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*An INQUIRY into the TRUSTWORTHINESS of the OLD BILLS of
MORTALITY.*

By DR. WILLIAM OGLE, M.D., F.R.C.P.

THE London Bills of Mortality are usually said, on the authority of Captain Graunt, to have begun in 1592-93; but Maitland, writing in the middle of the last century, puts back their commencement to the year 1562. "In that year," he writes, "a grievous pestilence raged in this city; therefore in order to know the increase and decrease of the same, 'twas judged necessary to take an account of the number of burials, which being the first of the kind that was ever taken in *London*, it commenced on the first of *January*, Anno 1562,¹ and ended the last of *December*, 1563; whereby it appears that the number total buried within the City and Suburbs in that year, amounted to 23,630, whereof of the Plague 20,136."² This same bill had also been given by Stowe,³ who was living in the year to which it relates, and whose account contains the further information that the area covered by the bill consisted of 108 parishes "in the citie and liberties thereof" and of eleven other parishes "adjoining to the same citie."

As this bill for 1563 is for the exact year of 365 days, it is plain that it cannot have been obtained by summation of successive weekly bills. Nevertheless, it appears from passages in Stowe's "Memoranda," published by the Camden Society,⁴ that weekly returns were prepared at that time, for Stowe gives the number of deaths from the plague for each week from 3rd July, 1563, to 26th July, 1566. It is curious, however, that in one of this long series of weekly returns the period covered is not an exact week of seven days, but only a period of six days, namely from⁵ 18th July to 23rd July inclusive; and it therefore appears not impossible that such variations may have been made in the length of periods covered by the weekly returns as would allow

¹ *I.e.*, 1563 as we should date it; the year at that time ending in March.

² Maitland's "History of London" (1756), p. 736.

³ Stowe's "Ann." (edit. 1631), p. 657. Stowe gives the total as 23,660 or 30 more than Maitland.

⁴ Camden Society, 1880, "Gairdner," pp. 123 and 144.

⁵ The omission of one day from this bill had the effect of making the last weekly return in the year end on 31st December; but there must have been previous alterations in the weekly returns if they commenced on 1st January; for the days from 1st January to 17th July inclusive are not divisible by seven.

a general bill to be constructed from them for the exact year from 1st January to 31st December.

Maitland says that he had seen this general bill for 1563 in the library of Sir Hans Sloane; and as that library passed into the possession of the British Museum, I hoped to have found it in that wilderness of books. In this, however, I was disappointed; but in the course of my search I lighted by accident⁶ on a bill of still greater age. This bill, which is for a week "syns the "xvith day of November unto the xxiii day of the same month," is unfortunately without the date of the year; but is catalogued doubtfully as being about 1512. Why this precise year was selected I have been unable to discover, but I am assured by experts in such matters that the handwriting is indisputably of the earlier part of the sixteenth century. The precise date, however, is not a matter of much importance. It is sufficient for the present to have shown that the bills of mortality in London go back much farther than has been usually supposed, and were not unknown even in the earlier part of the sixteenth century.⁷

By whom those earlier returns were compiled can only be surmised; but in all probability they were drawn up by the same agency as the later bills, namely, the Company of Parish Clerks, who had been incorporated by Henry III as the Brotherhood of St. Nicolas, and who, so far as can be seen, would have been the only body in possession of the necessary information as to burials.

As the main object of the bills was to give information concerning the plague, their publication discontinued with its cessation, to be renewed however when fresh outbreaks occurred; and thus up to the year 1603 the bills only appeared intermittently. But in that year the publication became permanent, and has continued without break to the present day. Although however the publication of the bills was thus intermittent, it does not appear to be equally certain that the materials were not collected continuously by the parish clerks; for that this company collected in after years much information concerning the mortality which they did not include in their published returns is certain, and, moreover, a very large proportion of the weekly returns given by Stowe

⁶ Egerton MSS. 2603, f. 4. See Appendix A.

⁷ Since the above was written, a learned work ("History of Epidemics," Cambridge, 1891) has been published by Dr. Creighton, in which are given many new and interesting particulars as to the bills of mortality of the sixteenth century. The Egerton bill, on which Dr. Creighton had also lighted, is attributed by him with much probability to 1532, in which year an Order of Council was issued calling on the mayor to furnish a bill of the deaths from plague. The bill which Dr. Brewer ascribed to the year 1528, is shown conclusively by Dr. Creighton to belong to 1535. Dr. Creighton also gives particulars of a long series of weekly bills from 1578 to 1583, discovered by him among the papers of Lord Burghley at Hatfield.

covers a period, viz., from 23rd June, 1564, to 26th July, 1566, when the great outbreak of plague of 1563 had come to an end, and during the whole of which scarcely a death from that disease occurred in London.

It appears probable, therefore, that the parish clerks made continuous returns to their company of the burials in their respective parishes, but that it was only in times of pestilence that they were called on by the Government to make those returns public; and that the figures given by Stowe for the period when plague was absent were obtained by him not from any public returns, but direct from the company's register or books.

The earlier bills existed only in manuscript; it was not until 1625 that they were issued in print; the Company of Parish Clerks having in that year "obtained a decree, or act, under the seal of the High Commission Court or Star Chamber, for the keeping of a printing press in their hall in order to the printing of the weekly and general bills within the City of London and liberties thereof; for which purpose a printer is assigned by the Archbishop of Canterbury. And on the 18th of July that year, a printing press was accordingly set up, and an order then made that from thenceforth the weekly reports of the burials, within the circuits aforesaid, should be printed, with the number of burials against every parish, which till that time had not been done."^s

Although only the City and its liberties are mentioned in the foregoing order, as a matter of fact the area comprised in the bills was by no means thus limited. Even in 1603, when the bills first became continuous, in addition to the parishes of the City and its liberties, certain out parishes in Middlesex and Surrey were included, and further parishes were added to the list in 1604, 1606, 1626, and 1636. The only addition made in the next century was of St. Mary-le-Strand, with the Duchy of Lancaster, which was taken in in 1726. No addition whatsoever was made in the nineteenth century up to 1849, in which year the old bills of the parish clerks came to an end, having been practically superseded since 1840 by the new bills published under the authority of the Registrar-General, and covering a very much wider area. The details of the successive additions to the bills, old and new, are given in an Appendix (B) to this paper. It is important to notice the existence of such changes, because otherwise the error may be made—and indeed has often been made—of supposing that the total deaths in the successive returns are throughout deaths in one and the same area.

^s "A Collection of the Yearly Bills of Mortality from 1657 to 1758 inclusive" (1759), p. 9.

Besides these changes in the area covered by the bills, there were also notable changes from time to time in the particulars given.

The weekly bills when they first became continuous gave the number of burials only in the aggregate for the whole area, and not separately for each parish; males and females were not distinguished; the causes of death, excepting the plague, were not stated, nor were the deaths classified by ages.

These deficiencies were gradually remedied; parishes being distinguished in 1625,⁹ sexes and causes in 1629, and ages, in the general if not in the weekly bill, in 1728. The number of christenings (Appendix C) appears to have been given from the commencement, at any rate in the Annual Bill. Although these several particulars only made their appearance in the bills at the dates just given, they seem to have been collected by the parish clerks from the beginning, but not published; for Graunt,¹⁰ writing in the latter half of the seventeenth century, notes that "although the "general yearly bills have been set out in the several varieties "afore mentioned, yet the original entries in the hall-books were "as exact in the very first year, as to all particulars, as now, and "the specifying of casualties and diseases was probably more."

The mode in which the bills were composed is thus described by the same writer: "When any one dies, then, either by tolling "or ringing of a bell, or by bespeaking of a grave by the sexton, "the same is known to the searchers, corresponding with the said "*Sexton*. The *Searchers* hereupon (who are ancient matrons, "sworn to their office) repair to the place where the dead Corps "lies, and by view of the same, and by other enquiries, they "examine by what *Disease* or *Casualty* the Corps died. Here- "upon they make their report to the *Parish Clerk*, and he, every "*Tuesday* night, carries in an *Accompt* of all the *Burials* and "*Christnings* happening that week, to the *Clerk* of the *Hall*. "On *Wednesday* the general *Accompt* is made up and printed, and "on *Thursday* published and dispersed to the several families who "will pay four shillings *per Annum* for them."

This account of the manner in which the data for the weekly bill were obtained is perhaps not quite so clear as might be wished. The natural interpretation of it, however, would be that the searchers ascertained, so far as they could, the causes of death, and reported the results of their inquiries to the parish clerk, who

⁹ It is, however, to be noted that, as the information was obtained from each parish separately, there were always the means of giving the deaths by parishes; and that as a matter of fact they were so given in the earliest weekly bill now extant, namely, the bill in the Egerton manuscripts at the British Museum.

¹⁰ Graunt's "Observations," &c., 5th edit. (1676), p. 17.

obtained either from the sexton or from the parish register the number of burials, and combining the two, made his return to the clerk of the Hall. But, if this were so, it would seem hardly possible, excepting in rare cases of very gross carelessness, that the number of burials in the week in a given parish should have been wrongly returned, and especially impossible that more burials should be returned as having happened in the week than was actually the case. Yet a comparison of the annual bills with the parish registers of burials shows that such must have been a frequent occurrence. For, as I shall have occasion presently to point out in more detail, the number of burials as given in the register is frequently in excess of the number given in the annual bill, and still more frequently falls short of it; I think it therefore very probable, as the only explanation I can see of these discrepancies, that very often the searcher must have been trusted to return not only the causes of death, but also the number of burials; and that such return sometimes included deaths of persons who were afterwards not buried in the parish graveyard, and more frequently omitted deaths of persons who were so buried, but concerning which the searcher received no information.

Be this however as it may, the untrustworthiness of the bills was soon recognised. Graunt, writing in 1665, estimates¹¹ that in the years of plague—the very disease for information concerning which the bills had been instituted—the deaths caused by it were understated by 25 per cent. And that the returns generally, so far as they depended upon the reports of the searchers, must have been excessively untrustworthy, may be inferred with much certainty from a chance passage in which he speaks of these old women as performing their office “after the ‘mist of a cup of ale,’ and as ready to conceal anything which the friends of a deceased person might wish to hide if they received ‘the bribe of a two-groat fee instead of one,’ which appears to have been their proper fee at that period.”¹²

Attacks of this kind made it necessary for Mr. Bell, who was then the clerk to the Parish Clerks' Company, to say what he could in defence of the bills; and consequently in the preface to “The General or Whole Year's Bill,” for the year 1665, he thus expresses himself: “Searchers are generally ancient women, “and I think are therefore most fit for their office. But sure I am “they are chosen by some of the eminentest men of the Parish to “which they stand related; and if any of their Choosers should “speak against their abilities they would much disparage their “own judgements. And after such choice they are examined

¹¹ Graunt, *op. cit.*, p. 49.

¹² *Op. cit.*, p. 34.

'touching their sufficiency, and sworn to that office by the *Dean of Arches*, or some Justice of the Peace, as the cause shall require. As "for the Clerks' returns I dare affirm that they were never more "punctual in the discharge of their duties than at this day." And he goes on to say that they like the Searchers are sworn, "and I "presume there cannot be a stricter obligation than an oath to "bind any person." As this was all that Mr. Bell could find to say in answer to the serious charges against the accuracy of the bills, we may conclude with much certainty that those charges were substantially true, and that the bills in the middle of the seventeenth century were grievously deficient. Nor do they appear to have improved in later times. Thus in "A Collection of the Yearly "Bills of Mortality from 1657 to 1758 inclusive," published in 1759, the anonymous editor, who was clearly a man of ability and of painstaking accuracy, thus expresses himself: "There is another "material defect which affects both baptisms and burials . . . This "arises from the neglect of parish clerks and their deputies in not "making exact returns to the common-hall. From some large "parishes no account is sent for weeks together, and the account "for several is sometimes inserted in one weekly bill. If this was "done without any omissions the account would come right at the "end of the year; but omissions in many, there is good reason to "believe, are never supplied or corrected. This is often to be "ascribed to negligence, but it is sometimes owing to disputes "between the clerk in orders and the officiating clerk, that the "bills of births and burials are neither so regularly kept nor so "accurately returned as they ought to be. What allowance is to "be made for these omissions can be hardly settled; but it is "judged that they are not inconsiderable."¹³

Similarly, Maitland, writing in 1756, says that "The Bill of "Mortality of the City of London is certainly one of the most "defective of its kind," and even so late as 1835, when the old bills were just coming to their end, we find the writer of the article "Bills of Mortality," in the "Penny Cyclopædia," reiterating the old complaint of the evil habits of the searchers. "On the death," says the writer, "of an individual within the "prescribed limits, intimation is sent to the searchers, to whom "the undertaker or some relative of the deceased furnishes the "name and age of the deceased and the malady of which he died. "No part of this information is properly authenticated, and it "may be true or false. The appointment of searcher is generally

¹³ *Op. cit.*, p. 6. The writer is believed to have been Dr. Birch, as much of the preface exists in manuscript in the papers of that gentleman now in the British Museum. (The copy in the Museum was given by Dr. William Heberden, who received it from the editor.)

“made by the churchwardens, and usually falls upon old women, and sometimes on those who are notorious for their habits of drinking. The fee which these official characters demand is one shilling, but in some cases two public authorities of this description proceed to the inspection, when the family of the defunct is defrauded out of an additional shilling. They not unfrequently require more than the ordinary fee, and owing to the circumstances under which they pay their visit, their demands are generally complied with. In some cases they even proceed so far as to claim as a perquisite the articles of dress in which the deceased died. Such are the means at present employed in collecting medical and political statistics in the metropolis of England.”

Whether these and the earlier charges against the searchers were true we have now no means of ascertaining, but this we may most confidently assert, that, quite independently of any intentional dishonesty on the part of these “ancient women,” statements of causes of death collected by them in the way described, and without further verification, are of very little, if of any, real value. In the case only of very obvious diseases, of diseases that are attended by external symptoms easily recognised and not easily confounded with the symptoms of other ailments, can much reliance be placed on such haphazard diagnosis as ocular inspection of the body by an unskilled searcher, even if sworn to the office by the Dean of Arches? The charges, however, made against the parish clerks, that they were careless and inaccurate in making their returns to the Clerk of the Company, admit of examination; for many of the parish registers are in existence, and some of these have been published, and we can compare the number of burials in such parishes as given in the bills with the number as entered in the register. The result of a considerable number of such comparisons which I have made, has been to show that the two rarely tally. Out of one hundred and twenty comparisons made by me between the annual return in the bills and the entries in a parish register, there were only twenty occasions, that is once in six times, in which bill and register gave the same number.

In all the remaining hundred instances there was a discrepancy, and sometimes a very large one. The balance was sometimes on one side, sometimes on the other; that is to say the number of deaths given in the bill sometimes exceeded, sometimes fell short of, the number of entries in the register; and, as these errors occurring indifferently in contrary directions tended of course to correct each other, the total amount of error was but slight when a sufficiently long series of years was taken into account.

For instance, the bills for the ten years 1657-66 show for the five parishes of St. Peter's Cornhill, St. Michael's Cornhill, St. Dionis Backchurch, St. Thomas the Apostle, and St. Mary Aldermary, an aggregate of 1,879 burials, while the registers only show an aggregate of 1,843.

Burials from 22nd December, 1656, to 18th December, 1666.

Parish.	Bills.	Register.
St. Peter's, Cornhill	410	418
St. Michael's, Cornhill	362	332
St. Thomas the Apostle	403	402
St. Dionis, Backchurch	357	352
St. Mary, Aldermary	347	339
	1,879	1,843

The years indicated in the above table take in the great plague year, 1665, and it is to be noted that, notwithstanding the alarm and general confusion caused by that visitation, the figures for that year tally in the two records in a more than average degree. There were in that year 586 burials in these parishes according to the bills, and 580 according to the parish registers.

Then came the great fire, destroying many of the parishes. But for two of the above mentioned parishes I have continued the comparison to the end of the century, with the following result:—

Burials from 21st December, 1669, to 17th December, 1700.

Parish.	Bills.	Register.
St. Peter's, Cornhill	1,020	1,062
St. Dionis, Backchurch.....	934	961
	1,954	2,023

In this period the balance is on the side of the registers, the deficiency in the bills being nearly $3\frac{1}{2}$ per cent.; but if the figures be added to those of the earlier period in the same century, the total of the bills comes to 3,833, while the total by the register is 3,866, the deficiency in the bills being therefore on the whole account less than 1. per cent.

A similar result is obtained by a comparison of bills and registers in the next century, as the following table shows, in which the bills for the ten years 1744-53 show in six parishes an aggregate of 1,092 burials, while the registers show 1,097, or

almost the same number, the deficiency in the bills being again less than 1 per cent.

Burials from 13th December, 1743, to 11th December, 1753.

Parish.	Bills.	Register.
St. Peter's, Cornhill	168	158
St. Michael's, Cornhill	161	172
St. Thomas Apostle	99	114
St. Dionis, Backchurch.....	268	310
St. Mary, Aldermary.....	194	164
St. John Baptist, Wallbrook	202	179
Total	1,092	1,097

On the whole, then, judging from these samples, we are justified in assuming that the bills in the seventeenth and eighteenth centuries, though they give figures for single years and for individual parishes that rarely tally exactly with those derived from the registers, nevertheless, when taken in the aggregate and for a sufficient series of years, are fairly accurate transcripts of the parish registers.

But when we pass on to the nineteenth century the state of things appears to have got worse. I have not, it is true, made any direct comparisons between the bills and the parish registers in this century, but an examination of the bills themselves renders it practically certain that the returns had become very untrustworthy. Again and again there occur years in which some or other parish makes no return at all. Thus Bridewell Precinct made no return from 1806 to 1814; the Savoy, none in 1814, nor from 1816 to 1819; St. John, Wapping, made no return in 1815; St. Ann's, Soho, in 1821 and 1823; St. Leonard's, Shoreditch, in 1826; and St. George's, Hanover Square, altogether ceased to make a return from 1824 onwards. Moreover, the returns themselves, when made, fluctuate from year to year in so extraordinary a manner that it is impossible, without very strong evidence to the contrary, to admit their approximate accuracy. For instance, the burials in St. Leonard's, Shoreditch, after averaging about 900 a year pretty regularly, drop suddenly in 1822 to 372, rising in the next three years to 1,046, 1,058, 1,666, respectively; then in 1826 not being given at all, and then again suddenly rising to 2,195 in 1827.

St. Mary, Whitechapel, returns 429 burials in 1820, then 1,004 in 1821, and then drops again in 1822 to 586. Similarly inexplicable fluctuations occur in the returns from other parishes, such as St. George's-in-the-East, St. George's Hanover Square, and St. John's Clerkenwell. Of course, in times of great pestilences,

such as occurred in the sixteenth and seventeenth centuries, enormous differences might reasonably be expected to occur, and, as a matter of fact, did occur, in the number of burials in consecutive years; but there have been no pestilences such as these in the nineteenth century, and the fluctuations in the bills are vastly too great and too irregular to be accounted for by variations in any of the diseases with which we are familiar. The conclusion, therefore, seems forced upon us that the old bills of mortality had become in the nineteenth century much less accurate than they had been in earlier times, and that any estimates of mortality based upon these will almost certainly, owing to the frequent neglect of parishes to make any return at all, be very far short of the reality. A single example will show this: St. George's, Hanover Square, as above stated, made no return from 1824 onwards; but the burials in this one parish had averaged 857 annually in the preceding nine years, so that the neglect of this one parish caused a deficiency of 857 burials in the year, or a not inconsiderable proportion of the whole number given for London in the bills.

Thus much then as to the degree in which the figures in the old bills of mortality may be supposed to tally with the number of burials as given in the parish registers. The question, however, necessary though it was to inquire into it, really becomes almost unimportant when the very much more serious defects in the bills arising from other causes are taken into consideration.

These defects, stated shortly, are as follows: the figures given in the bills are for burials, not for deaths; they are for burials only of members of the Established Church, excluding therefore all Roman Catholics and all the various kinds of non-conformists; lastly they do not include all the burials even of members of the Established Church, but only of such of these as were buried in the parish churches and cemeteries;¹⁴ "by which means," as Maitland observes, many burial grounds belonging to the Church of England, such as St. Paul's Cathedral, Westminster Abbey, "the Temple Church, St. Peter's ad Vincula, the Rolls and "Lincoln's Inn Chapels, the Charter House and divers others "belonging to hospitals" are excluded from the reckoning.

What proportion of burials of the Church of England population took place in these private burial grounds I have no means of estimating. Probably it was no very serious proportion of the whole; still the number was not inconsiderable, for I find that there were buried 1,112 persons at Chelsea Hospital¹⁵ in the twenty years from 1781 to the end of the century; at St. Peter's ad Vincula there were 14 burials in each of the years 1729 and

¹⁴ "History of London," ii, 740.

¹⁵ Burial register of Chelsea Hospital, in General Register Office, No. 38.

1730,¹⁶ while in Westminster Abbey,¹⁷ the only other one of these burial places concerning which I have been able to find information, there were buried 400 persons in the last twenty years of the seventeenth century (1681-1700), and 210 in the last twenty years of the eighteenth century (1781-1800).

Of much more serious import is the fact that a large number of persons who died within the limits of the bills of mortality were carried away to be buried in the country. In some of the parish registers the names of these persons and the place to which they were carried to be buried have been entered by the clerk or churchwarden, and it is surprising to see, considering the difficulties of transport in those days, what a large number of corpses were carried to considerable distances, both from and to London, for burial.

This fact, and also the further important fact that the number carried out far exceeded the number carried in, was noted by Maitland, who states, "I have for divers years observed that " the number of persons carried from London to be inhumed in " other parts of the country, is greater than that of those brought " from all other places in the kingdom¹⁸ to be buried in this city " and suburbs." And the careful compiler of the collection of bills of mortality published in 1759 is more explicit in his statement, and has taken pains to form an estimate of the amount of deficiency in the bills thus brought about.¹⁹ " Another defect in the " bills," he says, " not so generally attended to, is that the number " of persons carried into the country to be buried is not brought " into account in them. Many are frequently removed from one " parish to be buried in another that are both within the bills, " which makes no difference upon the whole. But great numbers " are carried from parishes in town to be buried in the country. " This number has probably increased, as the fashion of having " country houses has more prevailed. A few indeed who die else- " where are brought to be buried in parishes within the bills; but " the number of these is very disproportionate to those who are " carried out. A distinct account of this matter ought to be kept " in the several parishes, but seldom is kept with any exactness.

" In one of the largest and most populous parishes in Westminster, in which as careful a register is made as in any, the " account is found to stand thus:—

¹⁶ See bills of mortality for these years. St. Peter's ad Vincula was put into the bill in 1729; " But a contest arising between the inhabitants of the Tower " Liberty without and within the Tower, whether the church of St. Peter's ad Vincula was parochial or not, the question was tried in the Court of King's " Bench at Westminster in 1730, when it was determined in the negative, which " occasioned this church to be left out of the bills of mortality soon after." MS. 4213, 1. British Museum.

¹⁷ Register of Westminster Abbey.

¹⁸ *Op. cit.*, ii, p. 742.

¹⁹ *Op. cit.*, p. 5.

" Buried here each year, at an average, for the last ten years	1,074
" Carried out to be buried every year, on an average	261
" Brought in every year, at an average	124
" Of these, at least one-sixth are children of the	} 20
" parish out at nurse in the neighbourhood,	
" and to be considered as persons living and	
" dying in the parish	
" Difference between those carried out and brought in.....	157
	1,074
" Total of persons dying in the parish each year	1,231

" This may be of some use in forming a judgment of the rest ;
 " and yet this is far from being perfect. Those who are brought
 " in to be buried are carefully registered, those who are carried
 " out are not so. Such are entered by themselves in the burial
 " account as come to the knowledge of those whose business it is
 " to attend to these matters ; but of these many are heard of but
 " by accident, and some not at all.

" Supposing the number of persons carried away and not
 " brought to account to be one-sixth (which I think comes as near
 " the truth as any supposition we can make), this will make the
 " whole number of deaths to be one-fifth more than are registered
 " in the bills.

" If the state of deaths which are not registered in the bills be
 " the same or nearly the same in this parish as in others, the
 " defect in this article may with some degree of probability be
 " supplied." And then he goes on to deal with other defects with
 which at present we are not concerned.

It appears, therefore, according to this estimate, which was
 clearly made with much care, and against the reception of which
 I can see no reason, that, simply owing to this one cause of
 omission, we must add 20 per cent. each year to the total number
 of deaths given in the bills.

Nor is this all ; for there still remains another cause of defect
 which, so far as I can judge, was of about the same magnitude.
 The bills were intended only to "comprehend persons belonging to
 " the Church of England, and buried according to its service," and
 though "some few among the poorer sort, both of papists and
 " dissenters, who live at a distance from their respective burial
 " grounds, and cannot bear the expence of being carried thither,
 " are buried according to the rites of the Church of England,
 " and by that means have a place in the weekly bills,"²⁰ such was
 only an exceptional occurrence, and the great mass of Roman
 Catholics and of the non-conformists were buried in their own
 cemeteries, and were altogether unrecognised in the bills.

²⁰ *Op. cit.*, pp. 4 and 5.

What proportion of the population belonged to the Roman Catholic and the non-conforming communities it is not easy to estimate. Indeed, we may feel pretty certain that the proportion varied very greatly from time to time. For instance, in the latter half of the seventeenth century the authorities appear to agree in saying that the number of dissenters declined very greatly; and many of the non-conformist ministers, especially of the Presbyterians, joined the Church of England, and often, as Tillotson, Butler, Secker, rose to great eminence in it. Bishop Burnet, speaking in the House of Lords, said that at a moderate computation the non-conformists had declined one-fourth, if not one-third. This, however, does not help us much, as we do not know what was the proportion before this falling off of a fourth or a third.²¹ It is, however, said that "a computation was made by the direction of Compton, Bishop of London, soon after the revolution, of the number of dissenters, taking in papists and all others, and that made them to be as one to ten."²² If the decline of one-fourth or one-third of which Bishop Burnet spoke, was from this proportion, the non-conformists at the end of the seventeenth century must have been no more than one in fifteen.

As to the proportion in the next, that is, the eighteenth century, the information is still very uncertain. Thus Maitland, writing in 1756, says that some persons estimated that one half was the proportion, but this he thinks is a great mistake, and he himself holds that not more than 1 in $7\frac{1}{2}$ was either a Catholic or a Dissenter;²³ and by an examination of the burial registers in many of the non-conformists' cemeteries, he considers that in 1729 the number of persons buried either in these cemeteries, or in private burial grounds belonging to the Church of England was 3,038.²⁴ As, however, the burials as given in the bill for that year were 29,722, the omission of 3,038 would only amount in round numbers to 1 in 11. The estimate made by the editor of the collection of bills, written after Maitland, and with full knowledge and quotation of his calculation, puts the proportion at 1 in 6, and this estimate I am disposed to accept as the more probable, partly because I am impressed by the great carefulness with which this writer deals with his figures, and partly because such limited means of inquiry as I have been able to apply tally more nearly with this estimate than with that of Maitland. Thus I chanced to find that in the London parishes of St. Mary Aldermary, and St. Thomas the Apostle, the churchwarden or some other official had taken the trouble to enter in

²¹ Cf. Abbey and Overton, "English Church in Eighteenth Century," i, 430.

²² "Burnet's History of His Own Time," v, 137, note (Oxford edit., 1823).

²³ "History of London," p. 746.

²⁴ *Op. cit.*, p. 742.

their parish registers, under the date Lady Day, 1733, a list of the houses in their respective parishes, with the names of the occupiers, the number of their families, and whether they were church people or non-conformists; and in the register of St. Mary Aldermary, a similar list is given eighteen months later. So far as can be ascertained from these lists, the catholics and dissenters formed about 28 per cent. of the total population, or more than 1 in 4. Of course it is possible that these two small parishes may have been exceptional, and not truly representative of the bulk. I have no reason, however, to suppose this to have been the case (see Appendix D). I have also tried to estimate the proportion by an examination of those burial registers of non-conformist communities in London that are in the custody of the Registrar-general. Unfortunately, however, this collection does not include all the non-conformist registers, nor are there any of the Roman Catholics. All therefore that I have been able to ascertain with certainty is that the number of burials in those non-parochial cemeteries was very large; I counted up in those registers to which I had access 2,067 burials in 1780, and 2,329 in 1790. If to these be added the burials in those non-conformist registers which are not now forthcoming, and those of Roman Catholics, and we remember that the total number of burials in 1790 given in the bills for that year was only 18,038, it will be seen that the estimate of 1 in 6 is by no means improbable. It merely supposes that in addition to the 2,329 counted by me, there were 1,279 others of which I was unable to obtain evidence.

If, then, we accept this estimate of the proportion of the population of London who in the eighteenth century were outside the Church of England, we shall have to correct the total of burials given in the bills of mortality in that period, which, as we have seen, have already had to be raised by 20 per cent. for the burials of those who were carried out to be buried in the country, by a further 20 per cent.; and the double correction will now amount to no less than 44 per cent.

Even if it be thought that the estimate of the non-conformist population in the eighteenth century has been set too high, and we take the lowest estimate on record, namely, that of Maitland, who gives 1 in $7\frac{1}{2}$ as his calculation, we shall still have to apply a correction of close upon 39 per cent. in order to convert the number of burials as given in the bills into the number of deaths of all persons independently of religious persuasion.

It matters very little which of these two estimates we adopt; either of them shows sufficiently that a very inadequate idea of the mortality of London in the eighteenth century is furnished by the number of burials as given in the bills.

In the nineteenth century the deficiencies in the bills were probably even greater than they had been in the eighteenth; for while the previous causes of defect remained equally in operation, there was added to them an increasing negligence on the part of the parish clerks in making their returns. In the three years that preceded the publication of the new bills by the Registrar-general, namely, in 1837-38-39, the number of parishes that were defaulters varied from thirteen to fifteen; and the consequence of this increasing negligence, was that the total burials declined gradually, and almost uninterruptedly, in spite of the increase of the population as shown in the census returns, from over 28,000 in 1832 to less than 15,000, or scarcely more than half the previous total, in 1840, and in 1846 actually fell to less than 12,000.

We have fortunately the means of estimating with very closely approximate accuracy the extent to which the burials, as given in bills for 1839 and 1841 fell short of the actual number of deaths. For in these years the old bills and the annual reports of the Registrar-general overlap, and the mode in which the annual reports for those two years were drawn up, enables us to extract from them, with sufficiently approximative accuracy, the deaths registered within the area of the old bills. The bills gave 16,685 burials in 1839, and 14,599 in 1841. The deaths in each case were really, as shown by the Registrar-general's annual reports, more than double the numbers in the bills, being 33,875 in 1839, and 33,143 in 1841.

If then it is necessary, as we have seen, to correct the bills in the eighteenth century by an addition of from 39 to 44 per cent. to the recorded burials, it is necessary in the nineteenth century, or at any rate from 1832 onwards, to make a much larger correction, culminating, in the years when the Registrar-general's reports begin, in an addition of more than 100 per cent.

I say from 1832 onwards, because it is from 1832 that the strongest evidence is forthcoming of negligence on the part of the parish clerks, the total number of burials, which had on the whole increased year by year up to that date, having rapidly declined after it.

It is then abundantly evident that, even if it be allowed that the amount of error in the old bills, as stated in the foregoing remarks, may have been somewhat over-estimated, it is still so large that the utmost caution must be used in drawing any inferences whatsoever from this interesting series of documents; and especially is it plain that these imperfect records of burials supply no trustworthy basis for a comparison between the past and present mortality in London.

APPENDIX A.

A copy of the earliest known Weekly Bill of Mortality.

British Museum. Egerton MSS. 2603, f. 4.

Syns the xv^jth day of November unto the xxii^j day of the same month ys deed. In the citie and fredom yong and old thes mayny folowyng of the plage and oder dyseases.

In primys benetts grace churche j of y^e plage
 S buttolls without bysshops gate j corse
 S nycholas flesshammuls²⁵ j of y^e plage
 S peturs in cornell j of the plage
 Mary Wolnorth j corse
 All halowes barkyng. ij corsen
 Kateryne colmane j of the plage
 Mary aldermanebery j corse
 Michaels in cornelle iij one of y^e plage
 Alle halowes y^e moore ij j of the plagee
 S gylez iij corsen iij of the plage
 S dunstons in y^e west iij of y^e plage
 Stevens in colmane strete j corse
 Alle halowys lumbert strete j corse
 Martens owute whiche²⁶ j corse
 Mergett moyses j of the plage
 Kateryne crechurche ij of the plage
 Martens in y^e vyntre ij corsen
 Buttolls without algate iij corsen
 S olavus in hert strete ij corsen
 S Andros in holborne ij of y^e plage
 S peters at powls wharff ij of y^e plage
 S ffeythes j corse of y^e plage
 S alphas j corse of the plage
 S Mathews in fryday strete j of the plag
 Aldermary ij corsen
 Sepulcres iij corsen j of the plage
 S thomas appostells ij of the plage
 S leonards faster lane j of y^e plage
 Michaels in y^e ryalle ij corsen
 S alborowes j corse of the plage
 Swyththyns ij corsen of y^e plage
 Mary somersetts j corse

²⁵ *I.e.*, flesh shambles.

²⁶ *I.e.*, Outwich.

S bryds v corses j of the plage
 S benetts powls wharff j of the plage
 Alle halows in y^e walle j of y^e plage
 Mary Hylle j corse

sum of y^e plage xxxiiij persons
 sum of oder sekenes xxxij persons

the holle sum ^{xx}iiij and vj.
 and ther is this weke clere.

^{xx}iiij and iij parysh as by thez
 bills dothe appere

(The bill is
 endorsed
 as follows)
 the extinte
 of courses
 beryed of
 the plage
 within the
 citie of
 London
 sens xv

APPENDIX B.

Successive Changes in the Area covered by the Bills of Mortality.

The bills in 1603 included all but 1²⁷ of the 97 parishes within the walls, and all but 3 of the 16 parishes which were part within the liberties and part without. The following list shows the additions²⁸ made from time to time to these 109 parishes.

²⁷ This parish was St. James, Duke Place. That it was not included until 1626 is stated above on the authority of the author (Dr. Birch?) of the "Collection of Yearly Bills of Mortality from 1657 to 1758" (London, 1759). But there seems some doubt whether it was in reality excluded; at any rate it appears in general bills for 1593 and 1625 given in that same collection, the latter of these bills being that made by the parish clerks to the king.

²⁸ At various dates parts of parishes already included in the bills were constituted separate parishes. Names so added, which represent no additions to the area included in the bills, are printed in this table in *italics*.

Date.	Additions.	Remarks.
1604....	St. Bartholomew the Great.... Bridewell Precinct Trinity in the Minories St. Clement Danes St. Giles-in-the-Fields St. James, Clerkenwell St. Katharine by the Tower St. Leonard, Shoreditch St. Mary, Whitechapel St. Martin-in-the-Fields St. Mary Magdalen, Ber- mondsey	These are the three parishes part within and part without the liberties which were excluded at first Out parishes
'06....	Savoy Precinct	
'25....	—	The weekly bills first printed, with the number of burials against every parish
'26....	St. James, Duke Place	See footnote 27
	St. Margaret, Westminster	At this date the numbers of christen- ings, burials, and plague, but not of the other causes of death in St. Margaret, Westminster, were brought into the hall, but it appears doubtful whether they were shown in the bills until some- what later. They appear in the bill of 1657, but not in that of 1636; the intermediate bills are missing from the collection
'29....	—	Sexes and causes of death first dis- tinguished
'36 ...	Hackney Islington Lambeth Newington..... Rotherhithe Stepney	The remark made above as to St. Mar- garet, Westminster, applies also to these parishes
'47....	St. Paul, Covent Garden ...	Previously a part of the parish of St. Martin-in-the-Fields, which had been added in 1604
'60....	—	The bills remodelled and the causes of death in all the 130 parishes shown in them
'70 ...	St. Paul, Shadwell	Previously part of Stepney, which had been added in 1636
'71....	Christchurch, Southwark ...	Previously part of St. Saviour, South- wark, which was in the bills from the first
'85....	St. James, Westminster	Previously parts of St. Martin-in-the- Fields, which had been added in 1604
'86....	St. Anne, Soho	Previously part of Whitechapel, which had been added in 1604
'94....	St. John, Wapping	
1726....	St. Mary-le-Strand	
'28....	—	Ages first distinguished
'29....	St. George, Hanover Square	Previously part of St. Martin-in-the- Fields, which had been added in 1604
	Christchurch, Spitalfields	Previously parts of Stepney, which had been added in 1636
	St. George-in-the-East	Previously part of St. Andrew, Hol- born, which had been in the bills from the first
	St. George the Martyr	

Date.	Additions.	Remarks.
1729....	St. Peter ad Vincula, Tower of London.....	{ It was decided in 1730 that this church was not parochial, and it was removed from the bills { Previously part of Stepney, which had been added in 1636 { Previously part of St. Giles-in-the-Fields, which had been added in 1604 { Previously part of St. Margaret, Westminster, which had been added in 1626 { Previously part of St. Olave, Southwark, which had been in the bills from the first { Previously part of St. Giles, Cripplegate, which had been in the bills from the first { Previously parts of Stepney, which had been added in 1636 The old bills came to an end
'30....	St. Anne, Limehouse	
'31....	St. George, Bloomsbury	
	St. John Evangelist, Westminster	
1733....	St. John, Southwark	
	St. Luke, Old Street	{ Previously parts of Stepney, which had been added in 1636 The old bills came to an end
'46....	St. Matthew, Bethnal Green	
1817....	All Saints, Poplar	
'49....	—	

No further additions were made to the old bills of mortality. The new bills, which commenced in January, 1840, and were published by the Registrar-general, included all the parishes which had been in the old bills, together with Hammer-smith, Fulham, St. Mary Stoke Newington, St. Mary Stratford-le-Bow, St. Leonard Bromley, Camberwell, and the (then) district of Greenwich, comprising the parishes of St. Paul Deptford, St. Nicholas Deptford, Greenwich, and Woolwich. The following additions have since been made:—

Date.	Additions.	Remarks.
1844 ...	Clapham	{ District and poor law union of Wandsworth
	Battersea (exclusive of Penge Hamlet)	
	Wandsworth.....	
	Putney	
	Tooting Graveney (or Lower Tooting)	
	Streatham	
1846....	Charlton	{ At that time the district and poor law union of Lewisham
	Plumstead.....	
	Eltham	
	Lee.....	
	Kidbrooke	
	Lewisham	

In 1887 the hamlet of Mottingham, in the parish of Eltham, was excluded from registration London, and consequently from the bills of mortality.

APPENDIX C.

Christenings and Births.

The purpose of this article is to deal simply with the returns of mortality in the bills; but it may be permissible to add a note concerning the returns of christenings. It must be remembered that it was of these and not of *births* that the number was given in the bills; and indeed not of all of these, but only of such as took place in the parish churches, and were entered in the parish registers.

But in 1694 (*6th and 7th William III, cap. 6*) an Act was passed "for granting to His Majesty certain Rates and Duties "upon Marriages, *Births*, and Burials, and upon Bachelors and "Widowers, for the term of five years, for carrying on the War "against France with vigour," and the clergy were directed to keep registers of all persons married, buried, christened or *born* in their parishes, under a penalty of 100*l.* for neglect or refusal. It was plainly out of the power of the clergy to carry out this enactment, as they had no information as to infants who were born but were not brought to them for baptism; and consequently in the next year (*7th and 8th William III, cap. 35*) it was further enacted that inasmuch as "divers children who are born within "this Kingdom are not christened according to the usages and "ceremonies of the Church of England, and many are christened "in private houses, nor are the parents of such children obliged "by the aforesaid Act (*6th and 7th William III*) to give notice to "their respective ministers of the birth of such children, for want "whereof an exact Register of all persons born is not kept. The "parents of every child hereafter to be born shall within five days "after the birth give notice to the vicar of the parish of the day "of the birth of such child, under a penalty of 40*s.*; the vicar "being bound under a like penalty to keep a distinct register of "such children so born and not christened."

These registers of the unbaptised children were called bye-registers, and some few are still in existence. If they were properly kept, which the terms of a later Act in 1706 (*4th Anne, cap. 12, sect. 10*) show however not to have been the case, it is plain that the number of births in a parish could be obtained by adding the entries in the bye-register to those in the register of baptisms.

The only bye-register that I have personally examined is that of the parish of St. Mary at Reading, which has recently been

published by the Rev. G. P. Crawford. This consists of a certain number of sheets of paper stitched into the register of baptisms, and is headed "The By-Register according to Actt of Parllment, "for Byrths of those that are not baptized by the Minister of the "Parish in the year of our Lord 1695." The entries commence with April, 1696, and the total number of births entered in the course of ten years from that time is 101; while the baptisms in the ordinary register during the same period amount to 488.

If, then, this bye-register may be taken to represent the general state of things elsewhere than at Reading, we must add 20·7 per cent. to the number of christenings as given in the bills, in order to obtain the true number of births in London at the close of the seventeenth century.

APPENDIX D.

As in Appendix A a copy is given of the earliest known Bill of Mortality, so here is appended a copy of the earliest, as I believe, known census of a London Parish. It is extracted from the Harleian Society's Registers, vol. vi, pp. 159 and 160. Similar lists for St. Mary Aldermary, at Ladyday, 1733, and Michaelmas, 1734, are to be found in the registers of that parish, and have been published by the Harleian Society in vol. v of their series of registers.

A LIST OF Y^E PARISH OF ST^T. THOMAS APOSTLE'S TAKEN ON LADY DAY, 1733.

William Haggard, Tea Warehouse, to Church family four.

Rayham Reap, South Sea house, to Church. N^o in family eight.

Andrew Beach, Surgeon. to Church, in family four.

Tho. Hill, porter. she washer or Laundress. to Church. family six.

Taylors Court, Mr. Price, Carpenter & Undertaker : to Meeting : N^o 11.

Mr. Baker, Merch^t, R.C. N^o 5.

Widow Phillips, to Meeting. family three.

Edmond Morgan, to Church, family eleven.

Marsh Dickenson, Attorney, to Church, family ten.

Robert Ramshire, Undertaker, to Meeting, family four.

Dr. Eaton, Physitian, to Meeting.

Widow Meggott, to Church, family nine.

Andrew Wood, Broker, to Church, family ten.

James Perrott, to Church, family three.

Grace Shaw, to Church, family six.

John Parker, Apothecary, to Church, family eight.

Stephen Thompson, Wine Merch^t, to Church, family eleven.

Widow Thompson, Hott Presser, to Meeting, family four.

1 House Empty.

William Curtis, Hott Presser, to Church, family five.

Ja. Rostoe, Manchester Goods, to Church, family three.

John Hoott. Attorney. to Church, family seven.

G. Kent. Kalender Shop, to Church, family four.

Tho. Cole, Livery Stable, to Church, family four.

D. Prew. C.C. Drugget Warehouse, to Meeting, family five.

W. Miller, Carpenter, to Meeting, family four.

Geo. Smyth, Bricklayer, to Church, family four.

Isaac Fryer, Glazier, to Church, family six.

1 House Empty.

Widow Jones, Thread Shop, to Meeting, family three.

Edw. Dauber, Barber, to Church, family four.

Widow Hammond, to Church, family eight.

1 House Empty.

John Denning. Carpenter. to Church, family five.

Jn^o Horton, Tobacconist, to Church, family four.

Jn^o Richardson, Dyer, to Church, family three.

Mich. Bradshaw, Upholster, to Church, family eight.

Burford, Distiller, Quaker, family three.

Tho. Walker, Stone Cutter, to Church, family three.

M^r. Greaves, Distiller, to Church, N^o 11.

Henry Emmett, to Meeting, family five.

Geo. Tobias Guiguer, Merch^t, to Church, family nine.

Alderman Godschall, Wine Merch^t, to Church, N^o 13.

Geo. Pinkney, Chandler Shop, to Meeting family three.

Jabez Harris, Post Office, to Meeting, family five.

Ralph Foster, Apothecary, to Meeting, family five.

Will^m Key, Taylor, to Church, family three.

Ten Houses, pull'd down in order to be rebuilt.

Segar Corwin, Chairmaker, to Church, family four.

John Webb, Cooper, to Church, family seven.

Ambr. Harding, Lawyer, to Church, family five.

John Dark, Calendar-Shop, to Church, family four.

Joseph Somner, Sexton, to Church, family five.

Joseph Hudson, Porter, to Church, family four.

Widow Webster, Chandler Shop, to Church, family four.

Widow Baxter, Stocking Presser, to Church, family four.

Widow Somersett, M^r. Moore & his wife & serv^t, to Church.

J. Shrimpton, Plasterer, to Church, family three.

William Watson, Hott Presser, to Church, family three.

Ja. Trevett, Alehouse, to Church, family five.

Widow Gibbons, Cuttler, to Meeting, family three.

Robert Mayo, Barber, to Church, family five.

There are in this place ten Houses empty, some repair'd, others pull'd down and rebuilt.

John Breadcutt, Fruiterer, to Church, family six.

R^d Hooper, Coal Meter, to Church, family two.

Jos. Robinson, Bricklayer, to Church, family three.

Moderick Mead, Bookbinder, to Church, family four.

John Jarratt, Innkeeper, to Church, family nine.

Pierce Yardley, Lapidary, to Church, family three.

S. Westall, L^t Col^l, to Church, family seven.

J. Shuttleworth, Fruiterer, to Masse, family nine.

J. Smyth, Baker, to Church, family six.

W. Boddington, Grocer, to Meeting, family five.

1 House Empty.

J. Whitworth, Oil Merch^t, to Church, family seven.

Widow Merry.

W. Martin, to Church, family six.

1 House Empty.

J. Smyth, Drawer of fine Cloth, to Church, family three.

W. Perry, Whitehorse Alehouse, to Church, family eight.

Widow Bowles, Apothecary's Widow, Church, N^o 5.

Fran. Lynch, to Mass, in family five.

William Seward, Clerk at y^e South Sea House, to Church, N^o 5.

The abovesaid Houses in y^e parish of S^t Tho^s Ap^e are in N^o One Hundred and Two.

EDW. WATKINSON.

Mr. Watkinson appears to have miscounted the houses in his parish, for according to my reckoning the number of them is 101, not, as stated, 102.

The number of families that attended church, so far as can be judged, seems to have been 57, while 15 attended meeting and 3 went to mass. Combining these figures with those to be got from the census at the same date in St. Mary Aldermary, the total result is that 101 attended church, 33 attended meeting, while 6 attended mass, giving a proportion of 27·8 per cent. that were either non-conformist or Roman Catholic.

On comparing the names in the list of parishioners of St. Thomas the Apostle with the names in the registers of christenings and burials in the same parish, I was surprised to find how widely the two lists differed. Taking the registers from the date of the census down to Lady Day, 1738, that is for a period of five years,

I find there are altogether 101 different surnames among the entries, but of these 101 there are only 33 that are to be found in the parochial census of Mr. Watkinson, and this even when the most liberal allowance has been made for possible vagueness in spelling or in pronunciation, when for instance not only such names as Cole and Coles, Smith and Smyth, Forsiett and Faucitt, are looked on as merely forms for one and the same name, but when similar allowance is made for the more divergent names of Morgue and Morgan, Boheme and Bowen, Winkworth and Whitworth.

Whence then came the other 68 names? The intimate connection between St. Thomas the Apostle and St. Mary Aldermary, made it seem possible that some of these 68 might be parishioners of this latter parish who used the church of St. Thomas as their own, but on examining the names in this other parochial census, I found that such a supposition would only account for 7 more of the names, still leaving 61 not to be found in either census.

Some of these 61 may doubtlessly have been servants or lodgers, whose names are not given in the census, they being reckoned without naming in the "family;" and others may be explained by supposing the 25 empty houses in St. Thomas to have come into occupation by persons with new names; but all these several causes seem inadequate to explain so large a discrepancy as that described. The only explanation that appears possible is that many persons, perhaps former inhabitants, must have used this parish for burials and for christenings, though they no longer actually lived in it; and this accords with a passage already quoted by me (p. 447) from an old writer, that "many are frequently removed from one parish to be buried in another, that are both within the bills."