on "the comparative chances of life in different sections of the community", that the bulk of the statistical analysis appeared. Chadwick obtained returns of the ages at death from those superintendant-registrars who were also clerks of poor law unions and therefore his to command. The deceased were divided into the conventional three social classes of the time - gentry

1. Ibid., p.176.
2. Ibid., p.184.
and persons engaged in professions and their families, "persons engaged in trade, or similarly circumstanced" and their families, and "labourers, artisans, and others similarly circumstanced" and their families. Errors were possible since the registration books did not distinguish between masters and journeymen. Chadwick felt that where mistakes had been made the effect would be to increase the apparent duration of life of the labouring classes. One of the local reports had been considerably more sceptical about the data but that scepticism did not find its way into the main report. This is not surprising for the statistics satisfactorily indicated large differences in the average age at death of the three classes. In Truro the average ages at death were respectively forty, thirty-three, and twenty-eight; at Derby forty-nine, thirty-eight, and twenty-one. At Leeds the figures were forty-four, twenty-seven, and nineteen; at Liverpool thirty-five, twenty-two, and fifteen.

It was impressive evidence but not as conclusive as Chadwick tried to make out. His own tables showed the enormous infant mortality among the lower classes. If we exclude deaths under twenty then the average ages at death in the nine areas in his summary tables were sixty-five,

1. Ibid., pp.219-20.
2. See Dr. William Baker on Derby, Local Reports ... England and Wales, p.181.
3. Chadwick, p.220.
4. Ibid., pp.224-5.
fifty-five, and fifty-one in the three classes.¹ The gentry and professions retain their clear advantage but the differential between the two other classes is decreased. Perhaps the working classes' chances were inflated by inclusion of some of the middle classes (though that assumes Chadwick's hypothesis to be true) but against this must be set the fact that social mobility favoured longevity in the middle classes. Upwardly mobile members of the working classes who died young figure in the third group whereas if they died at an advanced age they would figure in the second. Perhaps more important was the differing age-structures of the two groups. If, as seems likely, the working classes had been reproducing faster than the middle classes then that fact alone would cause them to have as a whole a lower average age at death even if life expectancies were the same. This trend would be accentuated by large-scale immigration of young adults from Ireland and the countryside since Manchester, Leeds, Liverpool, and two London poor law unions accounted for some seventy-two per cent of the sample. Given these constraints on the interpretation of the figures Chadwick might well have concluded that there was no significant difference between the life-expectancies of the middle and lower classes in adulthood.

¹. Calculated from the tables at pp. 228-30. The figures somewhat approximate because Chadwick's figures for the proportions occurring at each decennial interval of ages above twenty are loosely expressed as "1 in 15", "1 in 17", and so on.
But Chadwick preferred to use indices which dramatized the issue. He presented more figures in the fourth section to refute Malthusianism by showing that high birth and death rates were associated in poor areas.¹ This was an argument taken from Farr’s fourth report but not acknowledged.² Further statistics were produced in the next two sections to illustrate the cost of excessive sickness and mortality but they were seldom more than summaries from isolated pieces elsewhere. One table tried to differentiate between the ages at death of miners and non-miners in the same area. It is unfortunately of no value since the percentage of deaths for the non-miners adds up to 154 per cent even though no figures were included for two of the eight divisions of ages.³ Elsewhere the drop in naval mortality over the previous fifty years was used to show that mortality could be reduced (hence, by implication, the very different conclusion that it could be reduced by Chadwickian methods).⁴ All this suggests that Chadwick was a considerably inferior statistician to many of his contemporaries.

His fault was his determination to prove a preconceived theory, marked even for his period. As he explained to the Statistical Society of London, he used the index of the average age at death rather than the crude death rate since the latter would "cause the extent of the evils which depress the sanatory condition of the population, and the

¹. Ibid., pp.241-54.
². Flinn, p.66.
³. See Chadwick, p.265.
mortality consequent on those evils to be under-estimated.¹ Chadwick had discovered the stationary population fallacy — that is the fallacy of assuming that crude death rates can be immediately translated into life expectancies.²

There was nothing new in this discovery but one would not think so from Chadwick’s paper which was another exercise in intellectual self-glorification. He suggested instead the use of his favourite index, the average age at death. This was a relatively constant measure, he thought, little affected by migration. He also poured scorn on those misguided souls who, for example, had ascribed fever on board ships to infection from a sailor who had recently been in a gaol where an epidemic had occurred.³ Chadwick’s microscope had miasma painted on the end of it.

Chadwick’s dogmatism could equally be seen in the passage where he stated that the general effect of migration would be to raise the average age at death.⁴ This was untrue since migrants were overwhelmingly young adults who not only soon produced children whose deaths greatly lowered the average age at death, but left behind a population biassed towards the elderly, thus raising the average age at death in the migrant supplying areas. The net

1. Edwin Chadwick, "On the best Modes of representing accurately, by Statistical Returns, the Duration of Life, and the Pressure and Progress of the Causes of Mortality amongst different Classes of the Community, and amongst the Populations of different Districts and Countries", JSSL, VII, April 1844, p.5. The paper was read in December 1843.
2. Ibid., pp.1-6.
3. Ibid., p.7.
4. Ibid.
result was to exaggerate urban-rural differentials. Chadwick turned this argument on its head by objecting that there was nothing inevitable about high infant mortality rates.\(^1\) This was to confuse the issue of whether large numbers of infants had to die with that of whether or not they actually did. It was the latter which made the index of average age at death unreliable since its use ensured that differing age-structures would give different results even if the age-specific rates of mortality were identical.

The paper was typical of Chadwick, not only in its methodological weaknesses, but in the way in which he placed his arguments in the context of an attack, and frequently a misinformed attack, on the actuarial profession. This served to antagonize unnecessarily potential allies and F.G.P. Neison was moved to protest. That protest (initially made in discussion after Chadwick's paper) was to lead to the production of a separate paper refuting Chadwick.\(^2\) The use of the average age at death was "fallacious in principle" and "contradictory" in use. For Neison the "whole question turns" on differing age-structures. For example, according to the 1841 census, 14.5 per cent of the population in Bethnal Green was under five while in St. George's Hanover Square the proportion

1. Ibid., p.9.
2. F.G.P. Neison, "On a Method recently proposed for conducting Inquiries into the Comparative Sanatory Condition of various Districts, with Illustrations, derived from numerous places in Great Britain at the period of the last Census", JSSR, VII, April 1844, pp.40-68. Read January 1844.
was only 8.6 per cent. The average age at death in Bethnal Green was 25.80 years, in St. George's Hanover Square 31.23 years. But had the population in St. George's had the same age-structure as that of Bethnal Green the average age at death would have been 27.25. Thus the true advantage was 1.45 years not 5.43. By the crude method Marylebone appeared to have the advantage over Bethnal Green by 3.32 years whereas standardization changed this to a disadvantage of 1.26 years. The centripetal tendency of standardization was the norm: the difference before adjustment between Kensington and Liverpool was 32.39 years to 20.67, afterwards it was 26.71 to 22.25. Taking seven cities and five counties the range was 20.67 to 38.42 years whereas when all populations were standardized to London the range was 25.07 to 31.48 years. The deduction that Neison correctly made was that Chadwick's index did "not give any indication of the sanatory condition of a community". The same objection was made to the crude death rate. For Neison all indices in vital statistics had to be adjusted to a standard age structure.

The recommendation came too late to have much effect on the public health movement which reached its climax of propaganda activities in the years 1843-4 with the work of

1. Ibid., p.41.  
2. Ibid., p.44.  
3. Ibid., p.45.  
4. Ibid., p.46.  
5. Ibid., p.51.  
6. Ibid., pp.52-3.
the Royal Commission on the State of Large Towns and Populous Districts and the formation of pressure groups such as the Health of Towns Association. In any case Chadwick was too powerful a figure for a relative unknown such as Neison to undermine. That Neison's paper went unremarked outside a narrow circle is shown by the use in the 1848 Public Health Act of an arbitrary crude death rate of twenty-three per thousand as the point at which local public health boards had to be formed. ¹ Meanwhile, between 1843 and 1845, the third of the governmental inquiries had taken place. The Royal Commission of those years marks the broadening of the public health movement to incorporate a much wider range of persons than the statisticians and a few others who had dominated it up to the publication of Chadwick's report. Nevertheless, some of the statisticians made a contribution and a part of the commission's work was quantitative in character. Its directions were to discover the causes of disease and the means of improving the public health with reference to drainage, sewerage, and the provision of water supplies.²

1. Flinn, p. 71.
2. State of Large Towns and Populous Districts. R. Comm. First Rep., p. v; GBPP 1844 XVII. There was one further large scale government inquiry in the 1840's: the Metropolitan Sanitary Commission of 1847. Chadwick, Southwood Smith and Richard Jones were three of the five commissioners. Some statistical evidence was given based upon the registration data but it was of a familiar type. The strength of the commission's reports lay more in their detailed analysis of possible sewerage systems for London (see GBPP 1847-8 XXXII). The Health of London Association also produced a survey of the sanitary state of London in 1847 but this added nothing of particular note. The Health of Towns Association did not produce any new surveys.
Most of the evidence was directed towards the means of improvement which perhaps suggests a misplaced confidence in the imminence of legislation. But Southwood Smith was brought in to do his by now familiar performance on the fourth annual report of the Poor Law Commission and the effects of fever on the lives of the poor. W.A. Guy gave evidence as the recognized expert on the effects of employments on health. The main body of statistics, however, came in the appendix. There was, for example, a report on Liverpool by W.H. Duncan. It was a fair indication of the advantage that the public health reformer had in the mid-1840's compared with ten years earlier. Farr's returns enabled Duncan to show the effect of overcrowding on mortality and the greater expectation of life in the country. Enumeration of the number of courts and cellardwellings, which had been begun by the Manchester Statistical Society, proved that half of the working classes lived in them. Analysis of the maps prepared by the Commissioners of Sewers suggested that the working classes (three quarters of the total population in Duncan's reckoning) had just over one third of the total mileage of streets and one sixth of the mileage of sewered streets. Farr's reports on the causes of death showed the high incidence in Liverpool of deaths from fevers, consumption, and "convulsions" which, Duncan argued, were the result of "impure

air". 1 It was also possible to infer rough correlations between the number of deaths from fevers and the proportion of cellar dwellings, lack of sewerage, and high density. 2 The conclusion that Duncan drew was a paradigm of the belief of the statisticians in reform within the existing structure:

"Of course no one but a Utopian dreamer can expect that - where there is such a wide difference in the command of the necessaries of life as must always exist between one section of the community and another - any sanitary regulations will succeed in reducing the mortality of the poor to the same level with that of the wealthier classes; but after making every allowance of this kind, will any candid mind refuse to admit that, in the case of Liverpool, a large balance must still remain to be charged to the account of the physical causes which have been pointed out". 3

Equally impressive were some of the other local surveys in the report, in particular those by Rev. J. Clay (chaplain at the prison) on Preston and Thomas Laycock on York, which all led to the same sort of conclusion about the possibilities of reducing sickness and mortality. The series of local reports was expanded in the second report of the commission. John Robertson submitted a paper on the causes of death in Manchester "authorized by the Statistical Society of Manchester". 4 Perhaps the most important was that by Lyon Playfair on Lancashire. In a section summarizing much of what had gone before he examined the physical causes of disease to show the extent of the "removable causes". 5 But then, via a discussion of

1. Ibid., pp.19-21.
2. Ibid., pp.25-8.
3. Ibid., p.30.
5. Ibid., pp.47-61.
the administration of opiates to children, Playfair takes up the other part of the question, the "moral causes of disease". These included the "ignorance of domestic economy among the poorer classes" which resulted in early marriage. Playfair graphed the relationship between pauperism and mortality and argued that it was inverse in that the year of highest pauperism was that of the lowest mortality between 1838 and 1843. Hence he inferred that bad times meant the lack of means for the "indulgence of vicious and costly propensities". Here the argument was turned back upon itself in a somewhat inconsistent manner since Playfair further argued that the "low state of the system produced by continued exposure to the physical causes of disease creates an appetite for stimulants, which gradually lowers the moral as well as the physical condition" so that "the physical causes of disease indirectly become the causes of crime".

Playfair was to a large extent repeating Chadwick's ideas in the *Sanitary Report*. But Chadwick was not alone in this type of belief and it is vital to recognize that throughout the public health movement there ran a strong vein of theory about the relationship between the individual and the environment, a theory which, as we have said before, was central to the statistical movement. There was a continuing dialectic about the relative importance of the moral responsibility of the individual - poor and

1. Ibid., pp.67-72.
2. Ibid., p.69.
3. Ibid., p.70.
degraded in the conventional view of the working classes - as against those factors over which he had no control, environmental influences which had depressed and eventually destroyed his character. This dialectic was not so much an argument between members of the statistical movement, nor a development from one position to another, as an ideological tension which existed within each statistician. At any one time the statisticians would sound more or less moralistic or environmentalist according to the wider topic under discussion. They were at their most moralistic on poor laws, at their least on some aspects of public health. Insofar as the former was the concern of the 1830's, the latter that of the 1840's, any shift of opinion which may be discerned becomes more apparent than real.

In the field of public health this dualism was inherent in much of the evidence before and the conclusions of the Select Committee on the Health of Towns in 1840. At its crudest it could lead to the statement (not by a statistician) that "bad air ... involves the necessity of taking something as a stimulant". Miasma theory plus a false view of alcohol as a stimulant did not produce a very subtle view of life. The representatives of the statistical movement were more complex in their attitudes. Southwood Smith was given no chance to go beyond his brief exposition in the fourth annual report of the Poor Law Commission. But Joseph Fletcher wanted to see building

regulations and other sanitary reforms to prevent the "most frightful disorders" which were consequent upon the poor being so "feeble morally, and ignorant to secure their own interests". Crime, said Fletcher, was generated as much by "the filthy and miserable habits of these town populations as by their own ignorance". Fletcher, however, was unwilling to agree that intemperance was due to "actual distress" since the workers of Manchester were paid enough if only they drank less while the "want of comfort at home" arose from "moral causes" such as the wife working.¹

The definition of "moral causes" may seem a little peculiar but Fletcher had oscillated carefully between them and "physical causes".

With evidence from the statisticians like this Slaney's committee was able to conclude that the physical environment of the working classes degraded their character and produced "crime, disease, and discontent" thus

"counteracting in great measure (as regards the younger portion of the population) those moral and religious impressions which they might otherwise receive from education where it is afforded to them".²

It was too much to expect the committee to stress the other side of the equation since this would have lessened the force of its propaganda.

Chadwick expanded upon, but in no way originated, the environmentalist argument that sanitary reform would produce a more stable and shrifty working class. Overcrowding

1. Ibid., p.73.
2. Ibid., p.xiv.
was seen as "a cause of extreme demoralization and recklessness, and recklessness, again, as a cause of disease".¹ But Chadwick was still sufficiently the Chadwick of 1834 to allow a large measure of influence to "the powerful operation of depraved domestic habits".² Both moralistic and environmentalist conceptions were inherent in the statement that many new convicts arrived "in a state of disease from intemperance and bad habits" and were improved by "the effect of cleanliness, dryness, better ventilation, temperance, and simple food".³ This contrasted with the non-convict poor who were likely, in the words of the Birmingham committee whom Chadwick quoted at length, to indulge in "improvidence and thoughtless extravagance", buying steaks and chops. The women grew up "totally ignorant of all those habits of domestic economy" which were soon to be preached to the starving Irish.⁴ The great bulk of the Sanitary Report, however, was devoted to Chadwick's idiosyncratic version of the environmentalist case. As with the 1840 committee the reason is obvious - it was a necessary condition for public health reform. When, however, the quantifying reformers studied the condition of the working classes in a wider sense the dualism of their views was more openly asserted.

¹ Chadwick, p.190. More generally see pp.167-204.
² Ibid.; p.205.
³ Ibid.; p.279.
If most of the major writings on public health were the result of official inquiries then the way had been prepared by the work of the statistical societies on the condition of the working classes in the 1830's. The studies of this type were pioneered by the Manchester Statistical Society which to a large extent set the pattern which others were to follow.

The Manchester society's work began with the survey sponsored by Benjamin Heywood of part of Manchester. This was expanded into a full survey which covered a considerable part of urban Lancashire. ¹ Unfortunately, the published report of the committee responsible for the inquiry is brief and, unlike the education reports, does little more than summarize the tables to be found in the appendix. ² Consequently, the beliefs of the Manchester men were not openly expressed. Yet they may be inferred from the indirect evidence of the questions included in the schedules of inquiry. In addition to the features discussed in Chapter VI it might be noted that the committee argued that where the figures demonstrated that the great majority of children over twelve were employed this could be taken as "showing the state of ease and comfort in which the population of these districts might live, if their ample earnings were laid out with due economy".

The ideal of the self-reliant working class was made

1. See above, Chapter VI.
more explicit in the report on Rutland where the existence of "thrifty poverty" was noted with satisfaction, as was the absence of swearing and drunkenness which indicated that the moral condition was one of "sobriety, frugality, and industry". But it was also conceded that other influences were in operation. In the report on Hull the society stressed that "much both of the habits and the character of the people" depended upon the state of their dwellings. The dualism present even in a moralistic statement was shown when discussing the number of persons to a bed (a standard question) where the high ratio was taken as "not only a signal proof of destitution and discomfort, but a fruitful and certain source of evil".

Sleeping in the same bed or room on the part of the working classes was a constant source of dismay to the statisticians because of its destruction of delicate feelings. This and other aspects of the moral argument dominated the reports of the Bristol Statistical Society. Its first report tabulated the possession of books, the deposits in friendly societies, the number of prints on the walls, the command of the skills of "domestic economy" (only six women in the 275 families could knit, and two could neither sew nor wash while seventy-nine of the men were stated to be unable to mend their own furniture). In the full report on some 21,000 people indices of this

2. JSSL, V, July 1842, pp.213-5.
type were taken to prove "the wretched and barbarous condition in which a mass of our fellow-creatures are living". However, this was not inevitable since if only "a reasonable sense of decency and cleanliness" could be instilled there were "ample means ... to realise most essential improvements". The culprits, then, were "improvidence and low sensuality". The Bristol society would seem to stand at the moralistic pole but it should also be recognized that the society did not condemn the working classes to remain in the "wretched" state for which they were themselves responsible. Rather it sent forth a call to action to be "prosecuted in a becoming spirit, and under a sense of religious duty". As might have been anticipated from its membership the Bristol Statistical Society saw the working classes as objects of missionary activity and the purpose of their work was to measure the abyss of ignorance and degradation into which the faithful must plunge.

Less heavily evangelical but sometimes as moralistic was the report of a committee of the Statistical Society of London on two parishes in Westminster. It was found that the number of "theatrical or amatory" pictures exceeded the "serious" ones. The committee was also concerned to find the proportion which attended religious worship. A second committee, founded because of a gift from Hallam, produced perhaps the most comprehensive of

2. Ibid., p. 9.
3. Ibid.
the early Victorian poverty surveys in 1848. 1 The intention was to reveal the condition of an "average" section of the poorer classes rather than that of "those lowest sinks of barbarism and vice" which had been concentrated on in the sanitary reports. 2 Hence an elaborate analysis of one parish, St. Mary's, was undertaken. The moralistic argument was rather weakly represented in the report. Both the schedules of questions and the text concentrated on possible environmental factors. However, since the mass of material to be included placed a constraint on the size of the report the comments are basically restricted to summarizing the tables.

This was not so for the nearly contemporaneous report on Church Lane, St. Giles by a committee of Sykes, Guy, and Neison. 3 It was similar in many ways to the qualitative sections of Charles Booth's poverty survey. Individual dwellings were described in terse detail based on personal observation. A picture was thereby built up of "human wretchedness, filth, and brutal degradation". Yet the moral condemnation, the primary objection made, not to the conditions themselves, but to the associated degeneracy, was entirely offset by ascribing moral failure to those conditions:

"it is physically impossible to preserve the ordinary decencies of life; where all sense of propriety and self respect must be lost, to be replaced only by a

1. JSSL, XI, August 1848, pp.193-249.
3. JSSL, XI, May 1848, pp.1-18. The report was accompanied by a letter from Horace Mann on the mortality in Church Lane (see pp.19-24).
...recklessness of demeanour which necessarily results from vitiated minds".

The solution was the provision of model dwellings for "that large class of our labouring population which is prepared to adopt habits of cleanliness and decency".¹ The implication was that some would not be so prepared. Moreover, the aim remained the creation of a decent, independent, quiescent artisan. Humanitarianism, class interest, and statistics made a powerful reforming brew.

Similar motives lay behind the numerous inquiries carried out or sponsored by individuals within the statistical movement. For example, Henry Ashworth of the Manchester Statistical Society painted a picture of black despair with regard to the condition of the working classes during a trade depression in Bolton. The average earnings per family from all sources among 1003 families surveyed was 1s 2d per week.² Yet this was no indictment of industrial society but part of a campaign on behalf of limited parliamentary reform and free trade.³ Less immediately political but more moralistic was a report by William Felkin of Nottingham on a depressed group of Norwich hand-loom weavers. Felkin took a censorious view of their beer drinking and reading of Paine, Carlyle, Voltaire, and Volney as well as periodicals "of a deleterious kind".⁴

1. Ibid., p.17.
2. Ashworth, "Statistics of the present Depression of Trade at Bolton; showing the mode in which it affects the different Classes of a Manufacturing Population", JSSL, V, April 1842, pp.74-81.
4. JSSL, I, January 1839, pp.540-1.
The opposite pole of the moral utopia was the well-regulated factory town of Hyde (Ashton's centre) where bibles, musical instruments, pictures, furniture, and "domestic economy" were the norm, the drink trade was in disarray, and pauperism, crime, and illegitimacy practically non-existent. 1

Felkin's ideals were crudely delineated (and frequently not backed by statistics) but the type of mind they represented was central to the statistical movement. On the one hand it was considered essential to implant good character while on the other it was recognized that this was very difficult in the existing state of society. G.R. Porter made explicit his adherence to this opinion when writing for the Central Society of Education on its social inquiries. Though he saw terrible overcrowding as the fault of the poor it was the responsibility of the rich to provide a better alternative since in such an urban environment as had been found moral improvement was impossible. 2 Yet it was the Central Society of Education which provided one of the most bitterly laughable examples of the underlying moral preconceptions of the social investigators of early Victorian Britain. The survey of Marylebone discovered that 166 parents were "able to sing a cheerful song" while 871 could not. The accompanying rural survey found that 197 families cultivated flowers

against 244 which did not. In neither survey was there any attempt to assess the effects of low wages or unemployment and underemployment. Despite the public health agitation there is a sense in which all statistics in our period were moral statistics.

Chapter XI.


One of the distinguishing characteristics of the statistical movement is the very use of the term "moral statistics". It is a term which gradually disappeared during the nineteenth century; its popularity in our period underlines the fundamental moral preoccupations of the statisticians. It was a loosely applied phrase, covering some of the rather peculiar topics discussed in the last chapter, such as the number of pictures possessed and the numbers growing flowers. At its heart lay two or three broad subjects: crime, education, and, less frequently studied, religion. Of these three the most work was done on the statistics of education. The reasons for this will be deferred for the moment for it is desirable to examine first just what the statistics of education were, how they were arrived at, and what they indicate about the state of education at the start of large scale government intervention to improve the quantity and quality of English education.¹

These questions have recently generated an article by Dr. E.G. West which attempts to answer them within the context of modern welfare economics theory.² It is Dr.

1. Scottish education is, of course, a separate topic. Thankfully, from this writer's point of view, the overwhelming bulk of the statistical movement's work is on English education.

West's thesis that the history of education has hitherto too much rested on the assumption that intervention by the state has been both good and necessary and that it was not until such intervention, particularly the 1870 Education Act for England and Wales, that as much was done for education as might be expected. Therefore, it is further necessary to assume that the private sector was inefficient and that increasing efficiency was marked by the successive stages of state action - 1833, 1839, and 1870. West tries to prove that, on the contrary, as large a proportion of net national income was being spent on primary and secondary education in the early 1830's as in the 1920's and even later. West's general point about prevailing assumptions is a useful one and should be taken cognizance of in future analysis of the history of education, though one may feel that historians have sinned less than educationalists. But West has scarcely proven the rest of his case for his use of the available statistics is open to serious question. In one or two places it borders upon the wildly unhistorical.

West's major support comes from a reexamination of the figures collected on the numbers being educated in 1833 in the light of the subsequent surveys by the statistical societies. The 1833 returns had been made because the Earl of Kerry had moved for them in the House of Commons.

1. For example, see Dr. J.R.B. Johnson's unpublished thesis of 1968.
2. I believe a critique of West's article is to be published in the November 1971 Review.
3. Abstract of Answers. Education, I, p.3; GBPP 1835 XLI. The Earl of Kerry was the eldest son of the Marquis of Lansdowne.
The responsibility for implementing the motion was passed to the census-taker, John Rickman. He drew up schedules which were sent to some 18,000 overseers of the poor. Information was sought on the number of infant schools, day schools, and Sunday schools and the numbers educated in each. The survey had been done cheaply (total cost was about £600) and there were many obvious defects. The overseers were not required to carry out a street by street survey so that some small schools were probably omitted. More seriously, there was double counting, most notably in the lack of a distinction between those who attended both day and Sunday schools and those who attended one type only. It was not clear how the attendance figures were derived but it would seem that they were taken from the numbers on the books which could be a very different figure from the average or the total normal attendance. These reservations were made even before final publication, particularly by the secretary of the British and Foreign School Society. The suspicion of inaccuracy was also a factor in making the Manchester Statistical Society undertake its own survey which led to the other local surveys.

Dr. West uses these surveys to correct the Kerry returns. The latter had given a total of 1,276,947 children in England and Wales attending day schools of one sort

1. Education. Sel. Cttees. Mins. of Ev., p.1; GBPP 1834 IX.
or another. West argues that this was an underestimate by 20 to 33.1/3 per cent and that the true figure lay somewhere between 1,596,184 and 1,915,420.¹ This adjustment would seem too generous. Table 11.1 shows the Kerry figures compared with subsequent more detailed surveys of fourteen areas. The surveys were made between 1834 and 1842 so that it is necessary at least to make a correction for population growth. Consequently, the Kerry figures have been adjusted to the date of the local survey on the basis of the rate of increase in each area between 1831 and 1841. The percentage shortfall of the adjusted Kerry figures from the local inquiry figures is given in the last column.

The figures in the last column are a preliminary basis for assessing the total degree of underestimation in the Kerry returns. They take no account of growth after 1833 other than population growth. Therefore, if a real extension of education took place they will exaggerate the amount of underestimation (it is argued below, however, that such growth was not likely to have been great). At first sight they might be taken to confirm Dr. West's guess of a total underestimate of one third to one fifth. But this would not take account of the differential pattern in the figures. These are high for the large urban areas (roughly averaging forty per cent). For the smaller urban areas the average seems nearer twenty-five per cent.

Table 11.1: Comparison of the education returns of 1833 with subsequent local surveys.¹

<table>
<thead>
<tr>
<th>Place</th>
<th>Date of survey</th>
<th>Numbers Recorded</th>
<th>Kerry popn.</th>
<th>Annual growth, returns per cent</th>
<th>Adjusted Kerry fall per cent</th>
</tr>
</thead>
<tbody>
<tr>
<td>Alnwick</td>
<td>1838</td>
<td>832</td>
<td>794</td>
<td>-0.2</td>
<td>785</td>
</tr>
<tr>
<td>Rutland</td>
<td>1838</td>
<td>3,039</td>
<td>2,689</td>
<td>1.0</td>
<td>2,826</td>
</tr>
<tr>
<td>West Bromwich</td>
<td>1837</td>
<td>1,554</td>
<td>998</td>
<td>5.5</td>
<td>1,236</td>
</tr>
<tr>
<td>Middlesex (part)</td>
<td>1842</td>
<td>1,827</td>
<td>1,414</td>
<td>0.8</td>
<td>1,519</td>
</tr>
<tr>
<td>Westminster (part)</td>
<td>1838</td>
<td>5,083</td>
<td>4,157</td>
<td>1.7</td>
<td>4,599</td>
</tr>
<tr>
<td>Westminster (part)</td>
<td>1838</td>
<td>7,755</td>
<td>4,852</td>
<td>0.7</td>
<td>5,075</td>
</tr>
<tr>
<td>Manchester</td>
<td>1834</td>
<td>20,079</td>
<td>12,788</td>
<td>2.6</td>
<td>13,069</td>
</tr>
<tr>
<td>Bury</td>
<td>1835</td>
<td>2,625</td>
<td>1,599</td>
<td>3.2</td>
<td>1,703</td>
</tr>
<tr>
<td>Salford</td>
<td>1835</td>
<td>5,511</td>
<td>3,567</td>
<td>3.0</td>
<td>3,711</td>
</tr>
<tr>
<td>Liverpool</td>
<td>1835-6</td>
<td>29,454</td>
<td>13,010</td>
<td>3.3</td>
<td>14,105</td>
</tr>
<tr>
<td>York</td>
<td>1836-7</td>
<td>4,749</td>
<td>3,332</td>
<td>0.8</td>
<td>3,426</td>
</tr>
<tr>
<td>Bolton</td>
<td>1837</td>
<td>3,227</td>
<td>2,565</td>
<td>1.7</td>
<td>2,744</td>
</tr>
<tr>
<td>Birmingham</td>
<td>1838</td>
<td>15,043</td>
<td>7,343</td>
<td>2.2</td>
<td>8,367</td>
</tr>
<tr>
<td>Bristol</td>
<td>1841</td>
<td>14,694</td>
<td>7,344</td>
<td>1.6</td>
<td>8,340</td>
</tr>
</tbody>
</table>


2. Excluding boarding schools (not included in the 1842 survey).
(Bury being rather high and West Bromwich low). Perhaps the two most significant figures are those for Alnwick and Rutland, both well below ten per cent. Now, the 1841 Census showed that twenty-one per cent of the population lived in cities of fifty thousand or more and eight per cent in towns of twenty to fifty thousand, leaving seventy-one per cent in smaller centres and the countryside. Therefore, a figure based upon the first two groups (as West's is) must be too high. If we estimate an average forty-five per cent underestimate for the cities over fifty thousand, and fifteen per cent for the rest then the overall average would be 22.70 per cent. This may be taken as the upper limit. A reasonable lower limit may be set by assuming underestimates of thirty-five per cent, twenty per cent, and ten per cent, giving an overall figure of 16.05 per cent. This would raise the Kerry figures to 1,519,889 to 1,651,937. Our upper limit is a little more than West's lower, yet if anything our figures err on the side of generosity since the figures for the countryside and small towns were set higher than the available data suggested (since that data is so sparse).

Moreover, the adjusted figures are a serious overestimate for two reasons. Firstly, as the correction is based upon the statistical surveys they include dame schools and other institutions for the very young which can barely fall within the definition of "education" in
any formal sense useful for comparisons. The dame schools were not really formal educational institutions but rather primitive day-care centres for the working classes. The statistical societies themselves did not regard them as schools in any meaningful sense of the term.¹ Joseph Fletcher pointed out that the dame schools were often called "out-of-the-way schools" since that was their purpose. The normal age-range was two to seven, again suggestive of their function.² Some part of the rest of the educational system should also be regarded in this light. Table 11.2 shows the proportion of "schoolchildren" in certain areas who attended dame schools or were under five and attended other schools.

Table 11.2: Numbers of schoolchildren in certain areas under five or attending dame schools.

<table>
<thead>
<tr>
<th>Area</th>
<th>Total Attendance</th>
<th>Dame Schools under five</th>
<th>Others Total</th>
<th>Proportion of last (per cent)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Rutland</td>
<td>3,039</td>
<td>678</td>
<td>235</td>
<td>913</td>
</tr>
<tr>
<td>Westminster (part)</td>
<td>5,083</td>
<td>721</td>
<td>680</td>
<td>1,401</td>
</tr>
<tr>
<td>Westminster (part)</td>
<td>7,755</td>
<td>759</td>
<td>1,196</td>
<td>1,955</td>
</tr>
<tr>
<td>Bury</td>
<td>2,625</td>
<td>840</td>
<td>298</td>
<td>1,138</td>
</tr>
<tr>
<td>Salford</td>
<td>6,541</td>
<td>1,543</td>
<td>387</td>
<td>1,930</td>
</tr>
<tr>
<td>Liverpool</td>
<td>29,464</td>
<td>5,240</td>
<td>2,138</td>
<td>7,378</td>
</tr>
<tr>
<td>York</td>
<td>4,749</td>
<td>745</td>
<td>320</td>
<td>1,065</td>
</tr>
<tr>
<td>Birmingham</td>
<td>15,043</td>
<td>3,900</td>
<td>1,192</td>
<td>5,092</td>
</tr>
<tr>
<td>Bristol</td>
<td>14,694</td>
<td>3,015</td>
<td>1,921</td>
<td>4,936</td>
</tr>
</tbody>
</table>

Despite the wide variations in the proportion at dame schools (from about ten per cent to about thirty per cent) the combined proportion, with the exception of Bury, lies within a much narrower range which suggests that the two

1. See above, Chapters VI, VII.
2. Hand-Loom Weavers Commissioners. Reps., Pt. IV, pp. 84-5; GBPP 1840 XXIV.
were complementary. Altogether, a deduction of twenty-five to thirty per cent seems justifiable for children for whom the schools were performing essentially a different function from that of education. This brings the adjusted Kerry figures down to 1,054,292 to 1,238,953.¹

We have still to allow for the distinction between enrolments and attendance. This is made up of two parts—normal absenteeism and the fact that the numbers on the books were inflated because of the frequently short period of stay. It is average attendance we wish to deduce since it is on that figure that our estimates of cost are based. West puts average attendance at eighty per cent (using the 1851 Census).² But 1851 was not 1833 and it is possible the earlier figure was a little lower. Nor, since the 1851 Census was expected and confined to a single day, is it unlikely that the books were revised while extra efforts were made to ensure a high turnout. Moreover, inflated returns could occur since it was the responsibility of the schools to make them. Innocent confusion over the term "number actually in attendance" could have led to returns of the total number normally in attendance. Finally, an unknown number of returns were incomplete and it is likely that the worst schools had the greatest gap between enrolments and attendance. In 1845 Joseph Fletcher found the

¹ Taking, of course, thirty per cent off the previous low and twenty-five per cent off the high. The carrying forward of the superficial accuracy of the figures is merely to avoid compounding rounding-off errors.
² West, op.cit., p.85.
average attendance over the previous six months in the
British and Foreign Schools to be 77.4 per cent of the
number on the books and the number in actual attendance
at the time of inspection to be 69.3 per cent. The
report of another inspector covering a wide range of areas
gave 75.4 per cent present at examination, varying from
86.9 per cent in the better London schools to 29.2 per
cent in the third and worst class of schools.

Perhaps equal weight should be given to a survey of
nine large Church of England schools in Birmingham, Liver-
pool, Manchester, and Bury in 1840. Whereas the statisti-
cal societies had reported 1,527 pupils for these schools
in their reports the inspector found only 988 in attend-
ance (sixty-five per cent). The worst figures were for
three schools in Liverpool where 290 were found against
643 reported in the local survey. Since that survey gave
the highest figure of any for the supposed underestimation
in the Kerry returns we may be more sceptical about the
statistical surveys than Dr. West is. In any case it
seems reasonable to reduce our revised estimates by a fur-
ther twenty to thirty per cent to arrive at an average
attendance figure for 1833. This brings the total down to
738,004 to 991,162, or 750,000 to 1,000,000 in round numbers.

1. Mins. of Privy Council Cttee. on Education, 1846, p.259; GBPP 1847 XLV. Hereafter MPCCE.
2. Ibid., pp.136-47.
3. MPCCE, 1840-1, p.79; GBPP 1841 XX.
4. It might be noted that the number found in attendance in Liverpool was forty-five per cent of the local survey's estimate while the Manchester Statistical Society had estimated that the Kerry figures were only forty-eight per cent complete.
To convert these attendance figures into expenditure we have to estimate the average expenditure per child per year. West does this by an indirect route, suggesting an average weekly fee of 9d, a forty-two week year, and eighty per cent attendance (he had not previously allowed for non-attendance) to give 25s 6d per annum. 1 The deductions are tenuous indeed, even allowing for the available evidence. Fletcher gives an average of 13s 4d per year for 32,000 children at British and Foreign schools in the mid-1840's. 2 The best data is in the 1851 Census where there are tables for the income of public day schools. 3 Not all the figures are usable — schools like the blind schools clearly include their total expenses which covers board and the like as well as education. Moreover, the returns are not complete. Excluding the former type of schools and weighting returns for the various sorts of schools to their total number of pupils gives an average of 20s 1d per head. This includes 35,612 pupils out of 1,302,082 in the schools covered at collegiate and grammar schools who monopolized almost exactly twenty per cent of the total income. Some part of this income no doubt also went on living expenses. All "private" schools were not included so that we can but hope the two errors will cancel each other out. But the 20s 1d must be raised to 25s 4d to put it on the basis of

2. MFCCE. 1866, p. 259.
average attendance instead of number on the books. This would seem to mean that Dr. West's idiosyncratic method gives an error of less than one per cent. But, of course, the 25s 4d figure relates to 1851. By that date not only were there government grants but gross national income per capita had risen eighteen per cent since 1833. The last fact alone would require a downward revision to 21s 5d. Moreover, there had been a shift in the type of schools so that many of the worst private schools had been supplanted by public schools (up from forty-three to sixty-six per cent of the total). Thus it would appear unlikely that a round figure of 20s per head per year would not err on the low side. This gives a total annual expenditure of £738,000 to £991,000. To this we have to add an allowance for Sunday and factory schools. West adds one-fifth for the former to bring his range up to £2,450,000 to £2,900,000. He then allows for the latter by rounding up to £3,000,000, implying an average allowance for factory education of £325,000 or one-eighth of the cost of all other day and Sunday schooling. Both these allowances are unbelievably high. In 1851 only one per cent of the day school population was at factory or similar schools. A combined allowance of ten per cent would be more than ample. This brings the total education budget to £800,000 to £1,100,000 in round figures. We would repeat that both

2. 1851 Education Census, p.xliiin.
3. Ibid., p.cxxiii.
these limits are probably still too high since all adjustments have erred on the side of generosity to Dr. West’s case. In percentage terms this comes to 0.27 to 0.37 per cent of net national income compared with Dr. West’s 1.00 per cent. We therefore arrive at the considerably more credible conclusion that the proportion of national income spent on primary and secondary education in 1920 was probably at least double the figure in 1833, compared with Dr. West’s conclusion that it was only seventy per cent as high.¹

But it is also West’s contention that the provision for education expanded very rapidly in the generation after the end of the Napoleonic Wars. It is in justifying this view that he is at his worst in the treatment of historical evidence. We are told that the Pendleton and Hull surveys showed a significant shift in the proportion ever having attended school: 2.8 per cent of the "ascertained" adults and 1.5 per cent of the "ascertained" fifteen to nineteen year olds stated that they had never been at school.² This in itself means little enough but it leaves out non-respondents. Of all who were questioned at Hull 78.7 per cent of the fifteen to nineteen group stated that they had attended at some time, compared with 94.1 per cent among the adults.³ If the non-respondents (19.9 per

¹. Ibid., p.87.
². Ibid.
cent and 3.9 per cent) are ignored one could more easily, but just as erroneously, conclude that there had been a dramatic decline.

West's main support for the thesis of growth comes from a comparison of government returns of 1818 with those of 1833 combined with a summary of the dates of establishment of the schools existing in 1833. We have no way of knowing how accurate the 1818 returns were and it is consequently impossible to compare them with the 1833 figures. As for the test of the dates of foundation this is useless. Since many private schools were shortlived the impression would be gained at any point in time that there had been a large increase in the number of schools in recent years. West notes that "school 'deaths' might qualify the picture" but is still confident enough to argue that the data "suggest indeed a veritable school 'explosion' in Manchester in the first four years of the 1830's". The same sort of impression would be gained from the 1851 Census. At that time there were counted 30,524 private schools in England and Wales compared with 29,141 in the defective 1833 returns. Yet 21,192 of those schools in 1851 were known to have been founded between 1831 and 1851 - no less than 1491 in the first three months of 1851 alone. The rapid rate of turnover is apparent and "births" had only just outmatched "deaths". Indeed, the number of scholars

2. Ibid., pp.79-80.
4. Ibid., p.cxxxv.
reported in private schools had declined from 732,449 to 721,396 (a quite considerable decline in real terms). Since about three-quarters of the reported schools in 1833 were private schools it is clear that foundation dates could not be used as an index of growth.¹

It is possible that between 1833 and 1851 there was no real increase at all, at least in certain areas. Simply taking the total numbers on the books for all day schools we have suggested that the upper limit for 1833 was 1,651,937. The corresponding figure for 1851 was 2,144,378, or an increase of thirty per cent.² But between 1833 and 1851 the increase in the total population was twenty-five per cent according to the estimates given in a paper to the Manchester Statistical Society in 1853.³ This implies there may have been practically no real growth. Even our lower limit for 1833 gave a real growth of thirteen per cent, much of which could be an increase in the average length of stay rather than an increase in the proportion receiving some education. Richson argued in 1853 that there was if anything actually a decrease.⁴ However, it is possible to argue for an increase on the basis of better attendance and of a shift in the type of schools used.

¹. Ibid., p.xliii n.
². Ibid., p.cxxii. Dr. West does not note that his own upper estimate would imply a decrease in real terms of ten per cent between 1833 and 1851.
⁴. Ibid., pp.10-14.
This last factor would mean more children at "school" were actually receiving an education.

The point that the statisticians themselves would have made was that a numerical analysis was but a part of the argument. Contrary to a popular misconception, both then and since, the Manchester society said it had "no data, for stating what numbers of children have never enjoyed the advantage of attending school" but went on to argue

"The conclusions, as to the defective state of education of the working classes, depend, not upon this fact alone, but also upon a vast mass of other matter brought to light for the first time in these enquiries".1

The dame schools were held "frequently in close damp cellars, or old dilapidated garrets" and the teachers all too often resembled the premises.2 The common day schools were little better. One master eagerly answered yes to every question about the subjects he taught. The visitor from the society said this "is multum in parvo indeed", which elicited the response, "Yes, I teach that: you may put that down too".3 All in all this class of school was felt to be "very little fitted to give a really useful education to the children of the lower classes".4

It is the idealistic vision inherent in the criticism of the reports which most arouses Dr. West's ire. The statistical societies are buried by the weight of "Pareto-relevant externalities", "merit good", and "external

2. Ibid., p.6.
3. Ibid., p.8 n.
4. Ibid., p.7. Also see Chapter VI.
diseconomies". Dr. West seems to mean that failure to reach an ideal did not necessarily imply that much more could have realistically been achieved.¹ Yet the argument rests upon the statistics and they indicate that there was room for improvement.²

West makes the further point that the societies' qualitative critique was an aspect of their desire for moral and religious education.³ This is partially true but the critique was broader than that. Report after report detailed the limited range of teaching in many schools - sometimes not even the "three R's", frequently no more than that. Teachers were ill-trained or not trained at all, school buildings were often "wretched in the extreme".⁴ The London society found less to criticize about the cleanliness of the schools in Westminster but noted the incompetence of the teachers in the dame schools and the fact that many were sent there "avowedly 'to do nothing', the injunction from the parent being, that they are not to be 'worried with learning'". In nearly all schools objection was made to the "sameness and commonplace character" of the books used.⁵ Sunday schools were praised for their moral influence but were seen as no

2. In 1846 Kay-Shuttleworth estimated that the kind of education he desired for over 1.8M scholars would cost £2.9M per annum (1851 Education Census, p.xliii). The coincidence with West's estimates for 1833 is remarkable.
3. West, op.cit., p.90.
5. JSSL, I, December 1838, pp.452-7.
substitute for proper secular instruction.1 Fletcher's opinion of the Coventry Sunday schools was that they were, "as a means of secular instruction, almost beneath notice".2 As for factory schools, some may have been excellent but Robert Baker's view was that he would have had difficulty in naming twelve out of 500 mills in the Leeds area where the education was good. Baker found that some of the teachers were nearly illiterate, judging by the certificates of attendance they issued:

"this to certify that 1838 thomas Cordingley as attend martha insep school tow hours per day January 6".3

Baker's superior, R.J. Saunders, who frequently used quantitative material in his reports, was of a similar opinion. In 1843 he stated that at least two thirds of the factory schools were not superior to the private and dame schools he had already dismissed.4 In 1846 only eighty-two out of 337 schools visited were "satisfactory" (including fourteen out of 188 private or dame schools).5

The factory inspectors' reports in the 1840's are one of many sources for quantitative information on the state of education and the educational theories of the statisticians. The high point had been the local surveys of 1834

1. E.g. see Report on Salford, pp.16-17.
4. Inspectors of Factories. Reps., pp.21-2; GBPP 1843 XXVII. Opposite p.44 Saunders gave further examples of teacher illiteracy - e.g. "He do her testify that tese Children Have tended this School too Hauurs during Last Whelk".
5. Inspectors of Factories. Reps., p.23; GBPP 1847 XV.
to 1839. But inquiries into the state of education con-
tinued throughout the 1840's, culminating in that Indian
summer of the movement, the 1851 Census. We have already
seen that the Statistical Society of London set up a census
committee (including Farr and Porter as well as the other
leading fellows). Its report in March 1850 recommended
that schedules should be sent to all head teachers requir-
ing a return of the average numbers in attendance at each
school with a statement of the age and sex of those on the
books while the enumerator was to put each school into one
of three classes. This represented a considerable depart-
ure from the corresponding report in 1840 when it was
decided education should be left to "special investigation"
which could also cover the quality of instruction.

Since the General Register Office was in charge of the
census the report was possibly received sympathetically.
The relevant Act at first seemed to make it possible to
introduce the educational census by the back door. The
Home Secretary had the final authority and the Registrar
General was to issue "such Forms and Instructions" as the
Secretary of State "shall deem necessary". As if to open
the door wider it was further enacted that the enumerators
were, in addition to their usual duties, to

"take an Account of all such further Particulars as
by the Forms and Instructions which may be issued
under this Act they may be directed to inquire into".

1. JSSL, XIII, August 1850, p.269.
2. JSSL, III, April 1840, p.98.
3. 13 and 14 Vict., c.53.
With this opportunity offered George Graham suggested the inclusion of censuses of religion and education. Initially, both were to be compulsory in the same way that other parts of the census were. But clearly the new schedules lay outside the spirit if not the letter of the Act. Stanley argued in the Lords that the Secretary of State was not empowered "to put every question he thought fit, under a penalty for non-compliance". Objection was made in particular to the "most inquisitorial" schedules on private schools. But it was the religious census which, naturally enough, aroused greater suspicion. The Bishop of Oxford was moved to quote Canning to the effect that "nothing was so fallacious as facts except statistics".

The government were forced into a partial retreat and the religious and education censuses became voluntary. Horace Mann was in charge and was now able to proceed even though "some persons in authority" were still trying to persuade people not to cooperate. Stanley had one major victory in that the questions on the number and salaries of the teachers and the income and expenses of the school were not required to be filled in by "strictly private" schools. The public schools were asked to give this information as well as the numbers on the books, the numbers "in actual attendance" on 31 March 1851, the ages of the

1. 1851 Education Census, p.ix.
2. Ibid., p.xiii.
5. 1851 Education Census, p. xii.
6. Ibid., pp.cii-civ.
children, the numbers learning various subjects, the tuition fees, and a few other points.\footnote{1} Less detailed schedules were addressed to evening schools, Sunday schools, and literary and scientific societies.\footnote{2} The schedules, over 70,000 all told, had been distributed before the final verdict on the meaning of the Act and this may have helped in the decision to proceed.\footnote{3} The numbers who initially failed to make returns totalled "several thousands" and a year was spent in follow-up work on these schools with Mann badgering the enumeration officers and they, presumably, badgering the schoolteachers. In the end (the report was not published until 1854) returns were obtained from 70,575 institutions and no returns from 1,583. Allowing for the non-respondents this gave 2,144,378 in day schools and 2,407,642 in Sunday schools on the books.\footnote{4} Mann estimated that under-enumeration would imply that the true figures were not "short of" 2,200,000 and 2,500,000.\footnote{5} Thus he put under-enumeration at no more than about five per cent. This is not impossible for each enumerator dealt with a small area averaging a little more than two educational institutions (and the enumerator had to make a house to house survey in connection with his other work).

Given the figures and the returns for 1818 and 1833 Mann argued the progress of education had been at a "far

1. Ibid.
2. Ibid., pp.cv-cvii.
3. Ibid., p.xiii. There were 30,610 local enumerators.
4. Ibid., p.xiv.
5. Ibid., p.xiv n.2.
from unsatisfactory rate" (he took little notice of Richson's article which he had read). This left unanswered the question of whether existing provisions were adequate, and if not why not. In both the religion and the education censuses Mann followed similar procedures at this point. He had to estimate how many "ought" to be at school. Edward Baines had proposed one ninth of the population which others had raised to one eighth. In 1851 this came to 2,240,951 and meant an average of five and a half years schooling for all five to fifteen year olds compared with a total of 1,768,231 enumerated in 1851 as being at school in that age-group. The age-range of those at school was in fact greater than five to fifteen. Therefore, Mann began by considering the 4,908,696 children in England and Wales aged three to fifteen. He excluded one million as employed in the factory or at home or in thieving. A further five per cent was deducted for illness and 50,000 for those educated at home, leaving 3,663,261. But since not all the rest could reasonably be expected to be at school all the time Mann deducted all three to five year olds not at school or ill and all twelve to fifteen year olds not at school, ill, or in employment. That left 3,015,405 consisting of all five to twelve year olds not employed, receiving professional home instruction, or ill plus all three to five

1. Ibid., pp.xv-xxi.  
2. Ibid., p.xxxi.  
3. Ibid., p.xxiv.  
4. Ibid., p.xxv.
and twelve to fifteen year olds at school.¹

It was a peculiar procedure but perhaps no worse than any alternative. It tried to take account of the fact that universal education over a ten or twelve year period was not a practical standard without falling into the equally vulgar error of assuming that whatever was was what was possible. A standard of one-sixth of the population on the books of the schools was now taken to "ensure an adequate amount of education, at a proper school age, for the whole of the English people".² Mann was aware that there was no way of knowing the share of various groups in the existing averages and that the available attendance figures implied that the

"unpleasant choice of evils lies between a wide extent of inefficient schooling and a limited extent of more effective teaching, contemporary with a certain portion, also limited, of utter ignorance". The former was the more likely.³ As it was, there was a shortfall of 970,000 children aged five to twelve. At this point Mann reverted to the classic argument of the local statistical surveys by adding the rider that a "desirable standard" was met only if the further criterion was satisfied that those "already under education were in schools efficiently conducted".⁴ An examination of the curricula and other factors, however, indicated that, despite improvements, "the actual present state of many

1. Ibid., p.xxvi.
2. Ibid.
3. Ibid., pp.xxix-xxx.
4. Ibid., p.xxxi.
[schools] must be far from satisfactory.¹

It remained, therefore, to account for the failure to reach the practicable ideal. Least important was the lack of school accommodation. A more diffuse reason put forward was the poverty of the parents but Mann opted for a thoroughly moralistic argument in rejecting this. By "poverty" Mann took people to mean "the incompatibility of the child's instruction with some personal indulgence of the parents" and cited G.R. Porter to the effect that the working classes spent nearly £50,000,000 on "intoxicating liquors". More telling was the observation that "free schools, well conducted, may be found half-empty" though Mann did not think it necessary to consider the place of the child in the family economy of the poor.² He was by now working himself up into a full denunciation of England's barbarian hosts. Mann's third cause was the rather extraordinary Dickensian one of a "numerous body" of criminal and destitute children (no attempt was made to quantify the assertion). But the "grand cause" was the "indifference of parents" who had culpably failed to see where their true self-interest lay. Mann allowed a little for "a perception of the really trifling value of a proportion of the education offered for their purchase", but shoddy goods were less important than irrational market resistance. This resistance sprang from the generally un-Smilesian attitudes of most parents who saw their "own

1. Ibid., pp.xxxi-xxxvi.
2. Ibid., pp.xxxix-xl.
social status as the standard. For working-class parents this came to mean that they considered their children would gain a more "useful" education outside school than inside.  

It was self-evident to Mann that such a philosophy was wrong. Once again a "statistical" report went beyond its terms of reference into questions of social policy and Mann proposed remedies. The first was "intellectual recreation" for the working classes so that education would be more useful. Mann does not say who should provide the facilities but the mention of mechanics' institutes, reading clubs, and local libraries points to the middle classes encouraging the independent artisans. Indeed, the independent artisan quickly made his expected appearance in the proposal that "various social duties and responsibilities" (mysteriously undefined) should be "devolved" upon the parents. Finally, the schools should be improved so that they "can scarcely fail to attract the children."

After examining the various types of schools he returned to the subject to consider the positions of the "voluntary party" and those favouring state intervention. Mann's strong bias in favour of the latter quickly asserted itself when he referred to the voluntary party's reasons "by which they think their position is maintained. For the state interventionists rather different language was used. They relied on "certain prominent facts in everyday

1. Ibid., pp.xl-xl.i.
2. Ibid., pp.xli-xl.iii.
3. Ibid., pp-xliv-lxxix.
4. Ibid., p.lxxx.
experience" and "contended that our need is much too urgent for delay". State interference was justified since the results of poor education were "social injuries". Nor did interference mean the end of voluntary effort as experience in the United States showed. Mann then negotiated the differences between the various factions of interventionists in such a way as to imply that he was most likely in favour of local rates for secular teaching only.

In the final section of the report Mann committed himself to an archetypal statement of the contradictions which so frequently occurred in the statistical movement. He acknowledged that "it is not here that any opinion is to be expressed" yet felt that he might "be permitted to reiterate a doubt", that is, express an opinion. The form of this statement goes back to the foundation of the statistical movement in the early thirties. What Mann reiterated was not so much a doubt as a balancing of the polar moral view he had previously given vent to with an environmental theory which withdrew from the poor the blame for their failings. Mann "reluctantly allowed that they have only too much reason for their apathy" since they were forced to live in "impure and miserable homes". Mann was arguing that the good society in one aspect could not be created until the good society in all aspects existed.

1. Ibid., pp.lxxxiii-lxxxiv.
2. Ibid., pp.lxxxiv-lxxxviii.
3. Ibid., p.lxxxix.
That would not come about without "vigorous endeavour" to lessen "that social wretchedness which blights all educational promise". Thus the easy moralism of his earlier arguments was replaced by a characteristic tension between moralism and environmentalism leading to a summons to action to the wealthier classes to create the preconditions for a more moral world.

The 1851 education census was a backward-looking document in that its aims and philosophy were typical of the statistical movement of the 1830's and 1840's. Dr. J.R.B. Johnson has argued that the social conflicts of those years became less bitter in the fifties so that there occurred a loss of urgency in the campaign for elementary education. This may help to explain the lack of interest shown by contemporaries and historians in the education census. Until relatively recently a similar fate befell Mann's other masterpiece, the 1851 religious census. It was perhaps inevitable that historians would eventually turn to this source for the place of religion in Victorian society. The first to examine the 1851 religious census in some detail was K.S. Inglis and he has been followed by

1. Ibid., pp.lxxxix-xc.
2. Johnson, Thesis, pp.359-60. Also see his article "Educational Policy and Social Control in Early Victorian England", Past and Present, no.49, 1970, pp.96-119 wherein he finds the environmental-moral tension a clue to some of the social theories of the period.
The religious census of 1551 was unique. It was not repeated because of the ensuing conflict over its methodology and results, particularly the use of the index of church attendance as the measure of religious influence. This favoured the Nonconformists who wished any future census to be conducted on similar lines. But the supporters of the Church of England wanted a census of religious profession which would favour them. The simple resolution of this conflict was to drop the idea altogether.  

The idea itself was not new. For many years individual religious organizations had tried to claim for themselves larger congregations and a greater position than their rivals. Occasionally fuller surveys were conducted and published — for example, by the secretary of the Glasgow Church Building Society in 1836. The statisticians to some extent took the matter up, most notably at the British Association meeting in Newcastle in 1838 when tables were prepared following the presentation of the local education report. The Leeds municipal survey included statistics on church accommodation. There were also individual papers, such as those by Rev. Edgell

2. Inglis, op.cit., p.74.  
4. See JSSL, I, October 1838, p.379.
Edgell in 1838 and Rev. George Weight in 1840. But in general the statisticians shied away from the topic. Such reluctance was natural since the question was surrounded by controversy and ideological passions. Yet the statisticians wanted information—the extent of religious influences was part of the extent of moral influences. Hence the census committee of the Statistical Society of London proposed that the census in 1841 should include religious profession. The recommendation was not repeated by the 1850 census committee (which included Farr, Edgell, Porter, and Fletcher). In lieu of further evidence we must presume, therefore, that the idea was primarily due to Horace Mann.

His experience with the religious census paralleled that with the education census. Objections were made and it became voluntary. Afterwards, the results were attacked, particularly by the Bishop of Oxford. It is obvious that the religious census, even more than the education census, was fraught with considerable technical difficulties. The census was a combined one of attendance and accommodation. The latter was straightforward enough but the former was not. The day of the census was 30 March 1851, a day

2. JSSL, III, April 1840, p. 98.
associated with secular festivals in some parts of England, a day, too, when the weather may have been worse than usual. More serious was the fact that it was alleged that the Dissenters had packed their churches. Perhaps this may be ignored as mere prejudice but defects inherent in the census and in Mann's treatment of it cannot be dismissed so lightly. As Thompson points out, the returns say nothing about the social composition of the attendants. Moreover, the report fails to identify precisely some denominations while Thompson has found examples of duplicate returns. Added to this were arithmetical errors and a confusion of actual and average attendance. Even more alarming is the lack of differentiation between the general attendance and that of the children from the attached Sunday school since Mann assumes the returns were limited to the former. Finally, there was the problem of separating the number of attenders from the number of attendances. Many people attended more than once a day and Mann tried to allow for this by assuming that the number of attenders equalled the morning attendances plus half the afternoon attendances plus one third of the evening attendances. Thompson rightly argues that such a formula ignores local variations, particularly those associated with alternative patterns caused by a church not opening three times.

1. Inglis, p.76.
a day. It also altered the figures fundamentally in favour of the Church of England since it was the Anglicans who had most attendances in the morning but very few in the evening compared with the Dissenters. In any case, the division between Anglicanism and Dissent was not as rigid as the tables imply since there is evidence that many people simply went to whichever church happened to be open at a convenient time.¹

But, at least for the historian, the 1851 religious census was not a "useless experiment". The published figures are open to considerable suspicion: Thompson's work on six villages and towns in the Midlands shows that actual adult attendance at morning services ranged from forty-seven to sixty-four per cent of the published figures.² As a guide to the extent of religious observation in the mid-nineteenth century the published report therefore needs to be supplemented by research into the original schedules which remain, except for Thompson's limited survey, virgin soil.

Yet that in itself is significant for the collection of quantitative material of dubious value, processed in an inadequate fashion, was not an uncommon feature of the statistical movement. Mann's report was also typical in that he used it to express opinions. After a brief introduction he began with a twenty page religious history of England from the Druids and their "creed of mingled mystery and

1. Thompson, op.cit., pp.91-6.
2. Ibid., p.92.
terror" through to the Glorious Revolution.\textsuperscript{1} He then passed to the growth of the different churches and their beliefs. For the Church of England this was a story "displaying by what wonderful - almost unparalleled - achievements, in the way of self-extension, she has lately proved her inexhaustible vitality".\textsuperscript{2} That Mann was an Anglican is obvious, that he was liberally inclined was as quickly revealed. He avoided discussing the doctrines of Roman Catholicism at all but simply charted the growth of toleration.\textsuperscript{3} His descriptions of the sects were sympathetic (except for some of the more exotic growths such as the Catholic and Apostolic Church, the Latter Day Saints, and the Southcottians).\textsuperscript{4}

Mann's strong religious faith suffuses the whole report. The aim was to discover the numbers "destitute of spiritual teaching".\textsuperscript{5} We do not hesitate at the belief that all should receive education but it must also be understood that Mann was saying that all should be under some religious influences, that there should be enough accommodation to seat all who could be expected to attend at any one time. For Mann "the most important fact which this investigation as to attendance brings before us is, unquestionably, the alarming number of non-attendants".

This was a class issue:

1. 1851 Religious Census, pp.xi-xxx.
2. Ibid., p.xxxi.
3. Ibid., pp.c-ci.
4. Ibid., pp.xxxii-cxvii.
5. Ibid., p.viii.
the middle classes have augmented rather than diminished that devotional sentiment and strictness of attention to religious services by which, for several centuries, they have so eminently been distinguished."

Even the previously lax landed classes had been swayed by bourgeois ethics so that "regular church attendance is now ranked amongst the recognized proprieties of life". But what of the "labouring myriads" all too many of whom spent their lives in religious indifference if not worse? The middle classes could not ignore the perils of a situation where those "most in need of the restraints and consolations of religion are the classes which are most without them". 1

Mann put forward a number of reasons for the "alienation of the poor from religious institutions". One was the existence of class distinction in the churches and Mann argued that efforts should be made to overcome "the prejudices of the working classes" (note which class was prejudiced). 2 Mann thought little of the suggestion that one reason was the indifference of the churches to the social condition of the poor. 3 The third possibility was anti-clericalism, which might be overcome if the ministers were "less removed in station and pursuits" from the working classes. 4 The final reason often put forward was poverty "or rather, probably, ... certain conditions of life which seem to be inseparable from less than moderate incomes", the "vice and filth" of the poor's "degraded homes". This

1. Ibid., p.clviii.
2. Ibid., p.clix.
3. Ibid., pp.clix-clx.
4. Ibid., p.clx.
could be contrasted with the fact that some of the "religious character by which the English middle classes are distinguished is the consequence of their peculiar isolation in distinct and separate houses". As with education, therefore, so with religion, sanitary reform was needed for moral reform. But the moralistic argument was also present in Mann's theory that the main problem was a "genuine repugnance to religion itself". The poor were heathen. The only answer was missionary activity for a religious nation would not come about "until the dingy territories of this alienated nation are invaded by aggressive Christian agency". With education to refine taste and reveal the social realities and religion to control conscience and instil notions of duty then a society would be founded of "temperate, industrious, and provident" men. It was the recurring dream of the statistical movement.

1. Ibid.
2. Ibid., pp.clxi-clxii.
3. Ibid., p.clxviii.
Chapter XII.

Moral Statistics: Crime and Education.

The reality that the statisticians saw about them was moral degradation, a moral degradation that was most clearly expressed in the existence of crime. But that reality was inadequately translated into statistics since criminal statistics lacked accuracy and comprehensiveness. Throughout the period under review the statisticians tried to improve the official statistics. Within government the main activist was G.R. Porter who succeeded in getting the previously very brief returns for England and Wales drawn up "Upon a New and More Enlarged Plan" in 1835, a reform which was soon extended to the Scottish statistics. The returns were now classified according to county, offence, length of sentence, and sex of the offender. But Porter was not able to gain full control of the returns and their publication which remained with the Home Office. Nevertheless, he soon managed to get included in the returns a classification of the educational attainments of the criminals.

The last addition was a useful one in terms of the ideological concerns that we shall examine below but on a more practical level the returns remained very incomplete.

1. See Criminal Offenders (England and Wales), 1834; GBPP 1835 XLV.
2. See Criminal Offenders (England and Wales), 1835; GBPP 1836 XLI.
One recent writer on nineteenth century crime found that the statistics were of very little use to him.¹ He had good reason. Their most glaring defect is the fact that they cover only commitments for trial. Thus there was no way of deducing the number of offences. Yet the tables also included commitments for many minor offences confused with those for major crimes. In this way they fell between two stools, being neither a measure of all crime nor of serious crime but only of the number of persons apprehended for those offences where, in the confused state of English law, trial rather than summary conviction occurred.

The attack from the statisticians on these and other defects had begun even before the new tables were published. Samuel Greg told the Manchester Statistical Society that the old tables were totally unreliable except for the most violent crimes. Crimes against property, he said, were "positively infinitely greater" than the number recorded. One of his main criticisms was of the uselessness of the classification of offences and it was this objection, as well as the others, which was to recur.² Porter's new tables were divided into six types of crimes. First came offences against the person, then offences against property committed with violence (including sacrilege and sending menacing letters to extort money), then such offences without violence. The fourth group was "malicious offences against property (arson, riot, etc.), then forgery and

² App. Mins., f.104.
offences against the currency, and lastly came a miscellaneous collection of other offences. Henry Romilly, of the Manchester Statistical Society, wanted a change to a basic division between offences against the private person and against the public – but this led to just as much confusion in the details.¹

The most comprehensive early critique was that given by Arthur Symonds to the Statistical Society of London in December 1836. By that time there were available two years of the official tables supervised by Samuel Redgrave. It was Symonds's contention, a particularly telling one at the time, that if the tables were to get to the roots of crime then they must be classified in such a way as to show the different sorts of motives. Hence it was impossible to avoid theorizing. He ably demolished Redgrave's criminal nosology by pointing out that "offences against the person" and "other offences" both included sexual crimes. Symonds stated that robbery and sex crimes were different types of crime and if a murder should occur in the committing of either then it belonged to that offence and should not be removed to the category of murders. Redgrave's tables were set out according to objects and means rather than motives. Apart from this the exclusion of summary convictions was a fundamental fault. Symonds further argued that it was necessary to investigate the background of the juvenile offender and also the previous occupations of offenders.

since it would probably be shown that most had not received any regular occupational training. Even Redgrave's geographical divisions did not pass unscathed since it was desirable to show the locality of crime with more precision than was possible with a division into counties. Moreover, not only did Redgrave not include summary convictions but he did include acquittals in his totals.¹

Symonds' attack does not mean that the official statisticians were satisfied with the tables. Rawson Rawson included in the first volume of the Journal an abstract of the returns for 1837 in which he reprinted Redgrave's summary but added notes of his own which made the usual qualification about the number of offences as well as stating that the government tables were even more defective on the causes of crime and the description of criminals.²

The abstract was the prelude to a longer paper on criminal statistics which Rawson read to the British Association in 1839. Already the drift of thinking in the inner circles of the London society had been revealed by the report of a committee on forms drawn up for registering the "principal circumstances" of criminal offenders. One of the questions on education asked whether the criminal had been "Instructed or not in the Doctrine of future Rewards and Punishments". There were columns for the "inducement to commit the offence". One such inducement was gain - sub-

² JSSL, I, August 1838, pp.231-45.
divided into "from profligacy", "from distress", indulgence of sexual desire, malice, wantonness, and other possibilities. The "proximate causes" were assumed to be intoxication, "tempting opportunities", and all other causes.¹

The lean towards the moral attitude inherent in these forms was to some degree counterbalanced by Rawson's paper. It opened with a majestic vision of the operation of "fixed laws" which were applicable to "moral, no less than physical, phenomena".² The influence of Quetelet on the thinking of the British statisticians was nowhere stronger than in criminal statistics. Hence for Rawson it was the job of the statistician to find those laws or, at least, to discover "constant and uniform tendencies". But that was not easy with the British statistics.³ Rawson, therefore, took note of Symonds's paper and adopted his classification (with some minor modifications).⁴ He then analyzed the relationship between age, sex, locality, and crime.⁵ Rawson deduced the major factor in increasing crime was "the collection of large masses of the population in crowded cities" but declined to go further than this for lack of information.⁶ This unusual reticence was perhaps less a sign of scholarly caution than a result of Rawson's

3. Ibid., pp.318-21.
4. Ibid., p.323.
5. Ibid., pp.327-44.
6. Ibid., p.344.
decision to defer any consideration of the correlation of crime and education to a later paper.¹

Rawson's thesis that crime was connected with urbanization was capable of differing interpretations. That he himself was likely to favour a quasi-moralistic one is shown by his summary of some of the annual reports of Rev. John Clay, the prison chaplain at Preston.² Clay's statistics were designed to prove that over half of the inmates owed their conviction to drunkenness, while only seven per cent had pleaded "want" as the cause of their criminality. One fact that Clay and Rawson were emphatic about was that the factory system was a deterrent to crime since it involved ceaseless work under supervision. The proof was the high incidence of crime among the hand-loom weavers: thirty-one per cent of those convicted for a sentence of more than three years were weavers.³ Despite the fettered view consequent upon the social theories of the statisticians Clay's reports were interesting. Not infrequently attempts were made to use prison data to supplement the suspect official tables. One of the most valuable was a long essay on the bond population of Norfolk Island by a previous superintendent, Captain Maconochie.⁴

1. Ibid., p.333.
But the bulk of the controversy centred on Redgrave's tables. He himself usually wrote an introduction to the annual figures in which he analyzed the changing patterns of crime. He was always hoping for a decrease in crime and only too ready to find one. In 1839 he accepted that an increase in the number of commitments did not mean an increase in crime since it might be due to greater police efficiency or changes in the law but a decrease in commitments was seen as a real decrease in crime.¹ His approach, though limited, was competent enough. Over the years he argued that there were two types of crime: a mass of nearly constant or slowly-changing crime often committed by professional criminals, and a much more variable amount which fluctuated with the economic fortunes of the poor.² Yet he failed to reform the returns and was not capable of any searching analysis of them. He had never had any relevant training - he entered the Home Office at the age of fourteen and was primarily interested in art and architecture.³


2. Criminal Offenders (England and Wales). 1845, p.5; GBPP 1846 XXXIV.

3. DNB.
The most competent of the critics was, once again, F.G.P. Neison. He may have been drawn to the subject by a tediously unoriginal paper read to the London society in late 1845. At the British Association meeting in 1846 Neison submitted his own researches into the returns for 1842-4. The paper itself was quite short but about forty pages of tables were appended. Neison concentrated upon the significance of demographic factors in crime. Previous writers had tried to relate age and sex to crime but he was perhaps the first to recognize that demographic parameters had to be controlled in the analysis of any correlations. It was known that twenty to twenty-five year olds in particular, and the young in general, were more likely to commit crimes, and males committed five times as many crimes as females. Hence if other factors were to be investigated by comparing different areas then it was necessary to compare age-specific rates by sex rather than overall rates. From the age-specific rates Neison could deduce crime rate tables adjusted to a standard population (as was done with mortality rates) which made other comparisons possible. The counties were divided into groups of similar nature and then the relationship of various parameters studied. With this done it seemed that education

3. Ibid., pp. 223-8.
reduced crime.\(^1\)

Nelson delivered a second paper at the British Association in 1847 which dealt much more fully with the crime - education relationship.\(^2\) The marriage registers were used as a test of education. At first sight the figures were inconclusive but Nelson was satisfied from a division into above and below average for literacy and crime that even "the rudest elements of education ... tends to the repression of crime".\(^3\) Comparisons between counties supposedly similar in other respects confirmed Nelson's belief that it was possible "to reduce the amount of crime by the simple means of a good general education".\(^4\) In fact Nelson ignored his own dictum to allow for demographic variables (which perhaps mattered little for educational attainments among those past school age) and the tables he presented showed no great differences between counties of high or low literacy. But he wanted to see a difference for of all the ideological presuppositions of the statisticians the most deeply imbedded was a belief in the power of education to reduce crime. To think otherwise was a counsel of despair in the social turmoil of the fifteen to twenty years after the Reform Act.

\(^{1}\) Ibid., pp.233-7.
\(^{3}\) Ibid., pp.140-3.
\(^{4}\) Ibid., p.146.
The attitude predates 1832 of course. Even among the statisticians we find G.R. Porter, as early as 1829, writing that because the available returns showed an increase in the crimes against property and a decrease in those against the person then it followed that education must work more against the latter.  

1. This was nothing more than dogmatism and finds a Scottish parallel in the local sanitary report on Glasgow in 1842. Charles K. Baird acknowledged the paucity of data on Glaswegian education and the difficulty of comparing it with crime but was still able to profess that he had "not the slightest doubt that ignorance - the want of education - is a prevailing cause both of crime and destitution".  

2. Assertions of orthodoxy were more necessary by that stage for in 1833 consternation was aroused by a French work which was not only heretical but substantiated its heresy by statistical means.  

3. A.M. Guerry's book, with its shaded maps and histograms, was technically more advanced than any British work to that date but that could not excuse its theories. The apostasy may have been made even less bearable by Guerry's possible links with some of the statisticians. Even in 1834 Babbage introduced him to a wine and spirits dealer who allowed Guerry to stand behind the counter to observe the scene. Guerry was disappointed: he wanted "some place where the

2. Local Reports ... Scotland, p.186.
people could be seen disporting themselves in some riotous behaviour" and was sent off to Saffron Hill.  

In general the statisticians became obsessed with Guerry's little book. An indication of how extraordinarily sensitive they were is the treatment of a non-movement statistician at the 1840 British Association meeting. This was Joseph Bentley who had carried out a survey of education and crime in Worcestershire over a period of eight months with six agents. He presented his results in a paper but was interrupted by Lord Sandon (the chairman and past-president of the London society) who told him to stop wasting their time. Rawson said that Bentley's survey could not be reliable since the London society had employed men "of superior education and talents" and yet even they missed some schools. Bentley managed to continue despite further interjections. His paper was mentioned in the *Athenaeum* which stated he had tried to prove education was not a restraint on crime. Bentley had this corrected and the official report of the meeting summarized his paper without referring to the interruptions. The misunderstanding probably explains the unprecedented behaviour of Sandon and Rawson who had sat through much more dubious papers in the past. 

Certainly some of the more prominent statisticians were quick to pounce on Guerry. References to his work,

1. Drunkenness, Sel. Cttee. Mins. of Ev., p.199; GBPP 1834 VIII.
either direct or implied, are common for a number of years after 1833. To gauge the reaction of the mainstream of the statistical movement as well as its own researches we shall confine ourselves to four men: W.R. Greg, G.R. Porter, Rawson Rawson, and Joseph Fletcher. Greg was the first into the attack in 1833 but a more rounded paper was read to the British Association in 1835. In the latter Greg used Quetelet's writings to refute Guerry with the example of the Netherlands. Like Guerry's French data the statistics showed at first sight a direct, not inverse, relationship between the areas of high crime and high education. Greg was forced back to the observation that where there was the greatest quantity of education then crimes of violence were the least. The overall excess of crimes was due to crimes against property and other lesser crimes which were a concomitant of wealthy areas. But this was not to say that it was the educated who were the criminals since it could be "proved" that eighty-one per cent of crimes were committed by people with little or no education.¹

The last part of Greg's argument was developed by Porter who saw property crimes as "the consequences of civilization". Unlike Greg Porter did not take up Guerry's technique of using shaded maps to indicate the geographical distribution of social variables. But he took Guerry on more directly. Porter stated that Guerry's reliance on the figures for a single year (1831) had misled him. The

¹ W.R. Greg, Social Statistics of the Netherlands (Manchester, 1835).

figures for 1829-33 gave a different impression, particularly for offences against the person. Like Greg he reverted to the level of education of the criminals themselves (for which French statistics were available and provided the model for Porter's own reforms of the British returns). In the four most instructed departments he saw a clear advantage in favour of the educated. In any case Porter, like all the statisticians, thought the index only partially valid since "education" had such a limited meaning at the time. Much greater improvements could be expected when

"the most numerous class shall be taught to make a proper use of knowledge, by having impressed upon them a right understanding of all their relative and social duties".

Porter returned to his main themes when the Central Society of Education was in being since it was essential to that society's campaign that Guerry's notions should be crushed. The nature of the dilemma which faced Porter and kindred thinkers of the time were Guerry's theories allowed to be true was clearly put:

"To what purpose do we charge ourselves with the labour of imparting instruction to the ignorant, if we do not hope by that means to render them wiser and better, and therefore happier beings?"

Guerry had to be refuted or the faith of Lancaster and other educational reformers would be nothing more than "a benevolent dream". To show this was not so Porter

reiterated his critique of 1835. Porter's readers were reminded that education was more effective against crimes against the person, against "crimes which are committed with premeditation, than it is in producing a proper control over our bad passions and impulses". But this failure was not one of education per se but of existing modes of education. These were not directed, as good education would be, "to discipline the heart, and to form the character as well as to store the mind". Taking all the "facts" into account it was not possible "to entertain a doubt".

Porter's final paper on the subject was read to the British Association in 1847. Apart from the subject it is of significance for in it he gave a further example of the casuistry required to circumvent the restriction on "opinions". It was admitted that the statistical section was forbidden

"to enter upon the region of opinion and to discuss the merits of many among the various questions connected with social economy that from time to time are found to agitate the community. But it falls strictly within those rules to bring forward facts upon which, and upon which alone, those questions can safely be determined".

The bulk of the paper was directed towards yet another examination of the educational level of criminals. One novelty was a justification of the reliability of these

1. Ibid., p.323.
2. Ibid., p.325.
4. Ibid., p.316.
returns, which were made by the prison authorities, and usually checked by the chaplains.¹ Otherwise the paper repeated Porter's previous ideas, culminating in a description of those with unopened minds who were unable to realize that they had "everything to lose by swerving from the path of virtue".²

Not surprisingly Porter's opinions had been echoed by Rawson Rawson in 1840 when he continued the analysis of crime statistics he had begun the previous year.³ Like Porter Rawson made great play of the meaning of the term "education". This was not "mere instruction" but "that moral, combined with intellectual, training, by which the mind is taught to discern, and the heart is led to feel the great object for which man is created, and the duties which he is called upon to fulfil in this stage of his existence".⁴

It followed that the tests of instruction in the criminal returns, accurate though they may have been, were only a very partial test of education (which made it easier to infer from the figures more than they warranted). The criminal tables for 1836 onwards divided those committed into four groups - the illiterate, those who could read and write imperfectly, those who could read and write well, and those with "superior instruction". Since 1836 showed an exceptional proportion of the last group Rawson used

1. Ibid., pp.323-4.
2. Ibid., p.331.
4. Ibid., p.331.
the figures for 1837-9 - a clear example of excluding inconveniently unfavourable data.¹ Ninety per cent of the convicts fell into the first two classes and could be presumed to have had no education with "any good influence on their minds". Even the third group had dubiously had an education "as would serve to dispel the darkness of ignorance, and enable them to acquire a control over their thoughts and actions". That left four out of every thousand criminals whom education had failed to deter.²

Rawson stated that there must have been a greater number of educated people than this in the population at large. It could not be argued that this was because the educated were the wealthy for Clay's reports had shown that want was relatively unimportant as a cause of crime. While the poor would always exist at least a population of educated poor would not live in a state which "debases their minds" and "destroys their sense of right and wrong".³ Rawson was moving into a sermon which though it sounded intensely moralistic was strongly environmentalist. He thought it was a vain hope and a sign of short-sightedness when the law "expects and claims orderly habits and decent conduct" from people "bred up in the darkest ignorance, debased by the vilest associations, and exposed to the most bitter trials and temptations".⁴ It followed that the cause of the increase of crime would be "found in circumstances connected with the social, rather than with the

1. Ibid., p.333.
2. Ibid., p.334.
3. Ibid., pp.334-6.
4. Ibid., p.351.
moral, condition of communities". Here, then, was the complement of sanitary reform, the other answer to the failure to create a moral and peaceful community. "Improvement" was a Janus figure facing to the sewers and houses in one direction and to the schools in the other.

To the schools in particular for the last and most prolific of our statisticians, Joseph Fletcher. In the late 1840's Fletcher dominated the statistical writings on the relation of crime and education with long essays which were included in his official reports as an inspector of schools. He also delivered papers to the British Association and, as editor of the London society's Journal, had his major works printed in it to ensure the widest possible audience. Fletcher's first writings, however, were in his capacity as secretary to the handloom weavers' commission. He wrote the report on the ribbon-weavers of the Midlands. Fletcher thought that the city weavers were not too morally degraded except that they did not realize the value of "self-cultivation". Many of the more active young men were regrettably attracted to "the strange theoretical confusion of all the relations of civil life, commonly called 'socialism', with its community of property and exchange of women". But Fletcher found it difficult to convey the life of debasement and immorality led by the country weavers.

1. Ibid., p.352.
3. Ibid., pp.75-82.
A large part of the remedy was, of course, education. Guerry's "counter-proposition involved the absurdity that knowledge of truth is the way to error". 1 Fletcher saw the choice before society as one between good and bad education; it was vital to understand that education should be regarded as the totality of environmental influences at work on the individual "industrial, instructional, political, or domestic". 2 Fletcher wrote a hymn to the possibilities opened up by the Industrial Revolution with a warning of its dangers. In a society no longer composed of "scattered peasants and walled-up burgesses" it was necessary to have a "far higher intelligence" disseminated among the masses since this was "essential to their own welfare and to the peace of society". In a mass society where the ignorant and depraved could be combined "political riots are rapidly becoming national instead of local". Therefore it was "time to substitute sound information" for socialism which was "the rising political philosophy of the masses". Proper secular and religious education would achieve two objectives. Firstly, "the iron-arms of our steam-engines" and "the iron wings of commerce" would mean that "the public peace is secured, and our prosperity and advancement will probably be carried beyond all earthly precedent". Secondly, a society of "good labourers, good fathers, good subjects", "respectable and respected" would emerge. 3

1. Ibid., p.170.
2. Ibid., p.171.
3. Ibid., pp.172-84.
This is the authentic voice of the statistical movement giving full expression to the ideology of improvement.

Despite this early evidence of Fletcher's strong belief in the power of education to create a moral and tranquil society his experience in the government inquiry into the employment of children, particularly in the mines, seems to have aroused some temporary doubts. In 1843 he wrote a paper on crime in Britain in which he strongly argued that criminals were no more ignorant than the population from which they were drawn. That population, the poor, was subject to

"a thousand deteriorating influences, in the places of their abode, their pursuits, their companionship, their want of domestic discipline, and their neglected social position, sufficient to produce far more evil than is usually laid to their want of schooling".

It was these which caused the increase of crime rather than the always present ignorance of the masses. Fletcher's loss of faith was not long-lived. He became an inspector of schools shortly afterwards and this seems to have restored it.

The restoration was complete by 1847 when he read a long paper on the relationship of education to other social parameters to the British Association (part of which was published in his annual report as an inspector of schools). As this paper is a harbinger of the much more detailed studies he produced two years later we shall omit reference

to it here except to note that Fletcher was satisfied that he had demonstrated that "greater diffusion of instruction is seen to be the concomitant of every promising figure". In a paper read to the British Association the following year he traversed some of the same ground but also tried to explain the paradox that in some areas the criminal population appeared to be better educated than the population at large. He resolved the paradox, in his own eyes anyway, by arguing that the quality of instruction varied greatly. Therefore, the education index used (the signing of the marriage registers) could not always show a "careful uprearing of the young ... that is alone blessed to the good end of righteous living in a Christian hope".

The partial rejection of an index used happily when it satisfies the needs of dogma is not something confined to the social statisticians of the 1830's and 1840's. But it was an especially strong tendency at that time and it is important to understand when and where it took place. Fletcher in the late 1840's was trying to marshal a massive amount of data to prove the social utility of education as the producer of a Christian and stable community dominated by a humanitarian form of the middle-class value system. The culmination of his work was a paper read to the Statistical Society of London in March 1849 at a meeting attended by Prince Albert. With its tables the

printed version ran to over 170 pages of the *Journal.*

A later version of the paper was published in the Education Committee minutes for 1850. We shall refer to the *Journal* article as the most readily accessible source. In both versions Fletcher presented a number of tables of social indices accompanied by shaded maps showing the variation in each index in England and Wales. The first of these was the density of the population in 1841. As with all the indices the basic unit was the county and the figures were expressed in terms of the percentage deviation from the average (thus Westmorland was seventy-three percent below the average density, Lancashire 243 per cent above). Next came the proportion of real property in 1842 (from the income tax returns), the proportion of persons of independent means (from the 1841 Census), and the index of ignorance (as shown by male signatures by marks in the marriage registers in 1844). These four formed the indices of "moral influences" (concentration of population, wealth, and education - the first bad, the last two good). They were complemented by the indices of moral results: gross criminal commitments of males for 1842-7, commitments for the more serious offences against the person and against property for 1842-7, commitments for non-malicious offences against property for 1842-7, commitments for assaults and miscellaneous offences for 1842-7, the propor-

2. MPCCE, 1848-50, II, pp.301-83.
tion of males marrying under the age of twenty-one in 1844-5, the illegitimacy rates for 1842 and 1845, pauperism for the quarter ending Lady Day 1844, and deposits in savings banks in 1844. The crime statistics were adjusted to a standard population.1

After a defence of the statistical approach the first part of the paper consisted largely of a description of the indices and a survey of the advance of crime. While the latter was partly seen as a result of economic fluctuations the division into counties suggested to Fletcher that the problem was the by now familiar one of an advance "in material civilization" unmatched by "a proportionate moral advancement". The worst results occurred in a depression "amidst those classes whose moral ties to the existing framework of society are feeblest and least felt or understood". The possibility was that the poor would turn to socialism or the like which denied "the most cherished axioms of political science, or even the words of Christian truth itself". Laissez-faire was no answer "for it is evil that is marching upon us from among them with gigantic strides". Therefore local action encouraged by the state had to take place in the fields of education, law and order, charity, and sanitary reform. Fletcher's "us" was made more explicit when he recommended the reform of parts of the judiciary to bring in "men of middle-class intelligence".2

The liberal nature of this philosophy was made clearer

1. Ibid., pp.236-45.
2. Ibid., pp.171-2.
when Fletcher condemned the early resort to the use of penal institutions. Most of the second part of the paper, however, was given over to an explanation of crime. His first conclusion was that there was a rough correspondence between high density and high crime, but the geographical breakdown satisfactorily exonerated the factory system since the greatest excess of crime was in areas of home and workshop industry. The same kind of deduction was screwed out of the *prima facie* unfavourable coincidence of an excess of real property and an excess of crime. The former supposedly showed the prevalence of large-scale agriculture which, like large-scale industry, required a "higher moral development" of the people which had not yet taken place. Presumably if an excess of crime had been found in the factory areas this argument could have been used again.

The same dexterity was needed to explain the frequent coincidence of a high degree of instruction with excess crime. Fletcher became almost incompressible in his valiant attempt to reconcile dogma and observation. There were eight groups of counties (by economic type) which were further sub-divided into "most instructed" and "least instructed". Each of these was also divided into most and least instructed. The upshot of this display of statistical juggling was the following statement:

1. Ibid., pp.189-90.
2. Ibid., pp.191-2.
3. Ibid., pp.192-3.
"Omitting, then, the column of the most instructed counties of the most instructed districts, every comparison of the other three columns of Table I, even on the gross results of the criminal calendars, is markedly in favour always of the localities of superior instruction, except in the comparison of the less and more instructed counties of the least instructed districts, in which there is a balance on the opposite side, arising partly, out of the like town influences, which are yet more markedly felt when the Metropolis is included, and partly from their comprising a considerable non-manufacturing population of relatively higher instruction, together with a large scattered manufacturing population of the lowest character".  

Despite this kind of verbal obfuscation Fletcher was making the not unreasonable point that towns, particularly London, could have a high native level of instruction yet attract a criminal population from outside - resulting in high crime rates. Fletcher, therefore, favoured as an alternative index the number of more serious crimes though, murder apart, it is not easy to see how he could justify the statement that these were "less migratory". It required a further leap of faith to believe that the evidence "proves the influence antagonist to crime arising from the education generally associated with instruction, even measured by its lowest tests, in this country".  

Fletcher went on to study the different types of crime. The general drift of his analysis was to insist upon the use of violent crimes as the index of moral failure (because none of the other categories fitted the theory).  

But Fletcher recognized that the crime statistics  

1. Ibid., p. 200.  
were not conclusive and included other indices of moral failure. "Improvident marriages" were directly related to ignorance. The illegitimacy rate was another sign of "rude incontinence". Fletcher thought that this was inversely related to his early marriage index. Illegitimacy was still positively correlated with ignorance but the significant relationship was early marriage and illegitimacy combined (as alternative varieties of the same moral failure) being proportional to ignorance. With some twisting of the data Fletcher was able to discern an ignorance-pauperism correlation. Also associated with education was the size of deposits in the savings banks (particularly if the number of persons of independent means was taken in conjunction with education).

Fletcher's paper was in many ways a splendid culmination of the statistical exercises to prove the value of education and had itself sprung from dissatisfaction with the papers of WhitworthRussell and Neison. Fletcher did not want to leave the essential conclusion resting insecurely on the educational level of the criminals. Yet his own paper was also seriously flawed by the need to fit the data to the theory. Unusually, however, his conclusions were in a form amenable to testing by more modern techniques.

We shall beg the question of the validity of the indices

1. Ibid., pp.219-21.
2. Ibid., pp.221-4.
4. Ibid., p.227.
5. Ibid., p.229.
6. Ibid., pp.230-1.
for the moment, for that is irrelevant in the sense that Fletcher was prepared to use them if they backed his case.

Six of Fletcher's correlations have been calculated: the supposed positive correlations between ignorance and the more serious crimes, between these crimes and the excess of real property, between ignorance and improvident marriages, ignorance and illegitimacy, ignorance and improvident marriages and illegitimacy combined, and the claimed negative correlation between ignorance and the number of persons of independent means. The percentage deviation by county from the national mean of each of these variables is given in Table 12.1.¹

Of the five correlations three are significant at the .01 level: ignorance against the more serious crimes ($r = .46$), ignorance and improvident marriages ($r = .53$), and ignorance and the number of persons of independent means ($r = -.60$). But this is "significance" only in the statistical sense. Correlations of the order of .5 leave a wide unexplained variance in the indices and are nearly useless for predictive purposes. There was some relationship, therefore, between education and crime and early marriages. The likely explanation is not that education reduced these but that all three were related to some other factor of a very broad nature. The correlations between crime and the amount of real property ($r = .02$) and ignorance and illegitimacy ($r = .04$) showed that there

¹ The source for the statistics is MPCCE, 1848-9-50, II, pp.341-2; GBPP 1850 XLIV.
Table 12.1: Some social parameters of the counties of England and Wales in the 1840's (all figures percentage deviations from the national mean).

<table>
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<th>County</th>
<th>Ignorance</th>
<th>More serious crimes</th>
<th>Real property</th>
<th>Improv. of land</th>
<th>Illegitimacy</th>
<th>Persons</th>
<th>Persons</th>
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</table>

Note: Yorkshire is divided into the three Ridings, while the Welsh counties are amalgamated into two groups.
was no relationship at all between these variables. In particular, the argument that illegitimacy and improvident marriages were alternative consequences of insufficient education collapses.

We must be at least as sceptical about the indices themselves. Even admitting that they were the best available Fletcher cannot be cleared from the charge of imposing a preconceived theory on the data. He had to prove that education would reduce crime, early marriages, and illegitimacy.

Fletcher and the other statisticians had disguised propaganda as facts. The purpose of education was revealed as the conversion of one class to the value system of another. Even Chadwick, before he became obsessed by the sanitary idea, had thought of education as of fundamental importance since the pauper children who had been educated were supposed to have become self-reliant while the uneducated "were continually burthensome and became, drunkards, prostitutes or thieves".1 Within this argument on the necessity of education the tension between environmentalism and moralism manifested itself strongly. Chadwick's statement implies an environmentalistic attitude not usually associated with him as early as 1834. The possibilities of slipping into a crude form of moralism were demonstrated

1. Drunkenness. Sel. Cttee. Mins. of Ev., p.34; GBPP 1834 VIII.
by E.C. Tufnell's assertion that "circumstances are far more dependent on character than character on circumstances".\footnote{Local Reports ... England and Wales, p. 56.} Still, Tufnell saw an answer in education but clearly the belief could easily dominate that saw poverty solely in terms of moral failure generating no sympathy and charity only of the most disciplinarian kind. In our period the statisticians managed to preserve the fragile balance.

But poverty was not the main factor in the drive for educational reform. Even crime was only a symptom of a far deeper malaise that the statisticians and like-minded reformers discerned in society. Social discontent was at a peak in the 1830's and 1840's. The world of the middle and upper classes was threatened, in Seymour Tremenheere's phrase, by "anarchical, Socialist, and infidel forces".\footnote{Report on Mining Districts, p. 28; GBPP 1850 XXIII.} Within the constraints set by their ideological preconceptions the statisticians had to account for the breakdown of social harmony. It could not be due to the factory system: it was axiomatic that that was beneficial even if some aspects, such as child-labour, could be changed. It might be true that much was due to the inferior moral character of the lower classes themselves but that was not very helpful: moral condemnation could not prevent revolution. Means had to be found to improve their character. Means had also to be found to explain to them the unalterable nature of certain social relationships and heirarchies.
Otherwise the ignorant would be led into social disruption by agitators.

Hence education. Especially in the sense that the statisticians and the other educational activists understood it as a combination of physical, moral, and intellectual instruction. Apart from the schools the agents of such instruction were the town libraries, the "useful knowledge" purveyors, the town museums, the literary and philosophical institutes, and the botanical gardens.¹

The result James Phillips Kay envisaged as

"the rearing of hardy and intelligent working men, whose character and habits shall afford the largest amount of security to the property and order of the community".²

Or, as Frederic Hill put it, education was "the best guarantee for public tranquillity and the rights of property".³

Education was only part of the answer. Equal stress, particularly in the 1840's, was laid by the statisticians on the physically and morally degrading effects of the physical environment. The failure to create a satisfactory urban environment became increasingly apparent. The Chadwickian group carried their case to extremes as shown when Lyon Playfair stated that the great extent of ignorance and crime was "essentially connected with the exposure to

bodily disease". Within the statistical movement education and sanitary reform were more normally seen as complementary parts of the same programme. Surveys of the condition of the working classes and of the state of education went hand in hand. The surveys would reveal "the circumstances by which [the working classes] are surrounded, and the effects which they are calculated to produce upon them, both morally and physically".

The statistical societies were formed to prosecute these inquiries. Rawson Rawson specifically acknowledged that "Benevolent individuals are united in numerous societies for the purpose of inquiring accurately into the state of the poor". It quickly became a cliche of the movement that the surveys were a necessary preliminary to action. The fourth annual report of the Statistical Society of London welcomed what it thought was the growing recognition that "statistical data must constitute the raw material for all true systems of economy and legislation, local and national". Yet it was a theory that masked the true intention. Time and again the statisticians embarked upon surveys the major conclusions of which were anticipated and preconceived. Nor was it really necessary, for example, to know the exact difference between

the number of children at dame schools in Manchester and Liverpool before it was possible to legislate for government aid. Much of the information that was gathered was quite useless (such as the numbers who could "sing a cheerful song"). The real purpose of the inquiries was to reveal to the public by means of "facts" the condition of the population.

For two reasons these facts were in quantitative form. Partly it was because "statistics" were understood to mean the study of the actual condition of the population. "Statistics" also implied some use of quantification. Perhaps more important was the notion that numbers were truly facts, or at least could be presented as if they were. The most significant occurrence in this context was the foundation of the statistical section of the British Association with its confinement to numbers and "mere abstractions" to avoid the appearance of introducing the "foul Daemon of discord". Moreover, the time seemed ripe for a concerted push for reform backed by a mass of incontrovertible evidence. The passage of the Reform Bill, following close on the removal of some of the disabilities placed upon the Dissenters, opened up the vision of reforming men of "middle-class intelligence" (in Fletcher's phrase) coming to power. Whether or not this was a realistic appraisal of the post-1832 situation the statisticians were preaching to the wealthier classes and trying to convert them to specific programmes of reform "to prevent
misfortune and vice, sickness and improvidence".\textsuperscript{1} Rawson Rawson summed up the aims and methods of the movement in 1838 when he saw the Journal as "an important instrument for developing and diffusing the knowledge of truth, and for detecting and removing error and prejudice".\textsuperscript{2} When they had been removed, from all classes, then that hierarchical society with a working class of "good labourers, good fathers, and good subjects" which Fletcher foresaw would come into existence on the tide of voluntary and legislative action for the improvement of the lower classes.

\textsuperscript{1} G.R. Porter, "Results of an Enquiry into the Condition of the Labouring Classes in the Five Parishes in the County of Norfolk", Third Publication of the Central Society of Education, 1839, p.370.

\textsuperscript{2} JSSL, 1, May 1838, pp.1-2.
Appendix I: The Select Committee on Parochial Registration of 1833.

<table>
<thead>
<tr>
<th>Name</th>
<th>Party allegiance</th>
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<td>A</td>
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<tr>
<td>John Wilks</td>
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<tr>
<td>Sir John Campbell</td>
<td>Whig</td>
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<tr>
<td>Alderman Matthew Wood</td>
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<tr>
<td>Edward J. Stanley</td>
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<td>Sir George Grey</td>
<td>Whig</td>
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<tr>
<td>Jasper Parrott</td>
<td>Whig</td>
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<tr>
<td>Thomas Barrett Lennard</td>
<td>Whig</td>
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</table>

Added 3 April 1833:
- Earl of Kerry: Liberal, Reformer
- John Fenton: Whig

Added 19 June 1833:
- J.W. Childers: Liberal, Reformer

Sources:


Appendix II.
Supplementary Note, March 1971.

Since Chapter I was typed Professor D.V. Glass has discovered John Rickman's memorandum of 1796 proposing a census. It was printed, with additional footnotes, in the Commercial and Agricultural Magazine, II, June 1800, pp.391-9. In it Rickman argued in general terms in favour of a census which would provide accurate information to inform governmental action. But Rickman was clearly influenced by the war with France since "In every war, particularly a defensive war, it must be of the highest importance to enrol and discipline the greatest possible number of men". Moreover, a census would show "the number of consumers" thus allowing an accurate computation of the country's grain requirements. Hence exports and imports could be varied in order to avoid wide fluctuations in grain prices. Rickman thought that the census would demonstrate a great increase in the size of the population, an increase which "would be the most consoling gratification to every lover of his country". This sign of general prosperity plus the government's concern for the public good, evidenced by the census itself, might end the "fear of more general disaffection" resulting from "the attempts of certain obscure individuals" to create unrest.

The bulk of Rickman's arguments can thus be seen to be rooted in the confused and dangerous internal and external situation of the mid-1790's: popular discontent,
often associated with high food prices, and war with revolutionary France. The memorandum's date of publication, June 1800, is interesting in that Charles Abbot moved the Population Bill only five months later. However, the bad (and crucial) harvest of 1800 separates the two events. Moreover, Rickman's scheme was neither that originally proposed by Abbot nor that incorporated in the ensuing Act. Rickman's idea was to take a national account of the baptisms, burials, and marriages in the parochial registers. In certain isolated parishes, where migration was minimal, the number of burials was to be compared with the population. Hence a multiplier would be derived which could then be applied to the national total of burials. Clearly this method would have been very inaccurate. Abbot, wisely, proposed a census of population based on estimates made by the parochial clergy. First the Scottish, then the English, clergy objected so that responsibility was transferred to the poor law officials in England and the schoolmasters in Scotland (Abbot had contemplated dropping the Scottish census altogether). 1

Therefore, Rickman's memorandum is of interest and value but does not prove that the census of 1800 can be ascribed directly to his influence or arguments. The basic reason for the census was not Rickman's memorandum,

nor Malthus's treatise, but the Malthusian crisis of 1800. Abbot explained to Pitt that the census might have "ulterior uses in matters of War and Finance", but its main aim was to "show the extent of the demand for which a supply was to be made". Consequently, the most significant section of Rickman's memorandum is that in which he refers to this particular issue.

One other addition to the text may be made. Since Chapter II was typed I have been able to consult the Ellenborough papers in the Public Record Office. These shed some further light on the passage of the Civil Registration Act of 1836. Ellenborough's insertion of the cause of death in the schedules was a mystery at the time as well as later. Melbourne remarked that

"The alteration of the Schedule savours rather of the statistical coxcombery which you condemned upon the second reading - It will rather embarrass the working of the bill and render it complicated in the first instance - however I've no great objection to it".2

Ellenborough had in fact long taken an interest in the measure. In December 1834 he wrote a memo on the Marriage Bill suggesting that the new poor law would provide a possible administration for keeping the registers.3 But he never at any stage before 21 July 1836, as Melbourne implies, showed any support for the insertion of the cause

1. Ibid., pp.209-10.
2. ERO. 30/12/6/2, Melbourne to Ellenborough, 21 July 1836.
3. ERO. 30/12/24/1, Memo on the Marriage Bill, 26 December 1834.
of death. In his notes made six days earlier for his speech his main concern had been to get the superintendent-registrars appointed by the Boards of Guardians.\(^1\)

The same day Chadwick wrote to him. His letter does not mention the cause of death. As with his 3 July letter to Russell he was primarily interested in the administrative questions. One possibility which struck Chadwick at that time was the use of the collectors of poor rates as registrars.\(^2\) The next day Wakley attacked Chadwick over the poor law medical relief officers, five days later Ellenborough moved the amendment at Chadwick’s suggestion, and within a few weeks Chadwick was trying to persuade the officers (not the collectors) to act as registrars. Thus the new evidence seems to strengthen the hypothesis put forward earlier.

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1. There are various notes for this speech in ERO. 30/12/6/2.
2. ERO. 30/12/6/6, Chadwick to Ellenborough, 15 July 1836.
Select Bibliography.

I. PRIMARY

A. Manuscript

a. Official

In the General Register Office:

History of the Census of 1841 (due to be transferred to the Public Record Office).

In the Leeds Town Clerk's Record Office, Committees' Strongroom:

Minute Book of the Town Council, vols. IV, V.

Minute Book of the Town Council Statistical Committee, 1837-41.

In the Public Record Office:

Adm.105/70, 71, 72. Reports, etc., of the Physician-General, 1832-9.
Adm.133/4, 5 (IND 7729, 7730). Digest and index of letters received, 1835-7.

B.T.24/1. Out-letters of the Statistical Department, 1832-8.

H.0.39/4. Letters from the General Register Office.
H.0.44/29. Miscellaneous correspondence, 1836.
H.0.44/49. Miscellaneous correspondence, 1831-7.

M.H.7/1. Minutes of the Health of Towns Commission, 1843-5.

b. Collections of papers, etc.

In the Belgian National Centre for the History of the Sciences (Royal Library of Belgium, Brussels):

Quetelet papers.
In the British Library of Political and Economic Science:

Farr papers.
Potter papers.

In the British Museum:

Peel papers. Add.Mss.40333, 40407, 40409, 40417, 40419, 40420.

In the Guildhall Library:

Minutes of the Protestant Dissenting Deputies, vol. VIII. Ms.3085.
Minutes of the United Committee on Protestant Grievances. Mss.3086/1, 2.

In the Leeds Central Library:

Thomas Wilson papers, Mss. DB 178/22,23,28.

In the Manchester Central Library:

Appendix to the Minutes of the Manchester Statistical Society.

In the Monmouthshire County Record Office, Newport:

Tulloch papers, Box D.460.

In the National Library of Scotland:

Autobiography of John Drinkwater Bethune, Ms.1835.

In the Public Record Office:

Russell papers.
In the Royal Statistical Society Library:

Diary of John Elliot Drinkwater, 1833-4
(minutes of the Statistical Section of the British Association).

Minutes of the Statistical Society of London, 1834-52.


In the Library of University College, London:

Bentham papers.
Chadwick papers.

In the Library of the University of London:

Nassau William Senior's account of the conferences on the Poor Law Amendment Act of 1834.
Ms.173.

B. Published

a. Official

Administration, etc.

Official Salaries. Sel.Cttee.; GBPP 1850 XV.

Official Statistics. Sel.Cttee.; GBPP 1881 XXX.

Public Documents. Sel.Cttee.; GBPP 1833 XII.

Public Offices. R. Comms.; GBPP 1854 XXVII.

Return of the Number and Description of the Existing Commissions of Inquiry; GBPP 1834 XLI.

Return of all Commissions issued since 1830;
GBPP 1837-8 XXXVI.

Return of all Commissions issued or appointed since 1st May 1838, and of the Number and Titles of the former Commissions now in operation;
GBPP 1842 XXVI.
Return of the Commissions issued or appointed since 1842; GBPP 1846 XXV.

Agriculture and Industry.

Agriculture. Sel. Cttee.; GBPP 1833 V.

Children Employed in Manufactories. Sel. Cttee.; GBPP 1816 III.


Cotton and Woollen Factories. Return; GBPP 1836 XLV.

Employment of Children in Factories. R. Comm. First Rep.; GBPP 1833 XX.

Second Rep.; GBPP 1833 XXI.


Employment in Manufacturing Districts. Sel. Cttee.; GBPP 1830 X.

Factories Bill. Sel.Cttee.; GBPP 1831-2 XV.

Factories. Inspectors' Reports, 1834-50.

Factories. A Return of the Total Number of Persons Employed, etc.; GBPP 1847 XLVI.

Factories. Returns; GBPP 1839 XLII.

Factories. Returns, Numbers visited by Inspectors, etc.; GBPP 1839 XLII.

Factories. Returns of the Numbers, etc.; GBPP 1850 XLII.

Factories Act. Educational Provisions. Returns; GBPP 1839 XLII.

Factories. Children. Returns; GBPP 1836 XLV.
Factories, Power Looms. Returns; GBPP 1836 XL.V.

Factory Children. Heights, etc. Returns; GBPP 1837 L.

Mills and Factories. Sel.Cttee.; GBPP 1840 X.

Reports of Special Assistant Poor Law Commis-sioners on the Employment of Women and Children in Agriculture; GBPP 1843 XII.

Special Reports by the Inspectors of Factories on Accidents; GBPP 1841 X.

Army and Navy.

Barracks (Bahamas, etc.); GBPP 1840 XXXIV.

Mortality in the Army; GBPP 1850 XXXV.

Statistical Reports on the Health of the Navy for the Years 1830 to 1836. Pt.I; GBPP 1840 XXX.

-----. Pt.II; GBPP 1841 Sess. 2 VI.

Statistical Reports on the Health of the Navy for the Years 1837 to 1843. Pt.I; GBPP 1849 XXXII.

-----. Pt.II; GBPP 1852-3 LXI.

-----. Pt.III; GBPP 1854 LXVIII.

Statistical Report on the Sickness, Mortality, and Invaliding among the Troops in the West Indies; GBPP 1837-8 XL.

----- in the United Kingdom, the Mediterranean, and British America; GBPP 1839 XVI.

----- in Western Africa, St. Helena, The Cape of Good Hope, and the Mauritius; GBPP 1840 XXX.

----- in Ceylon, the Tenasserim Provinces, and the Burmese Empire; GBPP 1842 XXVII.
Civil Registration.

Annual Reports of the Registrar-General of Births, Deaths, and Marriages in England and Wales, 1838-51.

Medical Poor Relief, Sel.Ctte.; GBPP 1844 IX.


Parochial Registration, Sel.Ctte.; GBPP 1833 XIV.

Press Clippings. Collection in the General Register Office (CZ1.1).

Registrar-General of Births, etc., Office; GBPP 1847 XXXIV.

Regulations for the Duties of Registrars of Births and Deaths and Deputy Registrars, January 1838. In the General Register Office (M.11.2(1)).

Regulations for the Duties of Superintendent Registrars, January 1838. In the General Register Office (M.92.10 and M.11.2(1)).

Crime, etc.

Criminal Commitments and Convictions in England and Wales, Sel.Ctte. First Rep.; GBPP 1826-7 VI.

----. Second Rep.; GBPP 1828 VI.

Criminal Offenders (England and Wales). Annual Tables, 1834-51.

Criminal Offenders (Scotland). Annual Tables, 1835-51.

Drunkenness. Sel.Ctte.; GBPP 1834 III.

Police of the Metropolis. Sel.Ctte.; GBPP 1828 VI.
Education.

Abstract of the Answers and Returns Relative to the State of Education in England and Wales; GBPP 1835 XLI, XLII, XLIII.

Education. Sel.Cttee.; GBPP 1834 IX.

Education (England). Sel.Cttee.; GBPP 1835 VII.

Education of the Lower Orders of the Metropolis. Sel.Cttee.; GBPP 1816 IV.

-----. GBPP 1817 III.

Education of the Lower Orders. Sel.Cttee.; GBPP 1818 IV.

Education of the Poorer Classes in England and Wales. Sel.Cttee.; GBPP 1837-8 VII.

Education (Manchester and Salford). Sel.Cttee.; GBPP 1852-3 XXIV.

Education. Papers; GBPP 1839 XLI.

Minutes of the Privy Council Committee on Education, 1839-51.

Health of Towns and Condition of the Working Classes.

Annual Reports of the Poor Law Commissioners for England and Wales, 1834-47.

Condition of the Poorer Classes. R.Comm.; GBPP 1835 XXXII.

Doctrine of Contagion in the Plague. Sel.Cttee.; GBPP 1819 II.

Hand-Loom Weavers. R.Comm. Copy of Instructions to Assistant Commissioners; GBPP 1837-8 XLV.


-----. Pt.II; GBPP 1840 XXIII.

-----. Pt.III; GBPP 1840 XXIV.

Health of Towns. Sel.Cttee.; GBPP 1840 XI.
Improvement of the Health of the Metropolis. R. Comm.; GBPP 1847-8 XXXII.

Improvement of the Health of Towns. Sel. Cttee.; GBPP 1842 X.


State of Large Towns and Populous Districts. R. Comm. First Rep.; GBPP 1844 XVII.

Second Rep.; GBPP 1845 XVIII.


Vital Statistics.

Bill for Taking an Account of the Population of Great Britain. Sel. Cttee.; GBPP 1830 IV.

Emigration, Scotland. Sel. Cttee.; GBPP 1841 VI.

Population. Census of 1801. Abstract; GBPP 1801-2 VI.

Parish Registers; GBPP 1801-2 VII.

Population. Census of 1811. Abstract; GBPP 1812 XI.

Population. Census of 1821. Abstract; GBPP 1822 XV.

Population. Census of 1831. Abstract; GBPP 1833 XXXVI, XXXVII, XXXVIII.

Population. Census of 1841; GBPP 1843 XXII, XXIII.

GBPP 1844 XXVIII.
Population. Census of 1851. Tables; GBPP 1851 XLIII.

----- Forms and Instructions; GBPP 1851 XLIII.

-----; GBPP 1852-3 LXXXVI - XC.

-----; GBPP 1854 LIX.

Census of England and Wales. Returns of expenses, etc., for 1841-61; GBPP 1863 XXIX.

Miscellaneous.

Annual Tables of the Revenue, Population, Commerce, etc., of the United Kingdom and its Dependencies, 1833-51.

b. Newspapers, periodicals, etc.

Athenaeum.

Bristol Statistical Society, Proceedings, 1836-41.

British Almanac and Companion to the Almanac.

British Annals of Medicine, Pharmacy, Vital Statistics, and General Science.

British Association for the Advancement of Science, Reports and Transactions.

British Critic, Quarterly Theological Review, and Ecclesiastical Record.

Central Society of Education, First, Second, and Third Publications.

Church of England Quarterly Review.

Christian Observer.

Christian Reformer.

Congregational Magazine.

Correspondence Mathematique et Physique.

Dissenters' Magazine for Yorkshire and Lancashire.
Eclectic Review.
Edinburgh Medical and Surgical Journal.
English Presbyterian.
Gentleman's Magazine.
Glasgow and Clydesdale Statistical Society, Transactions.
Hansard.
Lancet.
Leeds Intelligencer.
Leeds Mercury.
Leeds Times.
Legal Examiner.
Legal Observer.
Literary Gazette and Journal of Belles Lettres.
London Medical Gazette.
Manchester Statistical Society, Miscellaneous Papers, 1837-61.
Medical Times.
Mirror of Parliament.
Monthly Review.
Pamphleteer.
Parliamentary Review, and Family Magazine.
Penny Cyclopaedia.
Provincial Medical and Surgical Association, Transactions.
Quarterly Journal of Education.
United Service Journal.

Wesleyan Methodist Magazine.

Westminster Review.

c. Individual Works.


-----. Second Report ... (Calcutta, 1836).

-----. Third Report ... (Calcutta, 1838).

Aitken, George A. The Life and Works of John Arbuthnot (Oxford, 1892).


-----. On the Economy of Machinery and Manufactures (London, 1832).


-----. Passages from the Life of a Philosopher (London, 1864).


Baly, William. On the Mortality in Prisons and the diseases most frequently fatal to prisoners (London, 1845).


Bennett, James. The History of Dissenters during the last Thirty Years (London, 1839).


—. State of Education, Crime, ...

(Bell, 1842).


Bigland, Ralph. Observations on Marriages, Baptisms, and Burials, as Preserved in Parochial Registers (London, 1764).


—. A Comparative View of the Mortality of the Human Species at all ages (London, 1788).


----- Select Dissertations on Several Subjects of Medical Science (2 vols., London, 1833).


British Association for the Advancement of Science. *Lithographed Signatures of the Members who met at Cambridge, June 1833, With a Report of the Proceedings at the Public Meetings during the Week; and an Alphabetical List of the Members* (Cambridge, 1833).


Burrington, George. *An Answer to Dr. William Brakenridge's Letter concerning the Number of Inhabitants within the London Bills of Mortality* (London, 1757).


Clarke, Thomas B. A Statistical View of Germany (London, 1790).

Cleland, James. Annals of Glasgow (Glasgow, 1816).

--. Enumeration of the Inhabitants of Scotland (Glasgow, 1823).

--. Statistical Tables Relative to the City of Glasgow (3rd edn., Glasgow 1823).

--. The Rise and Progress of the City of Glasgow (Glasgow, 1829).

--. Enumeration of the Inhabitants of the City of Glasgow and the County of Lanark (Glasgow, 1832).

--. Letter to His Grace the Duke of Hamilton and Brandon Respecting the Parochial Registers of Scotland (Glasgow, 1834).

--. Glasgow Bridewell, or House of Correction (Glasgow, 1835).

--. A Historical Account of the Bills of Mortality, and the Probability of Human Life, in Glasgow and Other Large Towns (Glasgow, 1836).

--. Description of the Banquet given in Honour of the Right Hon. Sir Robert Peel (Glasgow, 1837).

--. Statistical Facts Descriptive of the Former and Present State of Glasgow (Glasgow, 1837).


-----. *An Essay upon the Probable Methods of making a People Gainers in the Ballance of Trade* (London, 1699).

-----. *A Discourse upon Grants and Resumptions* (London, 1700).

-----. *Essays* (London, 1701).

-----. *Essays upon Peace at Home and War Abroad, Part I* (London, 1704).


Drinkwater, John Elliot and Power, Alfred. Replies to Mr. M.T. Sadler's Protest Against the Factory Commission (Leeds, 1833).


Edmonds, T.R. Life Tables (London, 1832).

——. An Enquiry into the Principles of Population, Exhibiting a System of Regulations for the Poor (London, 1832).


Fripp, C. Bowles. Statistics of Popular Education in Bristol (Bristol, 1837).

Grant, James. Random Recollections of the House of Commons, from the Year 1830 to the Close of 1835 (London, 1836).

Graunt, John. See above under Benjamin, Bernard.


——. Social Statistics of the Netherlands (Manchester, 1835).


Halliday, Andrew. Some Remarks on the State of Lunatic Asylums, and on the Number and Condition of the Insane Poor in Scotland (Edinburgh, 1816).

---. A Letter to the Right Honble. the Secretary at War, on Sickness and Mortality in the West Indies; Being a Review of Captain Tulloch’s Report (London, 1839).


Hare, Samuel. Statistical Report of 190 Cases of Insanity, Admitted into the Retreat, Near Leeds, During Ten Years, from 1830 to 1840 (London, 1844).


Haygarth, John. Sketch of a Plan to Exterminate the Casual Small-Pox from Great Britain; and to Introduce General Inoculation (London, 1793).


Heysham, John. Observations on the Bills of Mortality for the Year 1772 (Carlisle, 1780). Six similar works cover the years 1779-88.

---. An Account of the Jail Fever, or Typhus Carcerum: As it Appeared at Carlisle in the Year 1781 (Carlisle, 1783).


Hodgson, James. The Valuation of Annuities upon Lives; Deduced from the London Bills of Mortality (London, 1747).


Hull, Charles Henry (ed.). The Economic Writings of Sir William Petty together with the Observations upon the Bills of Mortality more probably by Captain John Graunt (Cambridge, 1899).

Hume, Rev. A. The Learned Societies and Printing Clubs of the United Kingdom (London, 1847).


Jurin, James. A Letter to the Learned Caleb Cotesworth, M.D. Containing a Comparison between the Mortality of the Natural Small Pox, and that given by Inoculation (London, 1723).

------. An Account of the Success of Inoculating the Small Pox in Great Britain. With a Comparison between the Miscarriages in that Practice, and the Mortality of the Natural Small-Pox (London, 1724).


King, Gregory. Two Tracts (ed. with an introduction by George E. Barnet, Baltimore, 1936).


------. The Principles of Political Economy (Edinburgh, 1825).


A digest of all the accounts relating to the population, production, revenues ... of Great Britain and Ireland (London, 1833).

An Analysis and Compendium of all the Returns made to Parliament (London, 1835).


Miller, H. Papers Relative to the State of Crime in the City of Glasgow, with Observations of a Remedial Nature (Glasgow, 1840).


Moivre, Abraham de. The Doctrine of Chances; or, a Method of Calculating the Probabilities of Events in Play (3rd edn., London, 1756).


Partridge, Rev. S. Remarks Upon, and Proposed Improvements of, the Bill for Parish-Registers (Boston, 1812).


Percival, Thomas. Tables showing the Number of Deaths occasioned by the Small-Pox ... (Manchester, 1775).


Petty, Sir William. "The Advice of W.P. to Mr. Samuel Hartlib, for the Advancement of some particular Parts of Learning" (1648), Harleian Miscellany, VI, 1745, pp. 1-13.

The History of the Survey of Ireland, commonly called the Down Survey. (ed. by T.A. Larcom, Dublin, 1851).


------. *Observations on Reversionary Payments; on Schemes for providing Annuities for Widows, and for Persons in Old Age* (London, 1769).


------. *On a Recent Proposal of the Poor Law Commissioners to Refuse Out-door Relief to Widows with Families* [*Manchester, 1840*].


New Observations, Natural, Moral, Civil, Political, and Medical, on City, Town, and Country Bills of Mortality (London, 1750).


The Doctrine of Annuities and Reversions, deduced from General and Evident Principles (London, 1742).

Select Exercises for Young Proficients in the Mathematicks (London, 1752).


Wales, William. An Inquiry into the Present State of Population in England and Wales: and the Proportion which the present Number of Inhabitants bears to the Number at former Periods (London, 1781).


Watt, Alexander. The Glasgow Bills of Mortality for 1841 and 1842 (Glasgow, 1844).

Wyse, Thomas. Education Reform; or, the necessity of a National System of Education (London, 1836).


Young, Arthur. Proposals to the Legislature for Numbering the People (London, 1771).


———. Political Arithmetic, Part II (London, 1779).


———. An Appeal to the Protestant Dissenters, on the Approaching Election (London, 1834).


———. The Claims of the Protestant Dissenters (London, 1833).

———. A Letter to a Member of Parliament, on the Registering and Numbering the People of Great Britain (London, 1753).

———. A Sketch of the History and Proceedings of the Deputies Appointed to Protect the Civil Rights of the Protestant Dissenters, to Which is Annexed a Summary of the Laws Affecting Protestant Dissenters (London, 1813).
II. SECONDARY

A. Theses


Cherry, A.C. A Life of Charles Knight (1791-1873) with special reference to his political and educational activities (M.A., London, 1943).


B. Books

a. General.


John, V. Geschichte der Statistik (Stuttgart, 1894).


Laslett, Peter. The World we have lost (Cambridge, 1965).

b. Biographies.


Beattie, Lester M. John Arbuthnot: Mathematician and Satirist (Cambridge, Massachusetts, 1935).


Heywood, Thomas. A Memoir of Sir Benjamin Heywood (Manchester, 1888).


Symonds, John Addington. Some Account of the Life, Writings, and Character of the late James Cowles Prichard (Bristol, 1849).

Williams, Orlo. Lamb's Friend the Census-Taker; Life and Letters of John Rickman (London, 1911).

c. Other books.


Kuhn, Thomas S. The Structure of Scientific Revolutions (Chicago, 1964).


MacGregor, George. The History of Glasgow (Glasgow, 1881).


Renwick, Robert (ed.). Extracts from the Records of the Burgh of Glasgow, X-XII (Glasgow, 1915-16).


Tylecote, Mabel. The Mechanics Institutes of Lancashire and Yorkshire before 1851 (Manchester, 1957).


C. Articles


b. Biographical articles.


Youngson, A.J. "Alexander Webster and his 'Account of the Number of People in Scotland in the Year 1755'", Population Studies, XV, 1961-2, pp.198-200.
c. Other articles.


